



**STUDIES IN MANAGERIAL AND
FINANCIAL ACCOUNTING**

VOLUME 16

**PERFORMANCE MEASUREMENT AND
MANAGEMENT CONTROL: IMPROVING
ORGANIZATIONS AND SOCIETY**

**MARC J. EPSTEIN
JEAN-FRANÇOIS MANZONI**

Editors

PERFORMANCE MEASUREMENT
AND MANAGEMENT CONTROL:
IMPROVING ORGANIZATIONS
AND SOCIETY

STUDIES IN MANAGERIAL AND FINANCIAL ACCOUNTING

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SOCIETY**

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INTRODUCTION

EDHEC Business School is deeply involved in management control research, and more specifically in the field of performance measurement and strategy implementation. So in September 22–23, 2005, we were particularly proud to host the third *Workshop on performance measurement and management control* in our Nice Campus in France. This publication is the result of the various presentations and discussions made during this conference, and we are also proud today for this realisation.

In participating in this kind of event and publication, along with the European Institute for Advanced Studies in Management (EIASM), whose quality and results in the area of international research are well-known, EDHEC Business School aims to contribute actively towards the production and development of the main principles of management for the benefits of business, and thereby to amply fulfil our role on research, which is, in my view, inseparable from our missions.

I would like to thank all those who have collaborated to assure the success of this event and the realisation of this book, particularly professor Marc Epstein and professor Jean-François Manzoni as editors of this book and invited speakers during the workshop. I would also like to thank professor Eric Cauvin and professor Pierre-Laurent Bescos for the organization of the workshop.

Olivier Oger
EDHEC Business School Dean
(Lille and Nice Campus, France – <http://www.edhec.com>)

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PREFACE

Performance measurement and management control are critical components in improving organizations. The previous conference in Nice in 2003 focused on the determination of the specific actions that lead to superior organizational performance. This included the characteristics of superior performance and the identifiable features of management control and performance measurement systems that drive improved performance along with relevant performance measures. Some of the excellent recent research on this topic was reported in the prior volumes from the highly successful first and second Nice conferences in 2001 and 2003 and published by Elsevier in 2002 and 2004.

But, there are often dysfunctional consequences of the drive for superior organizational performance. The 2005 conference contained many excellent papers on the theme of how the design and implementation of performance measurement and management control systems can impact the organization, its employees, and society.

Numerous stakeholders are often impacted both positively and negatively by the drive for superior organizational performance. These stakeholders often include employees, customers, suppliers, the community, and others. At this conference, Marc Epstein focused his presentation on the impact of organizational activities on society and the identification, measurement, and management of the managerial actions that drive these social impacts and the measurement of the results. Jean-François Manzoni then focused on the impacts on employees. Their presentations focused on how organizations and managers can minimize negative internal impacts and externalities and use management control and performance measurement to improve both organizational performance and the impacts on employees and society. This work has significant implications for future academic research and managerial practice to improve organizational performance.

This book contains a compendium of some of the excellent papers presented at a workshop on Performance Measurement and Management Control: Improving Organizations and Society in September 2005 in Nice, France. Sponsored by the European Institute for the Advanced Study in Management (EIASM) and EDHEC School of Management, this workshop attracted leading scholars on management control and performance

measurement from around the world. We were privileged to provide invited plenary addresses to the workshop and were involved in the selection of the papers that were presented at the conference. The call for papers drew a response far higher than anticipated (over 250) and thus the competition to make a presentation at the conference was quite high. Further, given the space limitations in this book, another competitive selection was required. The contents of this book represent a collection of leading research in management control and performance measurement and provide a significant contribution to the growing literature in the area.

The primary questions addressed at the conference relate to the specific managerial actions that can be taken to drive superior organizational performance and the determination of the most appropriate measures of long-term success in organizational performance. Many papers also addressed the social impacts of these actions. The papers in this volume approach these questions using a variety of research methods. Some are more theory based and most include some empirical research including interviews, surveys, and field studies. These methods are used to explain how management control and performance measurement can aid in the implementation of strategy and the improvement of organizational and societal performance. The approaches are used in both for-profit and not-for-profit organizations.

The answers are not yet clear. But it is hoped that the papers included in this volume contribute to this growing body of knowledge and lead us to an improved understanding of how to build better organizations and evaluate and understand their performance.

The workshop owes its success to numerous individuals and institutions. Their superb support and assistance is greatly appreciated. Among those who contributed significantly are Graciella Michelante at EIASM and Pierre-Laurent Bescos, Eric Cauvin, and Olivier Oger at EDHEC School of Management. Finally, we thank the speakers and participants in the workshop. Their attendance and enthusiastic participation made the workshop an enjoyable learning experience. We are hopeful that this book will continue the search for additional understanding and development in performance measurement and management control, and provide guidance for both academic researchers and managers as they work toward improving organizational performance and society.

Marc J. Epstein
Jean-François Manzoni
Editors

**PART I:
IMPROVING ORGANIZATIONS
AND SOCIETY**

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IMPROVING ORGANIZATIONS AND SOCIETY: THE ROLE OF PERFORMANCE MEASUREMENT AND MANAGEMENT CONTROL

Marc J. Epstein

ABSTRACT

Organizational research and practice have increasingly focused on driving for superior organizational performance. But, this focus on high performance often also causes negative impacts on both employees and society. Researchers in management control and performance measurement can make major contributions to both academic research and managerial practice by better articulating the drivers and measures of success and organizational structures and systems needed for the implementation of sustainability strategies. Examples of recent research projects, a model describing antecedents and consequences of sustainability investments, and future directions for relevant research are discussed.

In our last conference here in Nice, we talked generally about performance measurement and management control – and focused especially on a theme of how managers can drive superior organizational performance – and how we would measure success (Epstein, 2004). Many of us have recently

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conducted research on attempts to link various organizational and managerial actions to financial performance and provide guidance on the actions, systems, and structures that more likely lead to superior performance (Epstein, 2004).

But, there are consequences of this drive for superior organizational performance. The pressure to produce profits can cause dysfunctional consequences both inside and outside the organization. Though my discussion here will include both internal and external impacts, I will focus particularly on the externalities – the impacts outside the corporation. (Jean-Francois Manzon, in his chapter, provides more focus on the impacts on employees and corporate culture.) I will also examine how these externalities can be internalized – and more importantly, anticipated so that negative externalities or social costs can be reduced.

And, the press is filled with stories about companies that did not properly anticipate the impacts of their activities on both society and their companies. Just recently, the following stories were in the press:

- (1) Walt Disney Company announced that it would investigate claims of unsafe conditions at Chinese factories that manufacture books for Disney (Disney to Probe Labor Claims in Factories, 2005). It is alleged that the employees were forced to work 10–13 h per day and were paid at a rate of 33 cents per hour, which is below the legal minimum wage and accidents are common with employees losing fingers. Though not owned by Disney, these factories manufacture Disney branded merchandise.
- (2) A garment factory in Bangladesh that manufactures sweaters for European retailers Carrefour and Zara collapsed killing at least 80 people. Some view this as part of the “race for the bottom” where multinationals seek out factories where labor is cheap and environmental, health, and safety laws are weak (Gunther, 2005).

And, there are many more similar stories every week!

Increasingly, senior managers recognize the necessity to consider all of the company’s stakeholders in making operational and capital investment decisions. They understand the importance of the development of a coherent sustainability strategy, commitment of the senior management team, and the communication throughout the organization. But, the most often cited challenge to the implementation of a sustainability strategy is converting the existing organizational structures, culture, systems, performance measures, and rewards to be more sensitive to sustainability and be more supportive of a sustainability strategy.

Similarly, though companies often proclaim a strong commitment to ethical behavior, they also often create such powerful incentive pressures to improve financial performance that the existence of “cooking the books” and other financial frauds should not be surprising. The same culture that can be so powerful in encouraging developments and creativity in business model and technology innovation can also create a culture of excess creativity in reporting financial performance. Both internally and externally, the potential dysfunctional consequences of the drive for superior organizational performance must be carefully monitored. Though centered on discussions of sustainability, the focus in this paper is not narrowly on programs that are aimed at corporate philanthropy or specifically designed corporate social responsibility or ethics programs, but more broadly focused on examining all of the social, environmental, and economic impacts of a company’s products, services, processes, and other activities.

And, some of these company examples turn into major crises and many do not. But, the companies are typically surprised and often they should not be. The impacts must be anticipated and better managed by larger companies and small companies alike.

So, what can management control and performance measurement systems do to help executives better manage the paradox of simultaneously striving for superior financial performance and contributing to both employee and societal welfare – of improving both organizations and society? And, it is both a paradox and a challenge to design an organization that can simultaneously motivate employees to strive for excellence in both financial and social performance. The increased globalization of both the capital markets and industry along with the rapid communication that is facilitated by the internet that allows broad and rapid distribution of information about company practices has an important impact on the decisions and challenges of senior managers trying to balance social and financial goals. Lets look at three examples.

MICROFINANCE IN GHANA

I was in Ghana in 2005 working on a research project related to microfinance – lending small amounts of money (typically around one hundred U.S. dollars) to existing small business people (about 85% women) to help them expand their businesses, improve their income, and help make their way out of poverty. Though microfinance has been successful for several decades and is presently being expanded globally, there is very little reliable data on either the drivers or measures of success. That is, there is very little

in either the academic or managerial literature that articulates clearly what specific management control systems and structures lead to success and when they are most effectively utilized. Further, the models and data related to the measurement of success is not well developed. So, though there is substantial anecdotal evidence that microfinance programs do have a positive effect, there is little convincing evidence of either the economic impacts or the social impacts on the individual, household, local community, or broader society. Are the borrowers lives improved through microfinance programs? Management control and performance measurement approaches can be very helpful in describing both the determinants and consequences of investments in microfinance and measuring the impacts.

Exhibit 1 describes the critical success factors that contribute to microfinance impact and success. It includes the primary inputs that guide the decisions of the MFI (microfinance institution) and the processes that the organization undertakes to provide services to its clients. These inputs and processes lead to success of the clients' businesses (intermediate outputs), and ultimately, the outcomes of MFI success and impacts on the clients, their households, community, and society.

The inputs in the microfinance contribution model help to establish the current context of the country and the microfinance institution. This includes

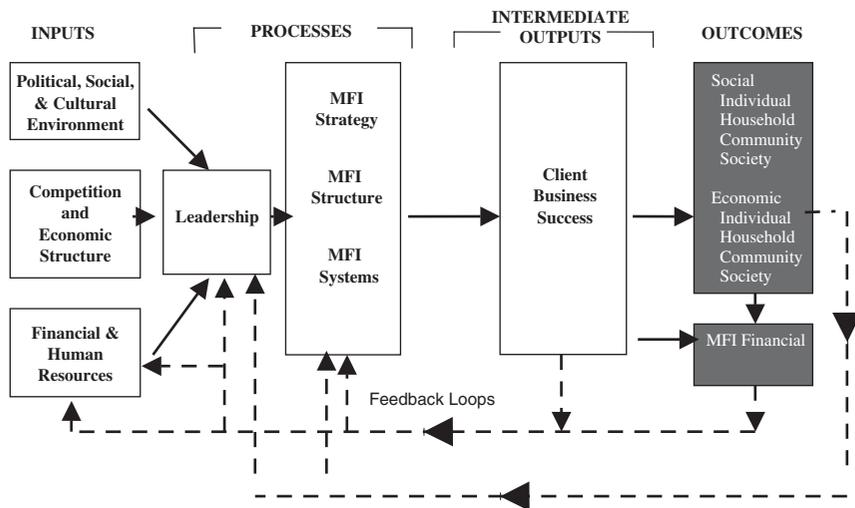


Exhibit 1. Microfinance Contribution Model: Antecedents and Consequences of Microfinance Investments.

the political, social, and cultural environment of the country and its stability, competition, and economic structure. These, along with the financial and human resource constraints of the MFI, help determine how the leadership will develop its strategy, structure, and systems in order to impact the lives of its clients and ensure the success of the MFI. The inputs and processes lead to improvements in the clients' businesses (intermediate outputs), which in turn, should lead to the long-lasting impacts (outcomes): improvements in the social and economic conditions of the individual borrower, their households, community, and society. Additionally, in order for microfinance to have continuous success, the MFI must be sustainable and continue to have financial resources available to impact more lives.

Once the objectives of microfinance have been determined, the drivers of success and their corresponding measures must be developed. The drivers specify the critical elements that influence microfinance impact and organizational success. Drivers identify relationships that flow from the inputs to processes and then to the outputs and outcomes (For further detail on this model and a detailed discussion and listing of the associated performance measures, see [Epstein & Crane, 2006](#)).

This microfinance organization in Ghana is also interesting in that it is in the process of converting from a non-profit organization to a for-profit savings and loan. So, what changes would we anticipate and how do new pressures to produce profits impact the organization? The challenge becomes clear as a new organizational structure designed to raise additional capital to improve the lives of more people may also cause increased pressure to reduce transaction costs related to these small loans and increase average loan size, thus no longer loaning to those most in need of help. How can management control systems and performance measurement systems be changed to insure that both the organization and society are better off?

Further, what are the impacts of specific organizations on society? How can we measure the impacts to know whether the impacts are positive or negative? What does management control and performance measurement research tell us about how to simultaneously improve corporate performance and increase the benefits to society?

SOCIAL AND ENVIRONMENTAL IMPACTS IN WYOMING

Sally Widener and I recently completed a research project ([Epstein & Widener, 2005](#)) that examined the social, environmental, and economic

impacts of natural gas drilling. In the United States, Wyoming is both the most active region for natural gas exploration and the longest migration route for big game animals like pronghorn antelope and mule deer moving from the summer pastures in Yellowstone and Grand Teton National Parks and the winter ranges in southern Wyoming. To alleviate environmental concerns, regulations were implemented long ago to restrict developmental drilling to only the winter months avoiding the animal migration period. But, the gas drillers want to begin year round drilling and though there are many statements regarding assumed impacts on wildlife, environment, drilling costs, the community, tourism, and so forth, there was almost no reliable data available to make decisions. The drillers wanted the information, but so did the environmentalists, the fish and game regulators, the city, state, and federal agencies, chamber of commerce, and others.

Our research project focused on a process to better identify, measure, and report these impacts so that better managerial decisions could be made. To make the inevitable tradeoffs, all impacts needed to be in comparable monetary terms and a variety of techniques including willingness to pay and the triangulation of four research methods including local and national surveys, interviews, and archival data was utilized. The impacts (both positive and negative) can be as diverse as impacts on schools, tourism, job creation, commercial sales, and crime along with the impacts on the wildlife and environment.

The gas drilling companies have some discretion as to the specific location of their drilling sites (just as oil drillers do with the location of their offshore oil drilling platforms). Those choices often have significant implications on social impacts. Often, minor accommodations can be made to slightly increase short-term financial costs with a large decrease in social costs. This can lead to a significant long-term positive increase in profitability due to decreased community concerns, protests, and damage to reputation. But, a broad and rigorous identification, measurement, and analysis of the impacts is seldom completed.

The impacts can be measured and by broadly identifying the impacts and measuring them, the various stakeholders better understand the impacts on their constituents and have better information for decisions. This is one application of using academic research on economics, management control, and performance measurement to improve decisions in both the for-profit and non-profit sectors. Researchers can better identify models to provide the identification, measurement, and decision models to better understand and manage social and environmental impacts. The gas drillers can minimize impacts through a variety of options and can mitigate impacts through

other means. And, they do not want to be surprised, as they have often been before, when their activities caused unanticipated impacts that later caused significant costs of cleanup, community relations, or reputation.

By better understanding how the organization's activities impact the social, environmental, and economic fabric of the community, better organizational decisions can be made and the tradeoffs can be more effectively evaluated. To better facilitate the implementation of the concerns for social and environmental impacts or the concerns for sustainability, companies need more effective management control and performance measurement systems that are designed to integrate these impacts into monetary terms and integrate them into the decision-making process for both operational and capital investment decisions. In this way, operating managers have better guidance to address the paradox of achieving excellence in both social and financial performance.

LOCATING MANUFACTURING FACILITIES

The site location decisions for multinational corporations have never been easy. But globalization and the social and environmental impact of activities along with the ability to rapidly communicate throughout the world via the internet, has magnified the complexity. In addition to evaluating labor and raw material costs, shipping costs, political and government stability, stability of currency, etc., corporations now must also evaluate both the benefit of cost savings along with the potential negative impacts from mandated over-time, plant emissions, child labor, living wage issues, and so forth.

Some companies thought that outsourcing might eliminate the problem and that they would have no responsibility for these issues with non-owned facilities. Companies in the toy, apparel, and footwear industries (along with many other industries) manufacture in developing countries with low wage rates and less restrictive environmental controls. When companies adopt local standards and reduce operating costs, they often incur long-term damage to reputation due to criticism by Western consumers over those local practices. Even large retailers like Walmart attempted to evade these problems by arguing that they were not responsible for the production and were later held accountable by their customers.

The implications are clear. When companies are making location decisions, a much broader set of both impacts and stakeholders must be considered in the investment decision. This places a responsibility on researchers and managers in management control and performance measurement to

develop the systems to better measure these impacts on reputation along with the impacts on both revenues and costs from unhappy customers, regulators, employees, and others. These impacts often seriously affect product and corporate profitability. Further, guidance is often necessary and systems need to be developed to aid managers in analyzing tradeoffs and implementing policies related to social and environmental impacts. This need includes the development and implementation of systems to mitigate social and environmental risk and better management of the risk of these occurrences.

Two sets of questions arise. (1) How can companies mitigate these risks and what is the cost of that mitigation? and (2) What choices are available for the unmitigated risk? What is the cost to both society and companies including the potential or actual damage to corporate reputation?

Whether gas drilling in Wyoming or gold mining in South Africa, what is the effect of operations in extractive industries where companies take men, move them from their families for months at a time, and have them work in the mines? What often develops is increased alcohol and drug consumption and increased prostitution. Today, many believe that companies must assume some responsibility for these impacts and determine how to reorganize their activities to reduce the impacts and the risks to both society and corporate reputation.

Companies must consider these long-term risks and impacts before making operational and capital investment decisions and integrate these risks and impacts into decision models and ROI calculations. Researchers in management control and performance measurement need to help develop the models and measures necessary for this integration. And, these need to be anticipated and included in ROI analyses so surprises of negative externalities and damage to reputation are minimized. Companies should recognize and accept these risks with an understanding of the potential impacts on long-term profitability and stock price.

The consideration of the effects of corporate activity on various stakeholders to improve investment decisions certainly includes the location decisions cited above. Identification and measurement of the potential effects on reputation and how this may effect profits is also critical. These all should be a part of a better understanding of the risks involved in management decisions. Investment analysis, risk analysis, and risk management have been woefully inadequate when not including social and environmental considerations explicitly in the investment decisions. Companies should be able to estimate the potential effects of decisions (like child labor, environmental emissions, and so forth) on reputation and risk and integrate it into ROI calculations. Some recent research provides a framework and measures

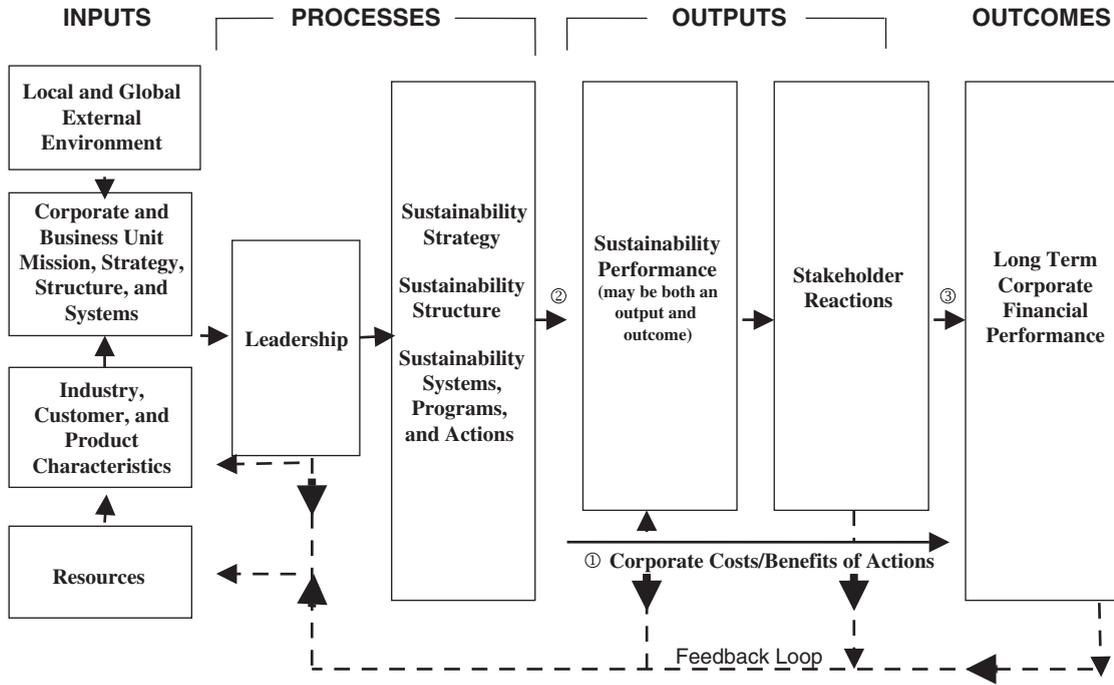
for the analysis of both perceived and real social and political risk and the integration into management decisions. It also examines alternative approaches for the preparation for and mitigation of social and political risk (Epstein & Bekefi, 2006).

In addition to the importance of carefully identifying and measuring the drivers of success in corporate sustainability, managers need a better understanding of the critical interrelationships between sustainability performance and financial performance. This will provide better guidance on how to make better investment decisions that explicitly include social, political, and environmental risks and identify the specific actions and measures that are necessary to drive improved organizational performance.

A MANAGEMENT CONTROL AND PERFORMANCE MEASUREMENT MODEL FOR CORPORATE SOCIAL IMPACTS

The model presented in Exhibit 2 builds on earlier work (Epstein & Wisner, 2006; Epstein & Roy, 2001; Epstein, 1996; Epstein & Birchard, 1999), and describes (1) the antecedents (drivers of success) and consequences (payoffs and measures of success) of investments in sustainability and (2) a way to analyze the social, environmental, and economic impacts of corporate products, services, processes, and other activities. This model is used to improve decision-making related to both targeted sustainability expenditures along with other more general capital and operational investment decisions. It describes the critical role of management control and performance measurement in improving both social and financial performance. The three major sets of impacts relate to (1) the direct and specific financial costs and benefits of corporate actions, (2) the social (or sustainability) impacts of these corporate actions, and (3) the financial impacts that are a consequence of the sustainability performance and the related stakeholder reactions. The numbered arrows on the exhibit portray these three sets of impacts. For a more detailed discussion of these impacts, see Epstein (2006) and Epstein and Leonard (2006).

Though there are numerous inputs that act as constraints to improved corporate sustainability, managers have significant ability through leadership and the formulation and implementation of a sustainability strategy, structure, and systems to effect corporate sustainability performance. As seen in Exhibit 2, the output of these leadership, management control, and



There are three major sets of impacts.

- ① Corporate Financial Costs/Benefits of Actions
- ② Social Impact
- ③ Financial impact through sustainability performance

Exhibit 2. Sustainability Contribution Model: Antecedents and Consequences of Sustainability Investments.

Source: Adapted from Epstein and Roy (2001).

performance measurement processes is the sustainability performance – that is the effect of corporate activity on the social, environmental, and economic fabric of society. In addition to having an effect on society, these activities often affect corporate financial performance. This typically occurs through various positive and negative stakeholder (such as customers, employees, regulators, and consumer activists) reactions such as additional purchases, consumer protests, employee loyalty or resistance, and government regulations. These stakeholder reactions affect corporate profits and are a part of the business case that has been widely discussed in both academic and managerial circles. (See, for example, [Schnietz & Epstein, 2005](#); [Epstein & Roy, 2003b](#)) It also often creates valuable feedback to the reconsideration of existing sustainability strategies and implementation. This model has proved useful to aid managerial decision-making, carefully identifying the drivers of success in corporate sustainability, and better understanding the critical interrelationships between sustainability and corporate financial performance. These often ignored social and environmental variables have often been later seen to have major effects on long-term corporate profitability. The exhibit also notes importantly that sustainability performance can be both an intermediate output and an ultimate outcome. This recognizes that these social impacts should be seen as important as companies attempt to minimize negative social impacts and also identify opportunities to simultaneously improve both social and financial performance.

To effectively implement a strategy of sustainability and to better integrate the consideration of social, environmental, and economic impacts into operational and capital investment decisions, both the identification and measurement of impacts are necessary. [Post and Epstein \(1977\)](#) have described both an activities approach and an overview approach to the systematic scanning of social impacts. In recent publications (see for example [Epstein, 2006](#); [Epstein & Roy, 2001](#); [Epstein & Roy, 2003a](#)) we have proposed a large number of measures that can be used to evaluate these impacts. This includes distinct measures for inputs, processes, outputs, and outcomes. Some of these are easier to integrate than others. Thus, though reputation is clearly a major factor in the analysis and actions of major multinationals and related stakeholder reactions are critically important, there is little academic research or managerial guidance on how to measure reputation. Some writers have discussed many of the issues extensively (for example see [Fombrun, 1996](#); [Fombrun & Van Riel, 2004](#)), yet there has been little work on relevant measures. There has been some academic work on how reputation affects stock price and income (see for example, [Epstein & Bekefi, 2006](#); [Schnietz & Epstein, 2005](#)). But, much more work is needed.

THE CHALLENGE OF SUSTAINABILITY STRATEGY IMPLEMENTATION: TWO ADDITIONAL EXAMPLES

Royal Dutch Shell Group – The model for the business case for sustainability and the roadmap for implementation that [Royal Dutch Shell Group, 2001](#) developed has generally been considered among the more ambitious programs in industry. But, the implementation was and is a challenge. Even senior leaders at the company acknowledge that the crisis related to the need to restate earnings due to overvaluation of oil and gas reserves in 2004 had significant impacts on the company’s reputation. “Only by continuing to focus on achieving a strong economic, environmental and social performance can the expectation of shareholders, customers and society be met, licenses to operate retained, and the damage to the Group’s reputation repaired” ([Wade, 2006](#)).

But, how can a company of Shell’s size and complexity implement a strong sustainability strategy and yet still meet the significant pressures to produce excellent financial results. Are not these often in conflict? How can a large multinational company take the business case for sustainability and an excellent framework and translate it into managerial actions? To implement sustainability, including issues related to good governance and ethical behavior, management control and performance measurement systems must be developed that encourage appropriate behavior. When plant or business unit managers are rewarded primarily or solely based on short-term financial performance, as is currently customary in most global companies, they often do not make voluntary investments to reduce negative environmental or social impacts. Even when the CEO makes strong statements to support sustainability, the management control and performance measurement systems must support those statements and be fully aligned or they will seldom be effective. So, issues related to both the core commitment of the corporation for sustainability and the incentives to execute on the commitment become relevant.

General Electric – General Electric’s CEO Jeffrey Immelt said that in addition to execution, growth, and great people, the company needed “virtue” to keep it on top ([Gunther, 2004](#)). He says that he wants to place new emphasis on values. He also introduced a new program called “ecomagination” committing 1.5 billion U.S. dollars to investments in environmentally sound technology. How can a leader take this \$150 billion company with 300,000 employees and develop a culture that continues to emphasize and produce profitability and yet respond to the CEOs call for more virtue and environmental and social responsibility?

In part, Immelt says that he is linking bonuses to more non-financial and stakeholder related measures, to new ideas, with less emphasis on bottom-line results. But, he is also clear that the actions must make business sense. The management control and performance measurement literature is incomplete at best in these areas. How important is linking the performance to rewards? Should these rewards be monetary or are non-monetary rewards like recognition sufficient – and how large must the rewards be? Can G.E. rely on an emphasis on culture, virtue, values, and a belief system or does the complete management control system and performance measures need to be aligned for this to be successful?

Unfortunately, the guidance that academic research can currently provide is unsatisfactory. More research needs to be completed on how to motivate employees to focus on those items where the link to short-term profitability is unclear. The long-time horizon and high level of uncertainty related to the payoffs of social and environmental investments makes the management of these impacts more challenging. And, managing the tradeoffs by business unit, geographical unit, and plant managers is often difficult.

IMPROVING SUSTAINABILITY STRATEGY IMPLEMENTATION: THE CRITICAL ROLE OF MANAGEMENT CONTROL AND PERFORMANCE MEASUREMENT RESEARCH

Management control and performance measurement is critical for improving corporate sustainability. The various tools and techniques of systems, structures, performance measures, rewards, and culture can all be used to aid managers in dealing with the pressures and paradox of simultaneously striving for excellence in both social and financial performance. Companies like Shell and G.E. can better implement sustainability through the effective use of these tools and techniques. But, further research is necessary for both the development and testing of these systems and measures and the determination of the most important drivers and measures of success. Models such as presented here need to be further refined and tested to provide effective guidance on the specific managerial actions to drive improved sustainability and financial performance.

There is substantial organizational pressure to strive for superior organizational performance. This pressure has certainly been increased as globalization has grown. Companies commonly buy abroad and manufacture in

Asia, South America, and Africa where labor costs are low. But the management challenges are high. Management control researchers can provide needed insights into how this can best be accomplished both by senior managers and other managers through organizations who are typically evaluated primarily on financial performance. We must find better ways to both measure and reward performance so better managerial decisions can be encouraged. This is necessary in microfinance where organizations are trying to maximize the social benefit and in the environment in Wyoming where organizations have many stakeholders (with different goals) all interested in determining the impacts of these corporate activities on the society and on their own institutions.

What can management control and performance measurement research contribute? Researchers can address both pressing research needs and also provide more specific guidance for managerial practice. Among the most pressing research needs are:

- Testing of existing models for identification of social, environmental, and economic impacts. Which stakeholders should be included and which impacts should be included? How broad should analyses be?
- Developing and testing decision models for managers at various organizational levels and functions to aid in managing the paradox of managing social and financial goals. This has broad implications throughout managerial practice and an improved understanding of these decision models would be very helpful.
- Developing, testing, and evaluating the appropriate (a) organizational structures, (b) systems, (c) performance measures, (d) culture, and (e) rewards necessary to integrate sustainability into standard organizational practices and both operational and capital investment (Return on Investment (ROI)) decisions.
- How can companies evaluate the payoffs of investments in reducing negative social and environmental impacts? This includes both development and testing of appropriate performance measures.
- How can companies measure the impacts on reputation and other stakeholder reactions and the impact on stock price and profitability? Presently, our measures are incomplete thus limiting analysis and effective decision-making both internally and externally. Both internally and externally, CSR reports and analyses are often not seen as credible.

There is much that we know that can be applied and much future research to be completed. Large data bases are often available. Field studies are necessary. Field experiments can be worthwhile. Further developments of

measures is needed. This research is critical and can make a significant contribution to academic research and to the long-term success of both corporation and society.

Management control and performance measurement has much to contribute. Improved management of the social and environmental impacts of corporate activities requires careful models, development of specific measures, and measures that do link to performance (social and financial). Society and organizations need more managerial guidance and more academic research. Both are critically important for our profession, for societal well-being, and for long-term corporate success.

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REFLECTIONS ON THE HUMAN IMPLICATIONS OF THE SEARCH FOR CORPORATE PERFORMANCE

Jean-François Manzoni

ABSTRACT

Over the last few years, many large organizations have reported substantial increases in profitability and stock market indices around the world have tended to increase. Many observers wonder to what extent part of this enhanced performance is obtained at the expense of employees and managers internalizing so much pressure and stress that the quest for performance may be becoming self-defeating. This chapter presents some personal reflections on this question. I argue that stress and lack of managerial bandwidth are indeed endemic in most large organizations, but that organizations have ways to combat this phenomenon. I develop four areas through which organizations can help decrease managerial pain, and in some cases create exhilarating environments. I conclude with five potential implications for Management Accounting and Control Research.

The last few years have been reasonably good for large organizations. Many companies have reported substantial increases in profitability and have seen corresponding rises in their stock prices, leading to increases in the major

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stock market indices around the world. This ought to be good news for most people, as investors re-inject part of their gains in their local economies and successful organizations can in principle hire more employees, thus creating direct and indirect employment.

Yet in many developed countries, the last few years have also led to headlines like the one I read recently in the local newspaper: “The stock market is sizzling, employees are trembling”. More generally, while in the 1960s and 1970s a large proportion of the population tended to believe that was good for the economy was ultimately good for the country’s citizens (as epitomized by the famous “what’s good for General Motors is good for America”), I observe in many Western economies a growing skepticism over whether this is indeed the case.

In part, these questions are being asked because an increasing number of jobs are being “offshored” to countries featuring lower labor cost, be it South America, South East Asia, Central and Eastern Europe or in some cases North Africa. Will this process ultimately create wealth in developed economies? Most economists argue it will (see, for example, [Blanco, Farrell, & Labaye, 2005](#)). Some analysts also argue that allowing developing countries to progress economically ensures a more peaceful world (as countries that trade together are less likely to go to war) and decreases the risk of massive migration of populations (as locals feel less need to move to more developed economies in order to find a job).

I am neither an economist nor a political scientist, so I do not have a well-informed view on these complex questions. Based on what I know and think I understand, I accept the idea that the globalization of the economy is generally good for the world and, medium to long term, good for “developed economies” and their citizens.

More preoccupying to me is the growing perception that part of this financial performance is extracted from employees through a more intense and stressful work experience. In the fall of 2005 alone, two major US business magazines devoted their cover story to managers’ workload.¹ In France, in the first quarter of 2004, at least three major publications ran headlines focusing on the pervasiveness of stress at work.² Switzerland, too, is exposed to concerns over “Burn-out: the epidemic that is striking Switzerland”.³

Whether they represent a changing reality or a more acute perception of an old situation, these elements legitimately raise a question that was at the heart of the theme of this 3rd Workshop on Performance Measurement and Management Control: Is improved corporate performance achieved at the expense of employees?

This chapter presents my personal impressions on this subject, based on the research, teaching and consulting work I have conducted with a number of organizations over the last few years. This research, teaching and consulting works puts me in contact with many organizations in Europe, North America and Asia, but that number still represents a very small and unrepresentative sample of organizations and countries. These remarks are hence presented with the modesty appropriate to the complexity of the task and my personal limitations.

STRESS AT WORK

While I am conscious of the fact that there is no way to document this view scientifically, my own impression is certainly that there is *a lot* of stress in organizations I work with, and that there is more stress now than 10 or 15 years ago. I see three reasons for this generally high degree of stress.

The first is simply the acceleration and intensification of performance pressures, driven by demanding financial markets, increased availability of information and the speed of technological innovation, all of which result in a world that is simply moving a lot faster than it used to; innovations and competitive advantages that might previously be enjoyed for years increasingly get challenged in months, and competitive weaknesses are rapidly exposed and ruthlessly taken advantage of by fast competitors.

A second factor, connected to the first, is the incredible proliferation of initiatives and change programs within large organizations. Between new initiatives coming from head office, new programs started at the divisional level, old initiatives that seem to have acquired a life of their own and don't get killed despite their lack of effectiveness, the overwhelming majority of organizations I come in contact with are buckling under the weight of 1,001 initiatives.

The third factor is the increasingly pervasive availability of technology that enables managers to remain connected and reachable 24 hours a day, 7 days a week. I remember a world – some 20 years ago – without faxes, mobile phones, e-mails and of course without blackberries, where executives attending executive development programs would get an occasional phone call but were largely able to disconnect from the office for a few days. This is now simply impossible. What started as an enabler has become a constraint – the technologies that initially helped us to function faster have resulted in an *expectation* of speed and instantaneity, making it exceedingly hard for managers to disconnect and recharge.

Moving from causes to consequences, I see three major sets of consequences of this high degree of stress and of large corporations' relentless search for performance.

- (1) One consequence is that people get sick. Beyond the popular press headlines, an increasing number of studies are documenting the human and economic cost of stress at work (see [Shirom, 2003](#), for a review). In the UK, for example, stress-related illness is the leading cause of long-term absence from work among non-manual workers, according to the UK's Chartered Institute of Personnel and Development ([Maitland, 2005](#)). Work-related stress was estimated by a British Institute of Management study to cost £7 billion (\$12 billion) a year to the British economy ([Aitken, 1999](#)), by another study to cost 187 million working days a year and £12 billion (\$20 billion) to the UK ([Hobson, 2001](#)). On an even larger scale, the American Institute of Stress (a non-profit research organization) reported that stress cost US businesses between \$200 and \$300 billion a year in lost productivity, increased workers' compensation claims, turnover and health care costs (see [Atkinson, 2000](#)).
- (2) Closer to my own observations, I see a large number of managers that are "working wounded". They show up for work, they even work long hours, but when they are not largely disconnected from their and others' emotions (which many of them are), they are in psychological pain. Two quick examples that I don't claim to be representative, but that I choose among many others to illustrate this state of mind: The first come from a 30-something partner in a major audit firm. I was working with a group of 15 such partners and was looking for a moment that had been exciting in their professional life. I asked them how they felt when they were named partners. After a few seconds of silence the most insightful member of the group (based on six hours of interaction with the group) asked me "Do you want a honest answer?" After I replied positively, he said: "I thought "same old s-t"". That was clearly not the answer I had in mind ...

Similarly, a very senior executive in a Fortune 10 company started her discussion session with a group of senior managers by explaining that, while she was enjoying her current job enormously, she had almost quit and retired (very prematurely) a year earlier, as she had been feeling for about a year that she "would never be able to be excited by work again". She explained how she had started to dread having to go back to work

on Monday mornings. She even started calling colleagues on previous jobs asking them when was the last time they had seen her be really engaged in her work, hoping to understand what she had lost in the process.

In addition to a large number of executives, I have also seen management teams in this situation. In one recent example, the management team of a division of a NYSE-quoted firm was completely stuck by their feeling unfairly treated by the Group's executive committee. The Group had needed the division to increase rapidly its profitability in order to make up for another division's problems and avoid a major crisis for the Group. To produce this rapid profit increase the division had abused its quasi-monopoly position and rapidly raised its prices. Customers had no choice in the short term and profitability indeed increased. After two years of customers encouraging the emergence of competitors, prices were now dropping rapidly and the division was under pressure to make up for this shortfall. Instead of concentrating their attention on doing so, the management team was stuck in sterile feelings of having been set-up and rehashing "we told them this would happen, how can they now pressure us to correct this situation".⁴

- (3) The third consequence is less psychological and probably less controversial: Most managers I come in contact with are simply overwhelmed. They have become very short on bandwidth, which I define as "the cognitive and emotional ability to process and act on complex information". This shortage of "bandwidth" is particularly problematic given the increasing complexity of problems executives must solve and the short time they have to solve them (which is leading some to encourage organizations to "hire for smarts" (see [Menkes, 2005](#)), something an organization like SAB Miller has been doing for years). Here are three examples (again, among many such examples) of the type of shallow thinking I am observing.

Inability to Prioritize

The executive committee of a "publicly traded, one point something billion dollar sales" organization is finalizing its budget for the following fiscal year. After months of hard work, these final moments are characteristically unglamorous, with senior vice-presidents really scraping the bottom of the barrel looking for one more FTE (Full-Time Equivalent) to contribute to

the cost saving pot. As they are reaching a conclusion, the following conversation takes place:

CFO: “That’s the best I can do. That is, of course, unless we look at our myriad of European subsidiaries and consolidate them into one legal entity. That could clearly free up, oh, 30 or 40 FTEs. It would also make our lives tremendously simpler!”

Me, very surprised: “Wow! Is it more like 30, or more like 40?”

CFO: “I don’t know, we’d have to look into it”.

Me, later in an off-line conversation: “(name), I don’t understand. You and your team have been working on this budget and these cost reductions for weeks, you’ve spent countless hours looking for one half FTE here, another half there, and now you tell me that there could be 30 to 40 FTEs easily achievable, from a project that would also increase speed and simplicity. Why didn’t you look into this earlier?”

CFO: “What can I tell you, it didn’t make the Top 3”.

This sentence – “it didn’t make the top three” – really struck me. The CFO continued to explain what the Top 3 had been. Unsurprisingly, number 1 was complying with Sarbanes-Oxley, number 2 involved difficult negotiations with creditors and number 3 was equally urgent. So the Top 3 were indeed essential projects and were clearly worthy of a lot of the CFO’s time. If the CFO and his team had *only* been working on these three projects, I could have understood. But they did not; they devoted significant amounts of time to other projects that were not Top 3 and were far less potentially useful than the consolidation of European legal entities. So this was not a case of a senior executive not having enough time, it was a senior executive so swamped he could not identify and keep track of the key priorities.

Incorrect Decision Making

I am occasionally asked to work with management teams to help them manage difficult change processes. In that capacity, I have worked with a few management teams on managing downsizing programs, including plant closures that had to be effected following important strategic decisions on the product portfolio. In two of these cases – which I grant the reader is not a large number, but is still two too many – my asking a few (reasonably simple) questions led the management team to start asking themselves whether they should not in fact specialize their factories differently and close another plant instead. The shocking part is that these were not preliminary discussions! In both cases, decisions had been made following weeks of analysis and discussions, but the quality of these analyses was simply very

low. I should also say that these were not uneducated managers who did not know better, these were reasonably smart managers who were simply overwhelmed and could not think properly.

Short Attention Span, and Hence Weak Strategic Analysis

A few months ago I was working with a group of senior executives (Top 0.1%) in a very large international group. One of the subjects we discussed was Kaplan and Norton's (2004) notion of Strategy Maps. The group was given some documents on another organization and worked for about two hours on developing the strategy map for this organization. The assignment's objective was to give the group a feel for the power as well as the complexity of the strategy map development process.

One member of the group ($n-1$ in the group's second largest Business Unit (BU)) was seduced and expressed interest in pursuing this idea with her colleagues on the BU's management team. She asked how long this would take. I replied that in order to involve the relevant people in the process, it would probably involve quite a few meetings over a few months. Her reply was something like: "You've got to be kidding! I can take this home if it takes one to two half-day meetings, but if we're talking months there's no way the management team will have patience for this".

Again, this is not an extreme and isolated incident in my contacts with large organizations. This is a fairly typical reflection of the extreme degree of busyness and the shortness of attention span I observe on an ongoing basis. One of the consequences of this short bandwidth is a pervasively low quality of strategic analysis (beyond – but also sometimes including – the individuals explicitly in charge of thinking about the organization's business strategy). Most organizations I come in contact with do *not* have a strategy in the strict sense of the word – an observation also made by Hambrick and Fredrickson (2001). They have a set of initiatives ("our five strategies"), a set of targets ("12% next year, 14% the following year"), a "strategy" that does not distinguish them for their competition or one that's simply completely unrealistic given the organization's competencies and resources.

I have no way of assessing conclusively whether these bandwidth-related pathologies are more prevalent today than a few years ago. Already more than 30 years ago, Mintzberg (1973) observed several senior executives and reported activities characterized by "brevity, variety and fragmentation" and an "unrelenting pace". All I can say is that I am struck by the degree of

stress managers are experiencing nowadays, and I do not remember their lives being as stretched a few years ago.

Does that mean we have come to a point where the search for performance is taking such a toll on managers that the process has become self-defeating? Are (too many) managers working so hard that they can no longer think straight, enjoy themselves and be productive?

For many managers I come in contact with through research, teaching or consulting assignments, the answer is Yes. The relentless search for high performance and instantaneity expectations are leading them to work so hard, deal with so many issues and internalize so much stress that they are performing below their capabilities. Importantly, however, this empirical regularity is not a fatality. Not all managers suffer from these pathologies. Even more interesting, some organizations seem to do a better job than others at repelling them, which suggests that long hours and high work intensity do *not have to* lead to psychological pain and decreasing productivity.

Regarding work hours, we have all noticed in our own lives that long hours are only one part of the stress story. Some days we spend 12 hours at work and go home exhilarated and energized, while other days we leave the office exhausted and frustrated after a few hours of work. Providing empirical support for this intuition, [Welbourne, Andrews, and Andrews \(2005\)](#) indeed found that perceived efficiency at work was a strong predictor of job satisfaction, while “pace of work” was not.

It is also striking to interview managers who have worked for a few years at companies like General Electric or Dell. Some of them left GE 10 years ago yet continue to speak about their time there as among the most exhilarating years of their life. They say they miss the sense of drive and collective alignment, the feeling of “if we set our minds to accomplish something we would accomplish it” that they experienced then and no longer experience as much with their new employer.

They also remember that GE and Dell were (and remain) demanding work environments, driven by intense performance pressure and a correspondingly high “stress”. But perceived stress is not only a matter of the demands placed on the individual; it is rather a function of relationship between these demands and the individual’s perceived capacity to meet them (see, for example, [Edwards, Caplan, & Van Harrison, 1998](#); or [Maslach, 1998](#)). These managers describe being placed under high demands but also having a high perceived capability to meet these demands.

Over the last few years, many books have been written on “high-performance organizations” (see [Manzoni \(2004\)](#) for a non-exhaustive, but

nevertheless long list). Some of these efforts originate from consultants and senior executives, but a growing number of scholars are also trying to understand the characteristics of “exhilarating environments”. Positive Organizational Scholarship (POS) is one such effort. From a Center based at Michigan University’s Ross School of Business, POS includes researchers focused on understanding “the dynamics that lead to developing human strength, producing resilience and restoration, fostering vitality, and cultivating extraordinary individuals, units and organizations. (...) POS ... draws from the full spectrum of organizational theories to understand, explain, and predict the occurrence, causes, and consequences of extraordinary individual, unit, and organizational performance” (Cameron, Dutton, Quinn, & Spreitzer, 2006).⁵

HIGH-PERFORMANCE POSITIVE WORK ENVIRONMENTS

POS researchers are actively trying to identify the enablers of such positive, high-performance work environments. In their concluding chapter, Cameron, Dutton, Quinn, and Wrzesniewski (2003a) position causal associations and enablers in their “puzzles and unanswered questions” section. I certainly do not claim to have answered the questions and solved the puzzles, but I would still like to propose four characteristics that I see as potentially conducive to positive, high performance work environments.

Shared Passion for What We are Trying to Achieve, Why and How

Organizations feature various forms of interdependence among employees (Thompson, 1967). Being dependent on the actions of others can generate massive amounts of frustration and stress, especially if I cannot rely on these others to deliver on a timely basis the actions that will help me do my job and create value. The absence of trust that others will deliver encourages the introduction of slack and the development of internal politics and impression management, none of which are particularly exhilarating.

A more exhilarating environment would feature employees – starting of course with the top management team – “all” (i.e., in their vast majority) sharing a strong desire to make happen a shared appealing *vision*, by implementing an effective *strategy* designed to help the organization make the most of the *playing field* it has defined. Let me try to be more specific.

To be more specific we first need to agree on some vocabulary, which is not as trivial as it sounds given the large number of terms available. Most executives I work with are largely unclear about the meaning of terms like mission, vision, aspiration, strategic intent, core ideology, purpose or Big Hairy Audacious Goal (Collins & Porras, 1994). In the absence of official definitions for these often overlapping constructs, the first necessary condition would be for the top management team to agree on a shared meaning for the words. My own understanding goes as follows:

The corporate *mission* (typically summarized in the organization's "mission statement") identifies the playing field. Which business are we in, which industry are we in? The archetype of this question is the famous Marketing Myopia question (Levitt, 1960): Are you in the railway business or in the transportation business? Or take a casino: Is a casino in the gambling business or in the "having a good time" business? If a casino is mainly a gambling operation, non-gambling components like restaurants and shows will receive less managerial attention than if the casino is in the "good time" business. The profile of customers to be targeted and the way we go about seducing them will also be very different.

Within a given playing field, there are various ways to win – various possible strategies. Hambrick and Fredrickson (2001) provide a very useful framework that distinguishes five major elements to a strategy, providing answers to five questions: Arenas: where will we be active? Vehicles: how will we get there? Differentiators: how will we win in the marketplace? Staging: what will be our speed and sequence of moves? Economic logic: how will we obtain our returns? They also highlight that the answers to these questions must be coherent with one another and must fit with the organization's environmental and competitive conditions, resources and competencies.

The organization's strategy, designed to help it win in the playing field it has defined, should help it reach its *vision*, where the vision is an appealing ambition set for the organization. Vision statements often include words like "the first ..., the best ..., the leading ...". The archetype of the effective vision is President John F. Kennedy's 1961 "man on the moon" speech: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth".⁶ An interesting way to help organizations calibrate how exciting their vision is to first ask them to articulate why JFK's "man on the moon" worked so well. The list of reasons can then be applied as evaluation criteria for their own vision statement.

It is not clear that an inspiring vision statement is always necessary. (Recall Lou Gerstner's famous statement "the last thing IBM needs right now is

a vision”). Still, as documented by Collins and Porras (1994), an inspiring vision statement can clearly contribute to energize the troops (by proposing a grand project they want to be part of), guide choices and focus energies (to make the vision happen).

Last but not the least, the organization must identify a few *values* that will guide employee behavior on an ongoing basis, particularly in times of doubt and when exposed to the temptation to “cut corners” in order to meet immediate performance objectives. Of course, all organizations have one or more official sets of values, prominently displayed on their web site. Interestingly, however, when questioned about these values few managers can recall them easily. Yet it would seem that for these values to have an impact on managerial behavior, they should be reasonably “top of mind” for these managers.

My choice of terms (mission, vision, strategy and values) is obviously quite debatable. I could have used other words. But regardless of the words, the idea is to always use the same word to describe each of four constructs.

Addressing these four domains and answering the underlying questions in a differentiated, internally and externally consistent manner requires time and focused energy. Organizations often spend a lot of time on these questions, but this time investment is typically broken up in a series of short meetings that do not allow to surface and solve the differences of opinion that exist within the management team. Settling on bland, undifferentiated strategy and values is often a way to smooth over these differences.

Based on their work with several organizations to help them identify (and mobilize to address) their “Must-Win Battles”, Killing, Malnight, and Keys (2005) highlight the need to take significant blocks of time to discuss and agree on these four domains. Too few organizations do so. Sharing a clear destination and roadmap is not a sufficient condition for a group of individuals to get to the destination together, but it is certainly a necessary condition!

Alignment of Business Model and Managerial Levers

Another necessary condition (for a group of individuals to get to the destination together) is for managerial levers to be aligned to re-shape employee behavior in the direction identified above. One of the major causes of frustration and stress in organizations is the multiple messages employees receive from various behavioral levers they are exposed to. They are being asked to cooperate, but they work in separate units (structure), each operating with

its own goals (performance evaluation, evaluation and reward), and they are often lacking processes and technology to support their cooperation efforts. Fig. 1 attempts to represent graphically this alignment process.

A key component of Fig. 1 is the relationship between employee behavior and organizational culture. This is an important aspect to develop because many executives still mistakenly set out to change their organization’s culture. In part, this approach is consistent with a lot of writings in the 1980s and early part of the 1990s, which advocated taking on first the norms, values and culture of the organization in order to make it more open to change. In his best selling “Leading Change” (1996) book, Kotter himself acknowledges having been mistaken on this front for many years.

The culture of an organization at time t influences the behavior of its members. In Fig. 1, this relationship is noted by the arrow flowing from right to left from culture to employee behavior. Schein (1985, p. 9) defines culture as “a pattern of shared basic assumptions that the group learned as it solved its problems (...), that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems”. In light with this definition, it is clear that people who have worked for General Electric over the last 20 years are likely to behave differently than individuals who have been working for a municipal government over the same period (I purposely choose extreme examples to illustrate the point).

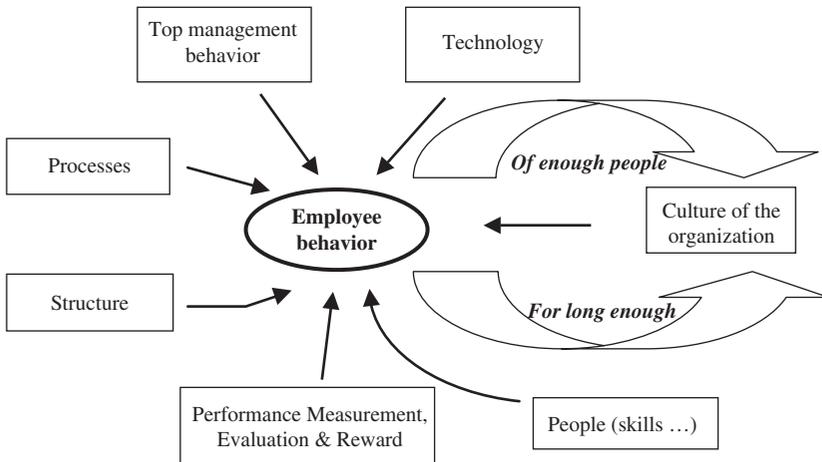


Fig. 1. Forces Shaping Employee Behavior.

Behavior can be changed reasonably rapidly by applying a strong and consistent set of forces on the organization's employees. These forces can be represented as Pascale and Athos's (1981) Seven Ss (Strategy, Structure, Systems, Skills, Staff, Style and Shared values), or through my own structure, systems, processes, technology, top management behavior and employee skills. All large-scale changes I have studied, read about or worked on featured *simultaneous and aligned* changes along most or all of these levers. How rapidly employee behavior changes depends on several endogenous and exogenous factors, including how large the required change is, how deeply anchored are the previous behaviors, how powerful and aligned are the applied forces, how many individuals need to be affected, how geographically dispersed these individuals are and how easy it is to monitor behavior and enforce the changes. But if sufficient determination and force guide the effort, the behavior of many members of the organization can be changed.

Changing the *culture* of the organization requires a lot more than modifying temporarily the behavior of some of its members. It requires re-shaping the behavior of *enough individuals, long enough* for them to internalize the new behavior. This process takes time, because these new signals will conflict with employee skills and habits learned over years, sometimes decades. Internalization also requires these new behaviors to be seen as providing benefits for the organization as well as its members. How much time is needed for this process to take place again depends on several factors, but in my view we always talk in years rather than months.

Managers should hence set out to re-shape employee behavior by modifying the signals sent by the various managerial levers at their disposal. This is of course a particularly difficult process for middle managers, as they often lack control over some influential levers such as structure and parts of the performance measurement, evaluation and reward system. As a result, many employees operate in an environment where they receive conflicting signals from their boss(es) and from various managerial levers, which obviously puts them in a stressful situation and hampers their efforts.

The Organization Manages Change Well

All organizations today face a very high pace of change, if only in a relative sense. (Some industries face less rapid change than others, but even those who are less exposed are still facing more change today than they did a few years ago.) In part because they are swamped, in part also because they

often fail to see the need to do so, too many managers spend a lot of time managing the *content* of change and not enough time managing the *process*. That is, they spend much more time designing a new activity-based costing system, developing strategy maps and balanced scorecards or deciding to deploy Six Sigma in their organization, than they spend thinking about how to increase the likelihood that the organization will welcome these new tools and will use them on a daily basis.

Chenhall and Euske (2005) present a good illustration of this problem. Two organizations (one American, one Australian) independently tried to implement activity-based costing in the mid-1990s. They tackled the change with a command-and-control approach that failed to secure widespread support within the organization. The same organizations independently tried again a few years later, this time with a more sophisticated management of the change process, and the implementations were both very successful. Same content, better process (and, granted, different timing), better result.

There are many models of change management. Kotter (1995, 1996) proposed an eight-step model that has become a classic. Jick (1993a, 1993b) had proposed “ten commandments”, while Price Waterhouse discussed 15 guiding principles and 11 pitfalls (Price Waterhouse Change Integration[®] Team, 1995). More recently, Huy (1999, 2001) concluded from his empirical analyses that different organizational and situational contexts required different approaches and proposed four archetypical styles. Similarly, Strebel (1998) proposes four types of change processes, the effectiveness of which depends on the organization’s readiness and ability to change.

I tend to approach managing the change process via nine questions, listed in the appendix. Using questions rather than steps allows me to highlight the contingency nature of the answers without having to refer to “styles”, unconvinced as I am that managers can easily shift between styles. I have seen managers allocate insufficient attention and/or provide inappropriate responses to any and all of these nine questions, but there are two questions that I would like to develop here. Question 1: Do enough people understand why we need to change now? – and question 3: What is the appealing vision we are selling?

When examining a new idea, project or initiative, the first obvious question to ask is: Is this a good idea, will it help us improve performance? But in a world where the demand for managerial (and employee) attention typically exceeds supply, new ideas, projects or initiatives must pass a more stringent test. They must not only be “good ideas”, they must also be better ideas than other ideas, projects and initiatives that are also demanding time

and attention. So the test to pass is more long the lines of: Is this the best use of our time?

Executives tend to under-estimate the need to make this case for change, to show employees that this idea/project/initiative is indeed very fundamental *now*. This is particularly true in organizations that are doing “relatively well” and where the case for change is hence not obvious at all for employees. Top managers’ job requires – and allows – them to spend much time looking outside the organization and ahead in time, which gives them an ability to identify future threats earlier than employees whose time horizon is shorter and preoccupations more immediate. Top managers must realize that threats that are very real to them are much more abstract to their staff. They must then make the time to communicate the need for change to their employees, which involves both a quantitative but also a qualitative investment. That is, top managers must spend time communicating, but this communication must be crafted in ways that speak to their employees.

Robert Ayling, CEO of British Airways between 1996 and 2000, provides a very good illustration of where leaders can go wrong. When he took over from his predecessor Colin Marshall, Ayling quickly diagnosed the threat posed by low-cost airlines, the emergence of airline alliances, continuing deregulation and BA’s relatively high-cost base. He launched a business-efficiency program, designed to save £1 billion for British Airways. This program was launched at a time where BA was the most profitable airline in the world and had been named Airline of the Year for eight years in a row. Unsurprisingly, BA staff balked at this austerity program and cabin crew went on a short strike during the summer of 1997. This strike, which was the first instance of labor unrest at BA in over 15 years, led to a public escalation of the conflict between Ayling and his staff, from which Ayling never fully recovered and which eventually led to his dismissal in 2000 (see Barsoux & Manzoni, 2002, for details on this case).

The most regrettable aspect of this example is that Bob Ayling *knew* he had to make the case for change, as reflected in an interview he gave in the summer of 1996:

Although I might see a change as necessary because I’ve analysed the figures and it’s my job to consider the long term, most people in most jobs in the company don’t think like that. They think about the day-to-day things – that’s as it should be – so it’s not at all obvious to them why the changes I think have to be made, have to be made.⁷

Knowing at an intellectual level that one must make the case for change is hence not enough. The case for change must be built – using data that employees can accept and organizing these data in a compelling “story”,

then communicated, i.e., repeated again and again, through various media and by several members of the top management team.

Bob Ayling also made a mistake regarding Question 3: What is the appealing vision we are selling? Dutta and Manzoni (1999) proposed a simple chart to compare change efforts across organizations. This chart, presented in Fig. 2, features four possible axes of emphasis: Efficiency/productivity (doing the same with less), growth (doing more), customers (as in “we need to delight our customers”) and staff (as in “we improve the working conditions of our staff”).

In almost all organizations I come in contact with, initiatives are under-way to work on all four axes. But in most organizations, the top left quadrant – customers and productivity – receives a disproportionately high percentage of managerial emphasis and communication. Unfortunately for him, Ayling’s Business Efficiency Program (BEP) was a good example of this situation. It emphasized the need to save money and (to a lesser degree) the need to delight customers. It did not, however, explain that part of the money was going to be re-deployed to re-position the airline’s image and pay for major investment in the “product”. Ayling’s BEP also failed to highlight the link between the cost savings and investment into a new head office building and a hotel for the staff, both of which would generate important benefits for the staff.

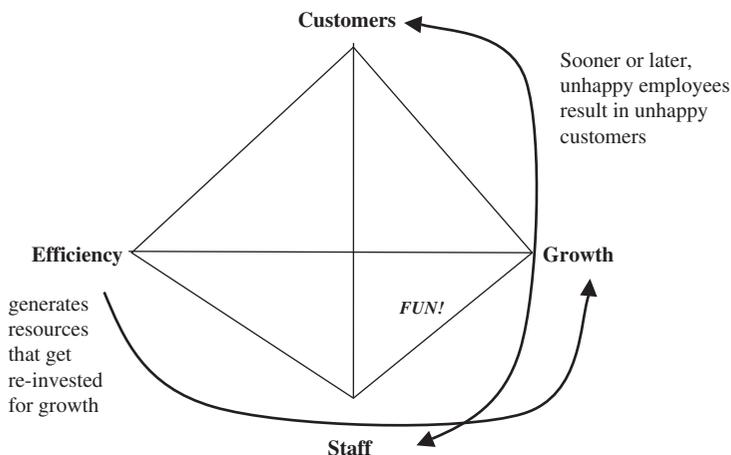


Fig. 2. A “Good Story-Line” Touches on all Four Axes. Note: The Four Quadrants are not Symmetric on Purpose, to Acknowledge the Fact that in Some Cases, the Short-Term Potential for “Pain” is not as High as the Need for “Pain”.

Ayling and British Airways had all the components but they did not have the story line linking all these components in an appealing way. In contrast the turnaround of Nissan, which featured a lot more pain than Ayling's plan, was much better accepted by Nissan employees, in part because the sacrifices imposed on workers were complemented by simultaneous investments perceived to be very likely to benefit rapidly both the organization and its employees. (The plan was also better accepted because Ghosn and his team invested massive time and energy building and communicating the case for change; see [Hughes, Barsoux, & Manzoni, 2003](#) for details.)

This is a real challenge for many western companies today, as they contract operations in high-cost countries and expand aggressively in Asia. Senior executives are very aware of the pain they are creating and they often struggle to position this pain in an energizing story line. There is clearly no magic to make this dilemma go away, but there are ways to deal with it so as to reduce frustration and stress. Research on "fair process" clearly suggests that when employees perceive the process to be fair, they are more willing to accept negative outcomes ([Folger & Cropanzano, 1998](#)).

It is also often possible to highlight more effectively the benefits of ongoing initiatives. For example, one of my clients is in the process of deploying Six Sigma. The initial positioning of the effort was: "Six Sigma is all about delivering more value to our clients". In addition to being a very partial perspective, this positioning was making Six Sigma a very difficult sell. Six Sigma (and other process improvement techniques) can also have massive benefits for employees by helping remove a lot of non value-adding work which creates frustration and stress for employees. Highlighting this aspect helps position the initiative in a more appealing light; it also helps management to keep in mind the two other axes (employees and growth) in [Fig. 1](#).

Most senior managers spend a lot of time working on the "what" of change. By the time they are reasonably clear on what needs to be done, they have become impatient to get it done and hence under-invest in managing the change process, often by over-relying on hierarchical power. This insufficient attention to managing the process saves them a little bit of time upfront but ends up costing a lot of time, energy, frustration and stress down the line.

Making Time for Value-Adding Activities

In my view, consistent with [Davenport and Beck's \(2001\)](#) emphasis on the importance of "attention", the biggest obstacle to change and performance

in today's organizations is the lack of employee and managerial bandwidth. Some organizations are clearly better than others at protecting their employees' bandwidth. The first three points discussed above are a big part of the equation, but it is also possible to work more directly on the issue and help employees make more time for value-adding activities. Here are a few avenues I have seen organizations pursue effectively:

Supporting Personal Discipline and Time Management

Managers have a finite amount of time and energy available for work. It is surprising to see how few of them have actually received training on how to make a better use of their and others' time. They can of course choose from a wide array of books touching on old subjects like priority, meeting and agenda management, to new ones like how to make the best use of technology without letting it run one's life and agenda (see, among others, [Allen, 2003](#); [Covey, 1990](#); or [Lencioni, 2004](#)). Some managers indeed read, but many don't have the bandwidth to do so!

Some organizations help their managers to improve on this front. Intel, for example, developed a program to help its employees use e-mail productively ([Overholt, 2001](#)). Individual senior executives also act in their own units: one executive recently explained to me that he got his entire management team trained in one approach which has become standard practice in his division, with his own assistant acting as "process owner" to make sure good habits get maintained. But too few of the organizations I work with are active on this front, and much management time and attention is needlessly wasted.

"Things work", Processes are under Control

Equipment, technology, systems and processes that work painlessly should be a given, but they are not. Many organizations waste much time and energy making up for things that should work but do not, and for activities that should be part of a process under control but are not. Increasing deployment of Enterprise Resource Planning Systems (and other forms of computerized activities) and of methodologies like Six Sigma/Lean Sigma are helping, but I still hear too many managers talking about time spent reconciling data, correcting errors or working around systems.

Addressing this issue requires, at a minimum, two necessary conditions. The first is a widespread "process orientation", i.e., a large proportion of the management and staff having internalized that most activities can be viewed as a process, and hence can be organized, managed and in many cases measured as such.

The second condition is sufficiently widespread acceptance of the fact that effective and efficient processes often require some degree of standardization and hence some sacrifice of local freedom. Let me share an amusing anecdote to illustrate this point: When I joined IMD, I was informed that we carried only two models of personal computers: Brand X, big model and small model. Having just bought a spectacular model from Brand Y I tried to negotiate an exception, to no avail. I hence got Brand X, big model. My frustration was very rapidly eliminated by the realization that this standardization allows our system to offer exceptional functionalities and reliability at a manageable cost. On a bigger scale, an organization like Cisco has been able to achieve extraordinary productivity via a fairly ruthless standardization and computerization of processes.

It is true that some organizations have invested enormous resources into trying to develop global systems and processes, only to achieve disappointing results. I am not necessarily advocating global processes. I am simply pointing out that organizations sometimes tolerate too much variety and, as a result, cannot manage effectively the resulting complexity.

Relentless Elimination of Non-Value-Adding Activities

Some proportion of the non-value-adding activities that managers and employees must work through result from the first two dimensions discussed above: Inappropriate management of time, meetings and technology, and equipment, technology, systems and processes that do not work as well as they should. Beyond these obvious sources, however, there are also many activities and processes that come from the past. They were perfectly appropriate responses to yesterday's customer needs, staff capabilities and/or available technology. The drive to eliminate such non-value-adding activities must be relentless because customer needs, staff capabilities and available technology tend to change faster than most organizations revise their processes and activities.

Individual efforts to tackle non-value-adding activities can be supported by organizational approaches that provide the organization (or large components thereof) with common methodologies and tools. Well-known examples of such programs include Six (and Lean) Sigma (see, for example, Pande, Neuman, & Cavanagh, 2000, 2002) and General Electric's "Work-Outs" (see, for example, Slater, 2000). One organization I know deployed a "Root Cause Eradication Program"; another created a team of 15 process and organizational consultants called "facilitators", who for two years worked through the various units of the corporation to help them improve effectiveness and efficiency; yet another organization appointed a "Director

of Speed”, with a specific mandate to coordinate and intensify the organization’s efforts to remove barriers and non-value-adding activities.

Relentless Maximizing of Return on Time Invested

When I ask executives where non-value adding activities come from, the number one response by far is: “From Head Office”. While this response always generates a good laugh and helps executives vent for a few seconds, I believe it is inaccurate. Most activities/programs/initiatives originating at Head Office could add some value. But again the test these activities have to pass is not “is it a good idea?”, but rather “is this the best use of our time?” On that front, in many cases the answer should be “no, not this way, not now”.

In particular, support functions are often criticized for generating too much “bureaucracy”. They indeed generate a lot of work for their line colleagues, and while most functional managers I know do not set out to create bureaucracy, they often end up doing so. The difficult part of “bureaucracy” is that it often starts with well-intentioned people doing exactly what we hired them for, but forgetting in the process that their job is a mean to an end, not an end in itself.

Most organizations I know would hence benefit from being significantly more selective in the initiatives they launch. They should also be more forceful regarding activities that can – and should be – stopped (the “Must Stop” activities which Killing et al. (2005) require executives to identify when they select a few key Must-Win Battles). Of course, agreeing on which activities maximize Return On Time Invested requires a shared understanding of the organization’s mission and strategy, which takes us back to the first point discussed above.

Decision-Processes Effective and Efficient

In principle, organizations are supposed to discuss, decide, then execute. Most organizations I know discuss, decide ... then they discuss some more, they decide (the same thing as the first time, or not), ... then they discuss again ... One of my clients used to say: “We can only start really discussing something *after* a decision has been made”. Another organization referred to “the right of infinite appeal”.

In some cases it is of course very beneficial to re-examine decisions that were made hastily or incorrectly. When such revisiting of past decisions becomes endemic, however, the organization becomes unable to follow-through on decisions, which delays execution and creates massive frustration. The process can also become self-fulfilling because it creates an

incentive not to engage in the process early on but rather wait and disrupt it later.

This chronic lack of follow-through can have multiple possible causes, including the following:

- Some individuals who believe they should be part of the decision-making process feel they were not sufficiently involved upfront. This insufficient involvement can have multiple roots, including
 - (i) Senior managers want to progress too fast and hence do not involve enough people (or “involve” them but do not listen to them).
 - (ii) In large, complex (e.g., matrix) organizations, it is not always easy to identify all the people who should be involved.
- The organization is unclear about which role various parties should play in the process: Who should have a say or a vote when making the decision, vs. consulted in the process, vs. asked for input, vs. simply informed of the decision. In the absence of clarity on the role of specific individuals, people who should only be informed may try to gain a larger influence on the decision.
- Some (too many?) members of the organization display insufficient respect for data and re-open questions that had been settled.
- Organizational life requires some individuals to accept that even though they made their case and their arguments were heard, the decision did not go their way. Some individuals as well as some management teams do not have this kind of individual and collective maturity. If they feel they can get away with re-visiting past decisions, they will.
- Last but not least, chronic second-guessing sometimes reflects a pervasive lack of confidence among the members of the organization. If, for example, an organization does not trust its experts (e.g., line managers do not trust functional specialists), it will tend to second-guess their decisions more often.

CONCLUDING THOUGHTS

These reflections lead me to two sets of concluding comments:

- (1) Regarding the question “Is the search for performance taking such a toll on managers that the process has become self-defeating?”, my current view is “often, but it need not be the case”. Some organizations are clearly doing a better job than others at creating performance in ways

that are less painful, and in some cases are exhilarating for their employees. I have proposed above four dimensions that I believe can contribute to the development of such environments, and a growing number of scholars are researching these environments to understand better how to create and sustain them.

I am also comforted by the fact that many organizations are actively trying to help decrease the toll the relentless search for performance takes on employees. They are creating programs to help employees diagnose and manage their physical, mental and emotional health and to maintain some “work-life balance”. They create support services to help employees deal with their family and operational needs (from day care to dry cleaning). They are increasingly allowing employees to work from home, thus giving them more flexibility and helping them avoid non-value-adding transportation time.

All these measures are of course enabling people to work more, and one could argue that these efforts are only postponing the moment where employees will break down. That is of course a danger, but I am not sure there is any choice. Most large organizations are involved in a race without a finish line, competing with other organizations that often rely on lower labor cost. As “low labor cost countries” continue to move into more complex manufacturing and into managerial and research and development activities, the search for performance will continue to intensify. The cost of labor in these countries will increase over time, but China and India have deep enough population pools for this rise not to be the solution for western organizations.

It is also a fact that many of us are looking at work as a source of fulfillment, perhaps more than previous generations did. This reality presents us with the challenge of managing what proportion of our energy to devote to work vs. other activities, but that is in a way an embarrassment of riches. When ex-General Electric employees still talk so positively about their experiences 10 years after having left the organization, it is hard to look at these environments only negatively.

One aspect ex-managers of companies like GE and Dell do mention is the intensity of these environments and the fact that as much as they enjoyed this energizing atmosphere, they also found it exhausting after a while. I wonder whether we will come to look at “work-life balance” less within time periods and more *across* time periods. For example, I see a few very successful executives create “sabbatical/recovery breaks” for themselves between major assignments. That model may develop over time.

One thing that is clear is the need for organizations to try to recruit individuals who fit well with the behavior and culture they are trying to create. Leading organizations like Google, Genentech, SAB Miller and Southwest are very clear on this need for fit and invest significant time and resources making sure they recruit individuals whose intellectual and emotional profile is more likely to help them be successful and happy in the organization.

(2) Secondly, I believe these reflections raise five sets of questions for Management Accounting and Control (MAC) researchers.

- How can our research and teaching activities take into account the low level of attention and bandwidth available to most managers? I have proposed some avenues to increase managerial bandwidth, but reality in most organizations today is one of low available attention and bandwidth. Should that have an influence on the tools and techniques we design and/or on the way we propose them to managers?
- The effectiveness of various MAC tools and techniques is very dependent on the way their introduction and deployment is being managed. There is a plethora of articles and books on managing change, but very little such work originates from the MAC area. Can MAC researchers draw more extensively from the change management literature? Can they *make* a contribution to that literature, e.g., by examining the specific hurdles and opportunities presented by the deployment of MAC tools and techniques?
- Is there a way for management accounting and control research to contribute to understand better the cost of stress and limited bandwidth in organizations? Can the usage, costs and benefits of “managerial attention and bandwidth” be measured? Can the way managers allocate their attention be linked with individual and organizational performance?
- Research in psychology and human resource management is giving an increasing amount of attention to constructs like “energy” and “vigor”. Measurement scales are appearing and seem to be linked with interesting individual and organizational outcomes. MAC researchers have long focused on job satisfaction as a key dependent variable. Job satisfaction is a tricky concept and has limited association with organizational outcomes. Could “energy” be a productive alternative dependent variable for MAC research studies?
- Last but not least, is there a role for management accounting and control researchers in emerging lines of research like Positive

Organizational Scholarship? Cameron et al. (2003a) signal the need to understand better “the attributes of the structures, processes, cultures ... and/or resources that are most conducive to, or resistant of, positive dynamics in organizations?” Management accounting and control researchers could be of help on this front. They could also help with another potentially major enabler, the organizations’ performance measurement, evaluation and reward systems, which Cameron et al. did not include in their list but should have.

Management accounting and control researchers could also be of significant help with some of the measurement challenges POS researchers are facing. For example, Luthans and Youssef (2004) posit three dimensions of human capital that can constitute a competitive advantage: Human capital (explicit and tacit knowledge) and social capital (networks, norms, values and trust), which have received some attention, and a third one they are introducing: positive social capital, “which involves measurable, developable psychological capabilities that can be readily enhanced and managed for performance”. MAC researchers do not have a competitive advantage in the measurement of the psychological attributes, but they are well placed to contribute to the measurement of their organizational and performance implications.

NOTES

1. *Business Week* examined “the real reasons why you’re working so hard ... and what you can do about it” in its October 3, 2005 edition, while *Fortune* magazine followed up with its December 5, 2005 story on “Get a life! The 24/7 grind hurts ...”.

2. The “Baromètre du stress *L’Usine nouvelle*-Stimulus”, “Baromètre Stress CFE-CGC”, and the second edition of “L’Observatoire du travail *L’Express*-Bernard Brunhes Consultants-BVA”.

3. Cover story of a major Swiss French-speaking weekly magazine, *L’Hebdo* (December 15, 2005).

4. This kind of feelings can even reach larger groups. Arguably, France is currently suffering from this kind of semi-depressive mood, as exemplified by the incredible success of a rather cynical book called “Bonjour Paresse” (“Hello laziness”, which sold over 200,000 copies in France in a few months), in which the author (Maier, 2005) encourages managers to adopt her strategy of “active disengagement” – calculated loafing – to escape the horrors of disinterested endeavor. On a more serious note, sociologist François Dupuy (2005) discusses “le Malaise des Cadres” (“Managers’ malaise”) and historian and economist Nicolas Baverez (2003) writes about La France qui tombe (France is falling).

5. The Center's web site (<http://www.bus.umich.edu/Positive>) contains several references to this emerging line of research. In particular, see Cameron, Dutton, and Quinn (2003b).
6. Special message to the Congress on Urgent National Needs, Delivered in person by President John F. Kennedy before a joint session of Congress, May 25, 1961. See <http://www.jfklibrary.org/index.htm>
7. *Director*, August 1996, p. 37.

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APPENDIX: NINE QUESTIONS TO GUIDE MANAGERIAL ATTENTION WHEN LEADING CHANGE

- (1) Do enough people understand why we need to change now?
- (2) Whose support do we need? How do we gain their support?
- (3) What is the appealing vision we are proposing?
- (4) What is the credible plan to get there?
- (5) How can we communicate more and more effectively?
- (6) What obstacles will we face? How will we remove them?
- (7) Where are the quick wins? How will we achieve (and communicate) them?
- (8) When momentum slows down, how will we re-energize the effort?
- (9) How will we institutionalize the change?

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**PART II:
THE IMPACT OF ORGANIZATIONS
ON INTERNAL AND EXTERNAL
STAKEHOLDERS**

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A PERFORMANCE MEASUREMENT SYSTEM FOR SUSTAINABILITY

Massimiliano Bonacchi and Leonardo Rinaldi

ABSTRACT

The most advanced organizations recognize that a multidimensional perspective is necessary to integrate stakeholder needs into a long-term value creation process, but only in a few cases are performance measurement systems able to integrate traditional measures with social and environmental indicators. To quantify sustainability, and to understand the factors that contribute to it, we propose a performance measurement system based on a set of indicators that are structured in two levels: primary and secondary measures. These measures are further organized using two managerial instruments, showing the horizontal (DartBoard) and vertical (Clover) relationships between them.

1. INTRODUCTION

It is clear that traditional models used to promote economic growth and development no longer meet the requirements of the world in which we live. News outlets ever more frequently report on the negative impact that industry has on human health, on the ecosystem, and on future generations. We are forced to investigate new standards by which industry must operate. Instead of assuming a “predatory” stance, designed only to consume utility

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(Mokhiber & Weissman, 1999), industry should adopt a more respectful and responsible behaviour, one that could restore well-being to the environment and to social communities it affects.

While this idea seems instinctively preferable, there exists today an animated debate on the fundamental aims that industry should work towards. On one side, there are the defenders of a purely economic vision, who assert that the only way for industry to effectively contribute to well-being is to maximize profits (Friedman, 1962, 1970; Hoffman, 2002; Jensen, 2001; Khanna & Anton, 2002). On the other side, there are defenders of a more social agenda, who sustain that economic initiatives and productivity can only be measured by the extent to which they improve, in a broader sense, the quality of life (Lorraine, Collison, & Power, 2004; Drucker, 1984; Rubenstein, 1993; Kelly, Kocourek, McGaw, & Samuelson, 2005).

Current literature about sustainable development asserts that the only way for companies to guarantee themselves a place in the future is to adopt a business approach that equally favours profit, the environment, and the community (Bansal, 2005; Clayton & Radcliffe, 1997; Laszlo, 2003; Willard, 2002). Such propositions are further supported by empirical analyses that have demonstrated a positive correlation between multidimensional management and stock values (Margolis & Walsh, 2003).

In Italy, the Public Utilities (PU) offer an example of industry working towards sustainability. These companies are in a unique position, since they are monitored by regulation authorities, their controlling groups are usually national or local Governments, and some of the bigger companies are listed on the stock exchange (Civicum, 2005). While the stock negotiation protects the economic dimension, the institutional function of the Government and regulation authorities protects the social and environmental dimensions.

However, translating the concept of sustainability into daily operations is not easy. Management must be able to offer opportune strategies to its shareholders who require a sustainable model. At the same time, it is necessary to provide adequate planning and control systems in order to support management in implementing those strategies.

Our paper offers a multidimensional and multilevel framework to quantify sustainability, and to understand the factors that contribute to it. The paper is organized as follows: Section 2 provides a discussion of the importance of sustainability in managing companies; Section 3 proposes the framework for planning and control of sustainability. This section, which is the essence of our work, explores both the logical issues that lie behind the framework, and presents two managerial instruments with which the framework becomes operational; Section 4 offers an application of the model that can be

implemented by PU; finally, Section 5 identifies limitations and provides suggestions for further research.

2. A BUSINESS APPROACH FOR SUSTAINABLE DEVELOPMENT

The concept of sustainable development was born from the realization that the existing growth paradigms were incapable of meeting the constantly changing needs of modern culture. An important phase of its evolution came towards the end of the 1980s, when the idea emerged that economic growth could not be considered as the whole of its aspects as related to the macro-system, without also taking into consideration the well-being of the individuals who operate within the system.

In following years many more definitions were given for sustainable development, in order to satisfy the need for a more scientific structure to the concept. All of them offered a clearly political and social commentary on reality, with suggestions on how to confront it. In 1987, the *World Commission on Environment and Development* (WCED), seated at the United Nations, and presided over by the Norwegian Prime Minister Gro Harlem Brundtland, offered the definition for sustainable development that would become the most widely accepted as: “*development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations*” (WCED, 1987, p. 8). Following this definition, the term “development” was no longer linked solely to economic growth, but to the concept of quality of life. Development, then, was to be recognized as multidisciplinary, made up of economic, cultural, social, and environmental factors (Fletcher, 2002).

Even though the attempts to formalize the concept of sustainability were numerous, the principal problem with its meaning was of a macroeconomic nature. No definition was given that offered guidance to a company that was willing to translate the concept of sustainable development into daily business practice.

The United Nations Conference on Trade and Development (UNCTAD), the World Business Council on Sustainable Development (WBCSD), and the Dow Jones Sustainability Group Index (DJSGI), all made useful contributions to understanding the pillars of sustainable development in terms of industry economics. They identified the three principal components: environmental integrity, social equality, and economic prosperity (Elkington, 2000). Each of the three parts represents a necessary prerequisite

for sustainable development, which can only be achieved when all three conditions are met simultaneously (Bansal, 2005; Smith, 2003).

So, the concept of performance is evolving (Fig. 1). If we accept the idea that development is not sustainable if any one of the three principles is not adhered to, then we see that traditional performance measurement systems based on shareholder value are inadequate for sustainability management.

In order to understand how these suggestions were received, it is sufficient to observe the reality of industry today, as well as the numerous academic publications on the subject of sustainability measurement (Atkinson, 2000; Bebbington & Gray, 2001; Bell & Morse, 2003; Bieker, Dyllick, Gminder, & Hockerts, 2001; De Haas & Kleingeld, 1999; Epstein & Roy, 2001, 2003; Epstein & Wisner, 2001a, 2001b; Figge, Hahn, Shaltegger, & Wagner, 2002). Indeed, sustainability reporting has become a high-profile issue, increasingly requested by stakeholders and required by governments (Terzani, 2002; KPMG, 2005; Sustainability, Standard & Poor's and UNEP, 2004). We can observe a growing number of standardization initiatives, such as the ISO 14031 guidelines on environmental performance evaluation (ISO 14031, 1999), and the Global Reporting Initiative template for sustainability

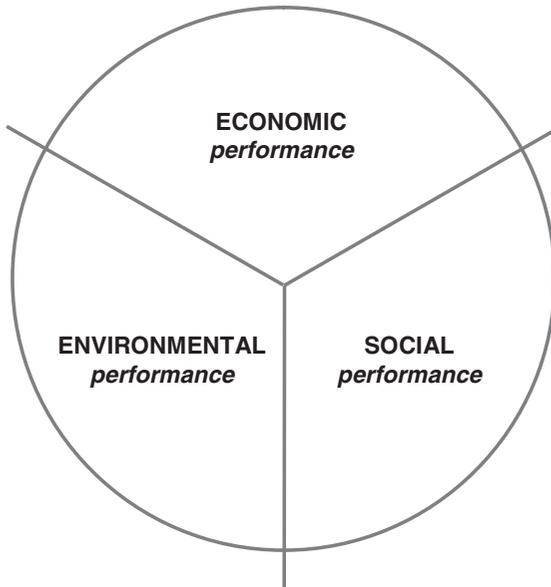


Fig. 1. The New Dimensions of Performance.

reporting (Global Reporting Initiative, 2002), designed to make it easier for more companies to take action, and for stakeholders to compare their progress.

Companies are also finding that they need better environmental and social performance data for effective management control. In fact, some of the most evolved companies agree that a multidimensional perspective is necessary to integrate stakeholder needs into a long-term value creation process (Freeman, 1984), but in only a few cases do performance measurement systems allow for the integration of traditional measures with social and environmental indicators. In other words, we are faced with a paradox: in front of a growing request for sustainability, an increasing number of companies are currently communicating sustainability performances, but only very few of them are taking steps towards managing sustainability (i.e. ABB, Enel, ST-Microelectronics, Telecomitalia).

3. A MULTIDIMENSIONAL AND MULTILEVEL FRAMEWORK FOR PLANNING AND CONTROL OF SUSTAINABILITY

A planning and control system is essential for the diffusion of the principles of sustainability. The majority of such systems do not seem to have fully embraced the philosophy of sustainable development. Some of them, like Balanced Scorecard (Kaplan & Norton, 1992, 1993, 1996, 2004; Zingales, O'Rourke, & Orssatto, 2002), are limited by measurement systems that were developed to gauge economic performance, and are not equipped to measure social and environmental performance. Other frameworks, such as the Drivers of Sustainability (Epstein & Roy, 2001), while accepting the importance of social and environmental aspects of performance, consider them only as drivers of financial performance.

In order to internalize the concept of sustainability, it is not enough to simply accept the original three-dimensional model. Instead, we must recognize that the relationships between the dimensions cannot be imposed in a hierarchical manner, but they must be developed following the concept of utilitarianism, in which the pursuit of satisfaction for everyone is the primary goal. In this light, development will be sustainable only if improvement in any one dimension does not lead to diminished performance in either of the other two.

On the basis of these convictions, we propose a model for planning and control that allows us to measure the degree of sustainability achieved. We

do not intend for this model to replace existing managerial instruments. Instead, it could represent an evolution in current practice, given the necessity to adapt to a more complex business management style, as a result of the multidimensionality of the approach. In fact, performance measurement systems have to be modified as circumstances change (Kennerley & Neelly, 2002).

The framework for our model is constructed in three phases (Fig. 2):

1. *Input identification*, in which the fundamental aims of the organization are defined, the paths that lead to their fulfilment are identified, and specific actions to obtain tangible results are determined.
2. *Identification of objects to be measured*, in which the levels to measure performance are defined coherently with the corresponding input.
3. *Output identification*, in which the instruments are predisposed to measure each identified object, to appreciate effectiveness and efficiency reached.

A planning and control framework built in this way can facilitate the work of management in the pursuit of sustainability, offering support in the critical moments of *feedforward*, *current*, and *feedback* control (Terzani, 1999). In particular:

1. in the *feedforward* control, the system must be capable of providing a preliminary assessment of the extent to which the intended strategic options will contribute to sustainability;
2. in the *current* control, the model has to verify that the actions necessary to reach sustainability have been taken;
3. in the *feedback* control, the system must verify that the hypotheses put forth for the relationship between actions and strategies are true.

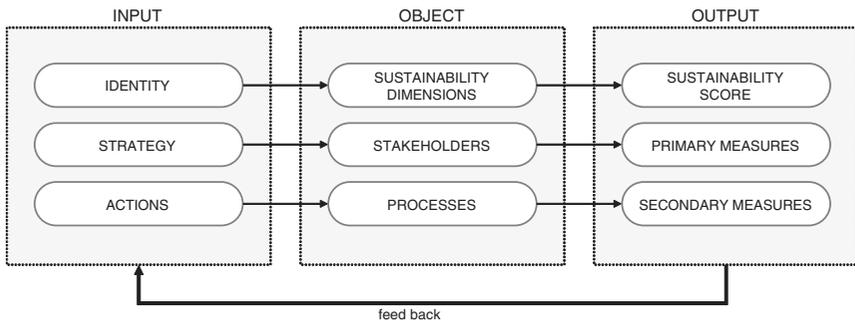


Fig. 2. Planning and Control Framework for Sustainability.

3.1. Input Identification

The starting point of strategy formulation for sustainability consists of the formalization of a clear *business identity* (Global Reporting Initiative, 2002; Kaplan & Norton, 2004) that can be defined as a combination of

1. *mission* that identifies the role of the business and the reason for which it exists;
2. *values* that are the ideals and goals of the company, shared by its employees and partners;
3. *vision* that has to put forth the goals that the company would like to reach and the position in the competitive environment in a medium-long period. This is the link between mission stability and dynamic operational strategy; its role can be seen as the technical and organizational input for operation;
4. *code of business conduct* that has to translate the value system into operational guidelines. It represents the formal codification of member attitudes to reach the company's vision (i.e. the ethical code) (Trevino & Nelson, 2003; Paine, 1994).

Although the definition of business identity is a necessary starting point, it is not sufficient to move towards sustainability. For this reason, a clear *strategy* must be formulated and management has to combine a right mix of internal and external resources. Sustainability, in fact, requires the translation of strategy into *action* by defining the steps that must be taken to reach strategic objectives.

3.2. Identification of Objects to be Measured

In order to effectively evaluate the business performances, each decision-making input must be linked to a measurable object, in particular (Fig. 3):

1. at the corporate identity level, it is necessary to monitor the simultaneous evolution of the economic, environmental, and social dimensions;
2. at the strategy level, it is necessary to measure the degree of satisfaction of the stakeholders in all three dimensions, since strategies are implemented in an effort to increase their satisfaction;
3. at the action level, the focus must be on the internal processes aimed towards translating actions into operating activities.

At this point it is important to highlight that the objects to be measured are logically connected. In fact, each *dimension* is an aspect of

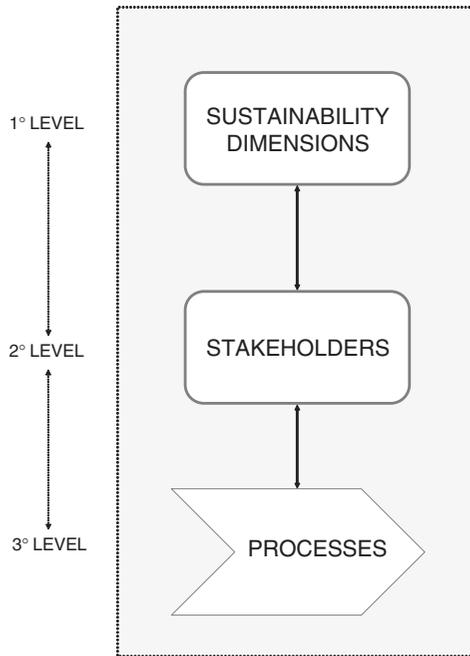


Fig. 3. Multilevel Relation between Object to be Measured.

performance, which can be appreciated only through observation of *stakeholder* instances, whose satisfaction depends on effectiveness and efficiency of *processes*.

3.3. Output Identification

After identification of both the input and the objects to be measured, to complete the framework we need to develop a system of measurement that will be able to guide managers in their short-, medium-, and long-term decisions. This system must be able to summarize the level of sustainability and to highlight its drivers. For this reason, it is necessary that the control system be articulated on a multilevel basis. In particular, the levels to consider are three: sustainability dimensions, stakeholder satisfaction, and process development.

The first level of the measurement system is constituted by a *Sustainability Score* that shows the results achieved (or achievable) in all three dimensions at the same time.

Then, in order to understand the drivers of the three dimensions, it is necessary to move the analysis to the second level, in which the parameters for stakeholder satisfaction are identified. To get this result, we have to build a set of *primary measures* (lag indicators), having a financial or non-financial nature, able to give feedback information about the effectiveness and the efficiency in which strategies have been realized. These measures are characterized as being connected through a logical relationship to stakeholder satisfaction (Nørreklit, 2000).

To complete the breakdown of sustainability performance drivers, it is now necessary to analyse the third level. In particular, it is necessary to work out a system of *secondary measures* (lead indicators) focusing on those processes that are being carried out and should lead to stakeholder satisfaction. They are characterized as being feedforward measures, able to explain why primary measures are achieved or not (Newman, 1975). These indicators are directly linked to processes and for this reason tend to be company specific, reflecting the uniqueness of business strategy (Fig. 4). The secondary measures differ from the primary ones in the kind of relationship they have with stakeholder satisfaction. On one hand, there are logical relationships between stakeholder satisfaction and primary measures. On the other hand, there are

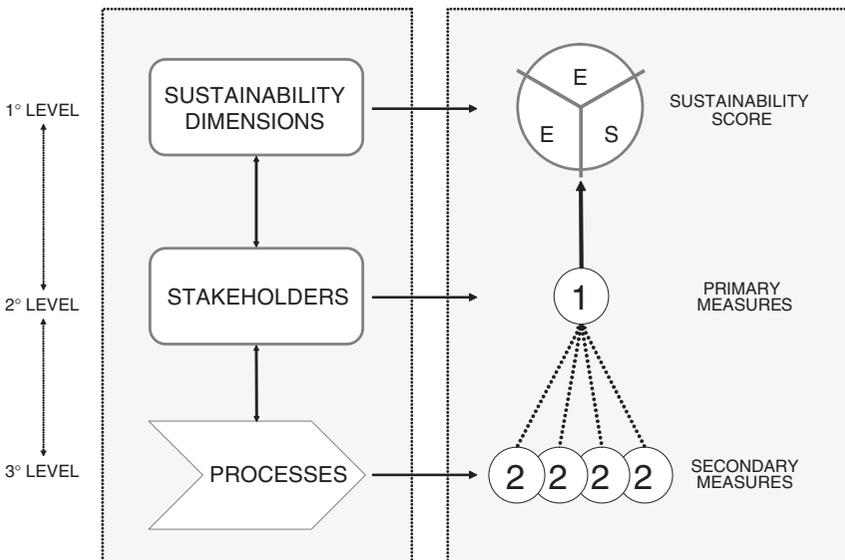


Fig. 4. Relationship between Objects to be Measured and Connected Output.

usually etiological (cause-and-effect) relationships between primary measures and secondary measures, based on assumptions that have to be tested by the performance measurement system (Epstein & Manzoni, 1998).

At the top management level, the primary measures help to evaluate the degree of stakeholder satisfaction; at the middle management level, the secondary measures show the results of the processes, evaluating whether they are operating as intended (Atkinson, Waterhouse, & Wells, 1997).

3.4. *Horizontal and Vertical Development*

To quantify sustainability, and to understand the factors that contribute to it, we propose a performance measurement system that includes two managerial instruments:

- *DartBoard of sustainability*.¹
- *Clover of sustainability*.

DartBoard (Fig. 5) offers a detailed measurement of sustainability. In fact, it lets us appreciate the *horizontal* relations between the three dimensions of performance, allowing managers to weigh trade-offs related to each strategic option. Without integration of the dimensions, a complete appraisal of the mutual influences that tie the several perspectives together is impossible. Such a situation could easily induce management to choose non-sustainable strategies.

Technically, *DartBoard* is a geometrical space divided into three equivalent areas, respectively dedicated to the economic, environmental, and social dimensions. In order to appreciate the company's capacity to perform in every dimension, *DartBoard* splits every area into sections, each of which represents a particular stakeholder. Since stakeholder satisfaction is defined by the primary measures, it is sufficient to monitor the fluctuation in any of them, in order to appreciate the degree of relative stakeholder satisfaction. For this purpose, *DartBoard* provides a graduated straight line for each primary measure, reporting the following kinds of normalized values:²

1. The *minimum value*, which reflects the minimum results as defined by the corporate identity and obligations placed on the company by law. It represents the "boundary system" (Simons, 1994). All minimum values, taken together, give us the *minimum sustainability score*.
2. The *planned value*, which represents the results to be expected, based on specific strategies taken. All planned values, taken together, give us the *planned sustainability score*.

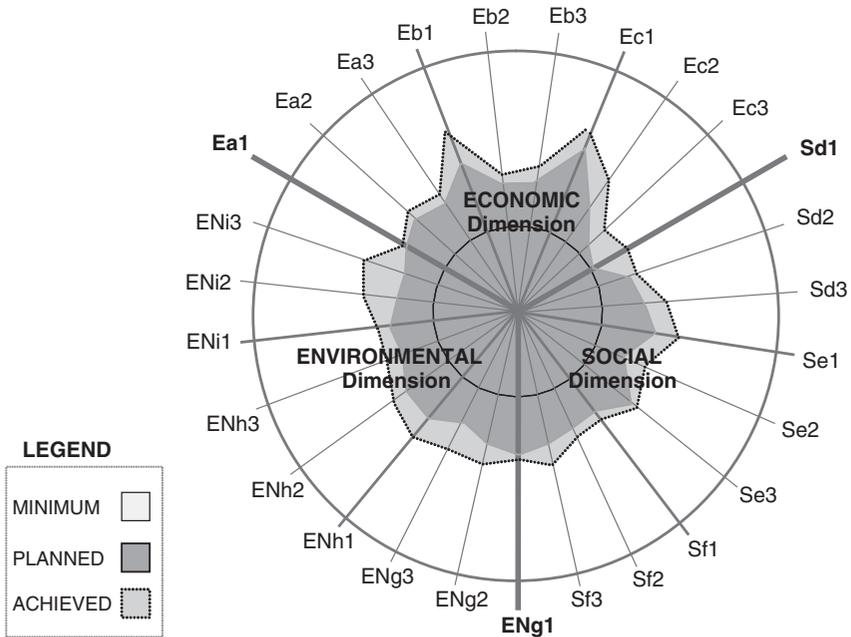


Fig. 5. DartBoard of Sustainability.

3. The *achieved value*, which reflects the actual results achieved in the period surveyed. All achieved values, taken together, give us the *achieved sustainability score*.

In Fig. 5, the sustainability score is not given as a single value. Instead, it is a combination of different types of indicators that can only be appreciated visually.

Using this system of scoring, DartBoard allows managers to evaluate sustainability both in an *absolute* and a *relative* sense. The former is represented by the minimum sustainability score, the latter is a comparison between:

- a. the planned and achieved sustainability scores;
- b. results of past and present periods surveyed.

a. The Planned and Achieved Sustainability Scores

Through the comparison of the achieved sustainability score to the other sustainability scores (minimum and planned), some extreme situations, requiring particular attention from management during strategic formulation,

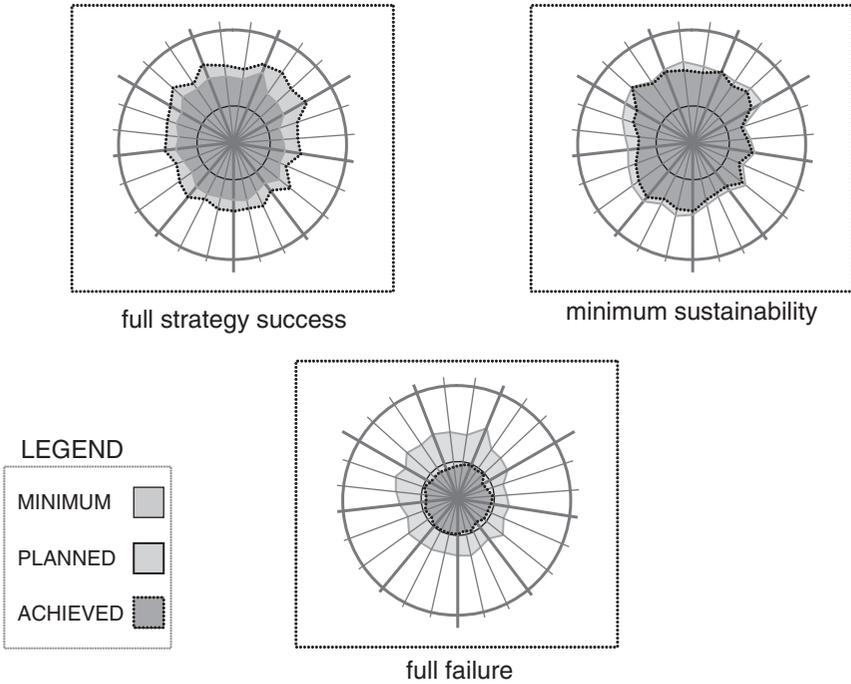


Fig. 6. Interpretation of DartBoard.

can be identified in the following combinations (Fig. 6):

1. *Full strategy success*: in which the achieved sustainability score reaches or exceeds the planned sustainability score.
2. *Attainment of minimum sustainability*: while still higher than the minimum sustainability score, the achieved sustainability score does not reach the planned sustainability score.
3. *Full failure of sustainability*: in which the achieved sustainability score is below the minimum sustainability score.

b. Results of Past and Present Periods Surveyed

Particular attention has to be paid to the comparison between results referring to time series data. For instance, two typical situations are (Fig. 7):

- *partial loss*: in which we observe a decline in at least one dimension while the others remain the same (a dimension declines when at least one of its primary measure values decreases);

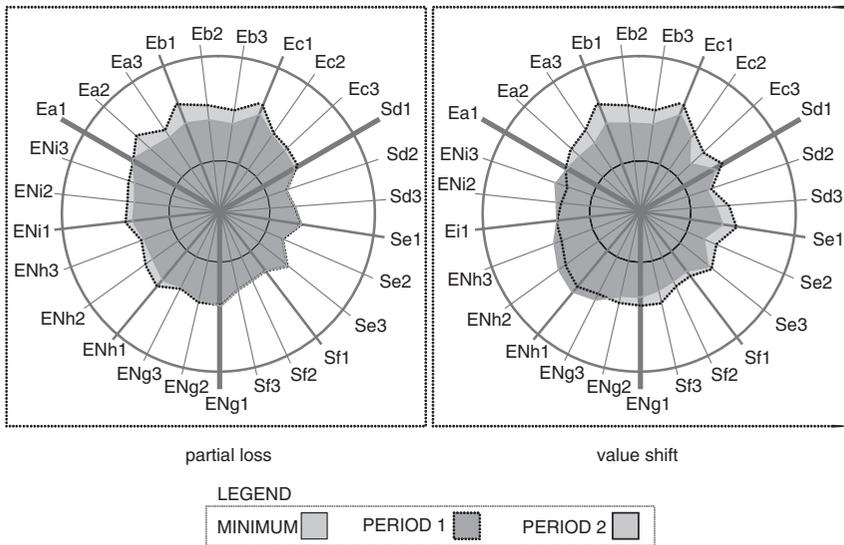


Fig. 7. Comparison of Results through DartBoard.

- *value shift*: in which the results show improvements in some dimensions, and decline in others.

Among the described extreme cases numerous intermediate combinations can also be observed. Judgment on these possible outcomes can be expressed only by managers, who will have to consider the internal and external factors in which results have been achieved.

Although the comparison is essential in the control process, it represents only a starting point for deeper analysis. As such, the model we propose is able to analyse the sustainability drivers through a two-step process. The first step, using DartBoard, highlights the dimensions with an increasing or decreasing performance due to a gain or a loss in stakeholder satisfaction. The second step, through Clover, allows managers to identify the direct and indirect causes of stakeholder satisfaction or dissatisfaction.

Clover (Fig. 8), in fact, lets us understand the connections between processes, stakeholder satisfaction, and each single dimension that encompasses them, through a vertical and diagonal development between primary and secondary measures. *Vertical* development involves both the identification of a logical relationship between stakeholder satisfaction and primary measures, and the evaluation of the cause-and-effect relationships between primary measures and secondary measures. *Diagonal* development, instead,

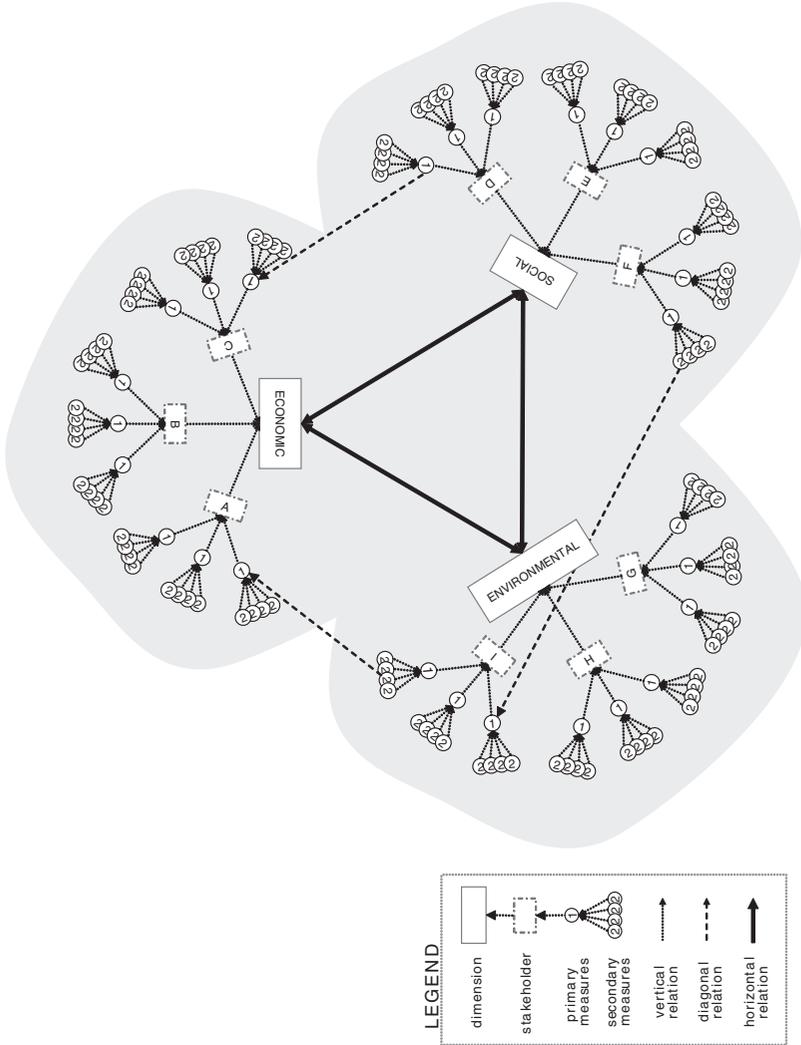


Fig. 8. Clover of Sustainability.

involves the secondary measures that, while connected by a vertical relationship to stakeholder satisfaction, could also affect the satisfaction of other stakeholders.

In addition, it is necessary to notice that some primary measures logically connected with a given stakeholder can, at the same time, be linked by a cause-and-effect relationship to the satisfaction of other stakeholders, becoming a sort of secondary measure. In this case, the model will show a diagonal relationship between two primary measures.

DartBoard and Clover appear in this context more than ever complementary, and have in the primary measures the element that links them. These measures, in fact, are connected logically to stakeholder satisfaction (the base of DartBoard), and at the same time, they are the results of what has happened at the process level (quantified in the Clover by secondary measures) (Fig. 9).

3.5. Planning and Control Process for Sustainability

DartBoard and Clover alone are not sufficient to move companies towards sustainability. Rather, they have to be part of a three-phase process that allows for the spread of sustainability into day-to-day operational decisions.

The first phase consists of building a sustainability unit inside the planning and control function that must coordinate the entire process, whose main task is to ensure coherency between the sustainability principles and the strategies by:

- a. evaluating the impact on corporate sustainability of each significant investment;
- b. reporting sustainability data to top management.

The second phase involves identifying measures, and begins when managers define the guidelines for strategic options to pursue critical success factors, and the strategic objectives for each business unit. These guidelines are formalized inside the industrial plan and quantified both in DartBoard and Clover.

For identifying measures, it is necessary to distinguish between:

- *Primary measures*: established, with a top-down approach, on the basis of industrial plans, stakeholder needs, sustainability ratings requirements (i.e. SAM, EIRIS, SiRi), sustainability reporting guidelines (i.e. GRI), and successful practices of other companies.
- *Secondary measures*: defined from each organizational unit with a bottom-up approach during the process of translating guidelines into measures.

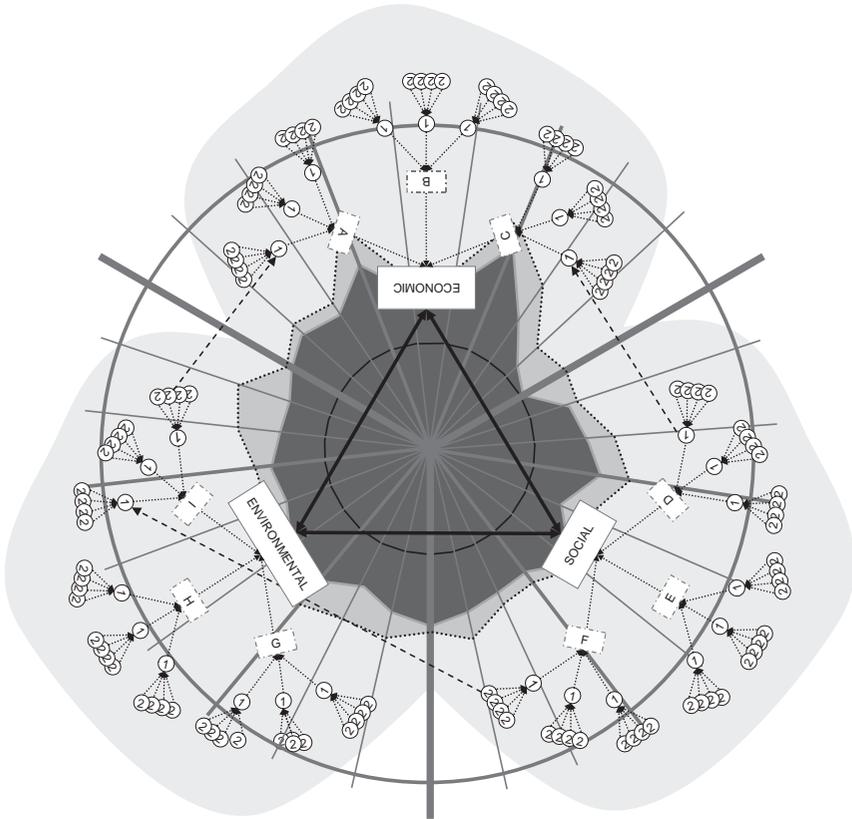


Fig. 9. Complementary Characteristics of DartBoard and Clover.

For each pursued strategic option, a target chart must be defined in order to highlight (Fig. 10):

- strategic objectives;
- primary measures and their targets;
- secondary measures and their targets;
- action plans;
- budget.

Finally, the third phase, consists of implementing a business intelligence platform that would gather the numerous and heterogeneous (qualitative and quantitative) data in one place.

STRATEGIC OPTION:						
STRATEGIC OBJECTIVES	PRIMARY MEASURES	TARGET	SECONDARY MEASURES	TARGET	ACTION PLANS	BUDGET

Fig. 10. Target Chart.

4. THE PUBLIC UTILITIES’ BUSINESS CASE

After building the theoretical framework, we offer an empirical exploration of the case of PU. This industry, in fact, is characterized by a large number of powerful stakeholders capable of affecting strategic choices (Andrews & Slater, 2002). With reference to the strategic options that today seem to be on the agenda of many of the PU, we suggest an application of the proposed performance measurement system that can characterize the control system of these companies. In order to do this, we must first follow a process consisting of three distinct phases:

1. *Map* all different groups of stakeholders, showing the needs that each of them expect to have met, and assign them to the right dimensions (Neelly, Adams, & Kennerley, 2002).
2. *Formalize* the strategic options identified by senior management to achieve strategic goals.
3. *Build* a set of measures capable of representing the degree of stakeholder satisfaction.

In the case of PU, the above-mentioned phases are developed as follows:

1. The performance of the PU is influenced by a number of stakeholders, each with equal importance, including: regulation authorities, community, customers, employees, future generations, investors (shareholders and lenders), and local governments.
2. The main strategic options are tied to enlargement of the client base, to the research of synergy between the various businesses, to alliances and aggregations, to the protection of the integrity of the natural environment, and to social acceptance (AGICI, 2005).
3. In the end, primary and secondary measures will be associated to each involved stakeholder, in order to evaluate the degree of satisfaction reached within the initial objectives imposed by senior management. On

the basis of this information, it is possible to design the framework, and to highlight the system of horizontal, vertical, and diagonal relationships between measures.

We now have the necessary elements to construct Clover, because it is possible to separate and place the needs of the stakeholders according to the various strategic options available to fulfil those needs, and build the measurement system.

We proceed by analysing, in alphabetical order, each dimension. Since the structure of the primary and secondary measures is strictly connected to the strategic options, we cannot yet complete the set of measures shown in Figs. 11–15.

In the economic dimension we can find at least two stakeholders: shareholders and lenders. Their needs are most clearly linked to value creation. As we already know, growth and efficiency are the two principles behind promoting value creation (Fig. 11). In the context of PU, growth can be stimulated by exploring new revenue streams or by increasing sales to

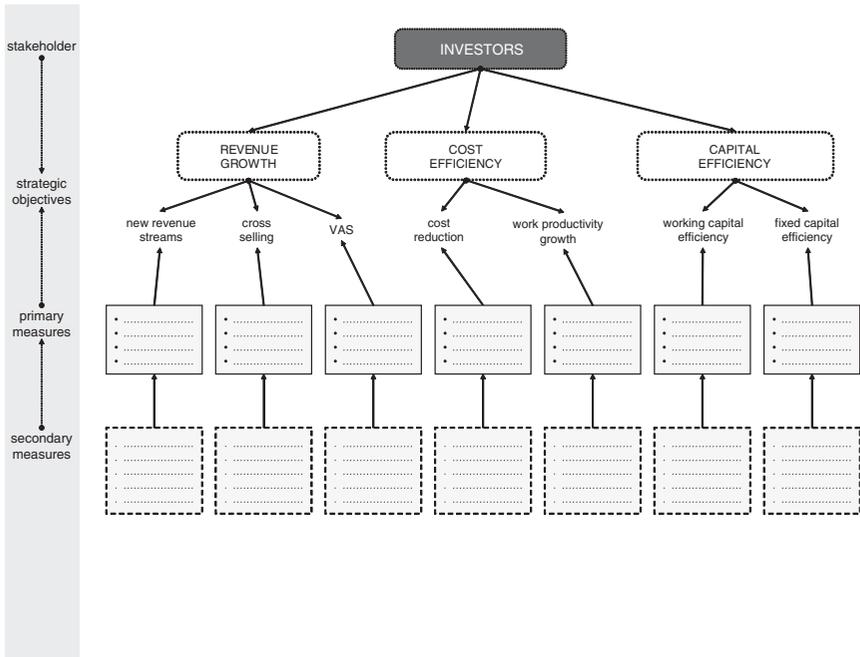


Fig. 11. Measurement of “Investors” Satisfaction.

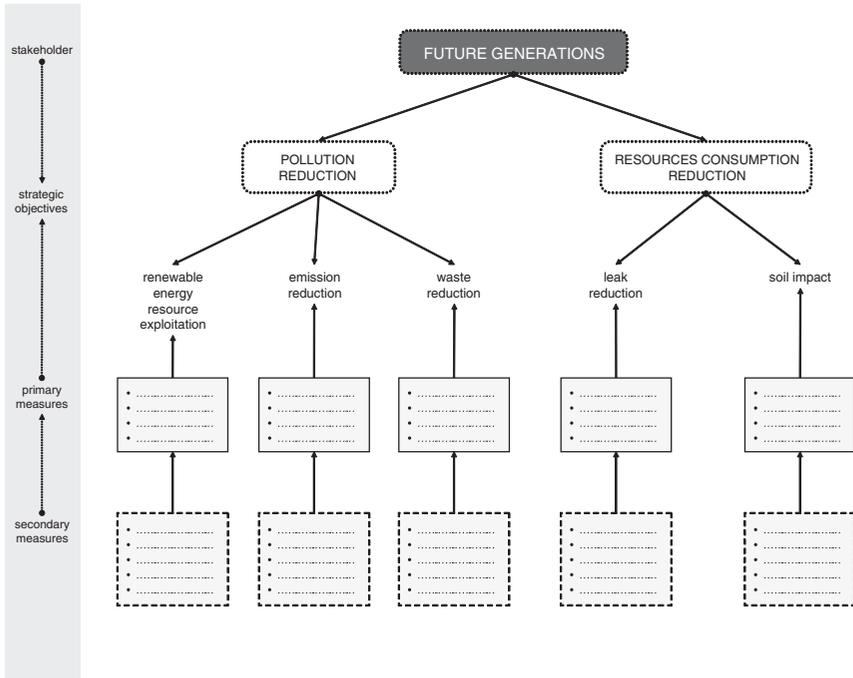


Fig. 12. Measurement of “Future Generations” Satisfaction.

existing customers. Higher efficiency can be achieved through an increase in asset utilization and a reduction of costs.

Moving to the environmental dimension, the most important stakeholders are those that represent future generations. In fact, every business initiative brings with it consumption of materials and energy, producing a cost, that can be quantified as (Fig. 12):

- *consumption of natural resources;*
- *pollution*, determined by the production of waste, emissions, and their effects on the environment.

Finally, in the social dimension we can find at least four stakeholders: customers, community, employees, and regulation authorities. For the customer category, it is necessary to formulate strategic options that would improve quality, reduce prices, and shorten response time, in order to satisfy their needs (Fig. 13).

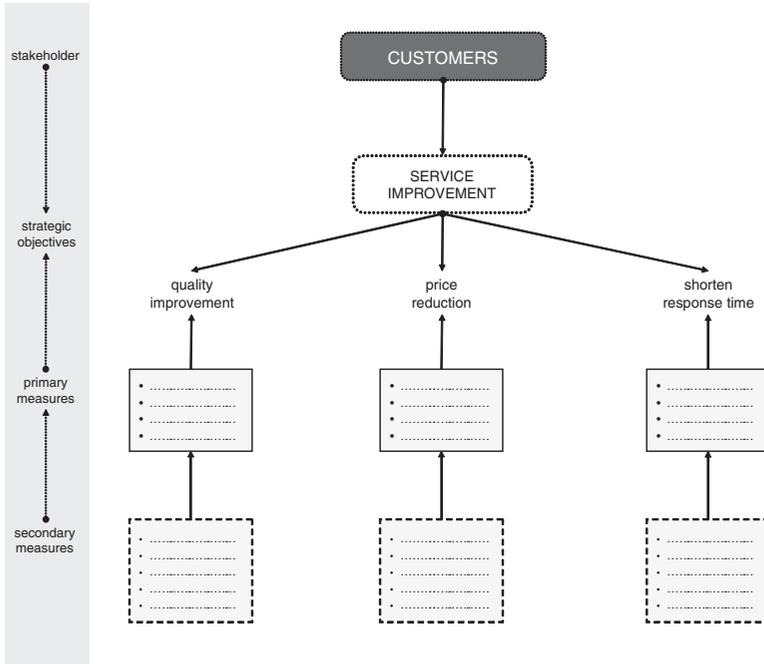


Fig. 13. Measurement of “Customers” Satisfaction.

The other two categories included in the social dimension are community and employees (Figs. 14 and 15). For these stakeholders, needs can be summarized as:

- *Community*, which looks for an increase in the quality of life of any singular member (i.e. promotion of cultural activities and support for local initiatives).
- *Employees*, who aim to obtain a safer workplace and room for growth in the company.

The PU industry is monitored by local and national regulation authorities, and often local governments represent a large portion of the shareholders. Although these are two important stakeholders, it would be redundant to create a set of measures expressly for them. Their satisfaction is determined by the level of satisfaction demonstrated in the customer and social-environmental categories.

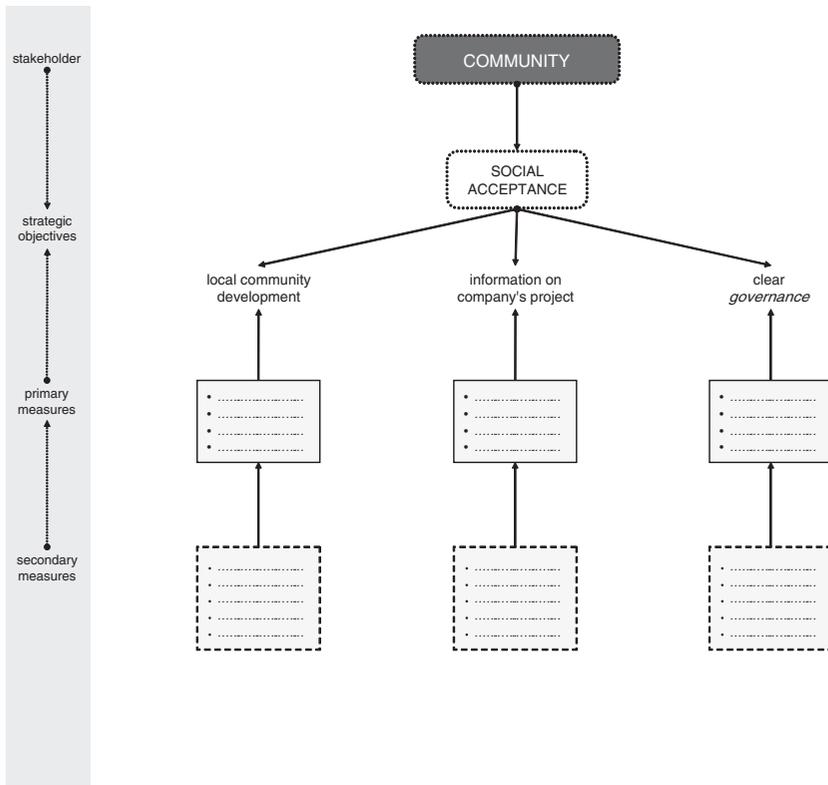


Fig. 14. Measurement of “Community” Satisfaction.

As discussed earlier, it is impossible to complete the Figs. 11–15, because the determination of strategic options has not yet been made. To Clover fulfilment let us imagine, for example, that top management decides to follow the strategic option of “*production of energy from renewable resources*” in order to satisfy the spectrum of its stakeholders. Such a decision implicates a deliberate choice made from a vast array of strategic objectives that, based on the breakdown into dimensions, can be exemplified as follows.

Economic dimension

- *Cost reduction* in energy production, tied to obtainable savings from the progressive elimination of fossil fuel.

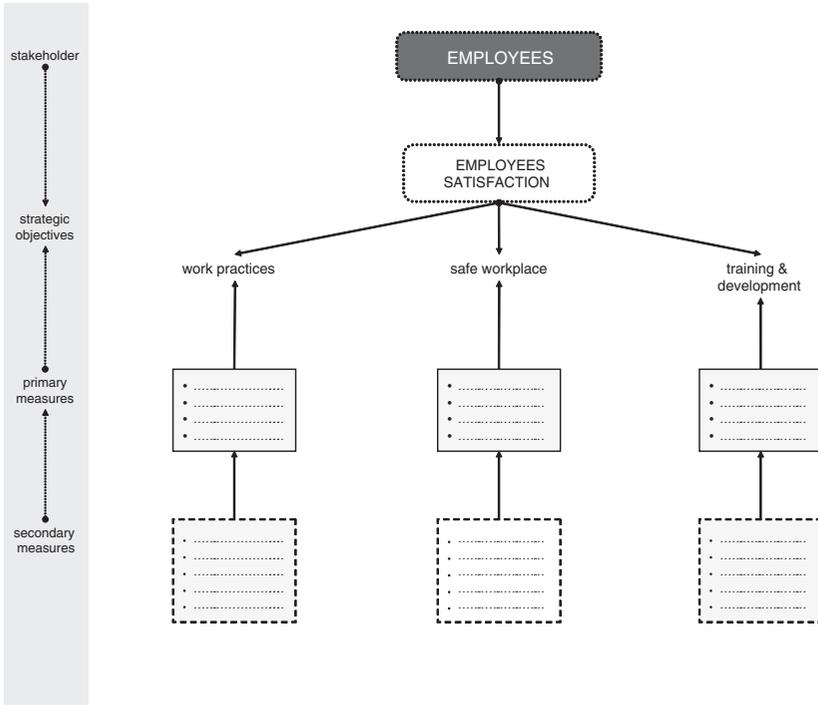


Fig. 15. Measurement of “Employees” Satisfaction.

- *New revenue streams*, that can assume the form of green certificates or by capturing market shares to ecologically sensitive customers (i.e. Acqua Lete and ENEL).

Environmental dimension

- *Emission reduction*, through elimination of toxic emissions tied to the production of electricity from fossil fuel.

Social dimension

- *Product quality improvement* for those customers who distinguish themselves as defenders of the environment.
- *Safer workplace* through reduction of risks associated with the organization of safety meetings.

Following the logic of the proposed model, we must now identify a set of indicators for each sensitive stakeholder grouped into each

dimension, and build within them a system of relations so that it will be possible to

- a. appreciate with ex-ante logic the future sustainability of the strategy;
- b. verify *currently* that the actions are coherent with the strategy;
- c. monitor ex-post the progress of the planned objectives.

The set of indicators relative to the strategic option “*production of energy from renewable resources*” can be usefully represented by the following “target chart” (Fig. 16).

In order for the system of measurement to be effectively used for planning and control, it must be organized according to Clover. In this way, it is possible both to make evident the validity of the hypothetical vertical, and diagonal relationships between measures, and to create the propositions for the verification of the horizontal relationships among dimensions, that would come through DartBoard if given real data.

Given that primary measures are logically linked with stakeholder satisfaction, it is more interesting to describe the cause-and-effect connection between secondary measures and primary measures. The above-formulated strategic option assumes, for example, the following vertical and diagonal relationships:

- *Vertical* relations between primary and secondary measures are:
 - a. *average cost for KWh* should be related to *total KWh from Renewable Energy Sources (RES)*, because the average cost of green energy is believed to be lower;
 - b. *revenues from green certificates* should be related to *KWh of green energy produced*, because the more green electricity you produce, the higher the number of certificates you receive;
 - c. *new customer acquisition* should be connected to *marketing investments* to push the green brand, because customers are assumed to be increasingly demanding “green-differentiated” products;
 - d. *direct emissions* should be connected to the power of innovation in the field of renewable resources, linked to *Research & Development (R&D) investments*, because it is assumed that the more that is invested in R&D, the higher the probability will be to reduce emissions;
 - e. *survey score for customers about the impact of the new generation plants* should be linked both with *R&D investments to minimize the aesthetic impact of production plants*, and the *investment in customer engagement*, because it is assumed that the more that is invested in R&D and in customer engagement, the better the chances are to create customer acceptance;

<i>STRATEGIC OPTION: PRODUCTION OF ENERGY FROM RENEWABLE RESOURCES</i>						
<i>ECONOMIC DIMENSION</i>						
<i>STAKEHOLDERS: SHAREHOLDERS, LENDERS</i>						
<i>STRATEGIC OBJECTIVES</i>	<i>PRIMARY MEASURES</i>	<i>TARGET</i>	<i>SECONDARY MEASURES</i>	<i>TARGET</i>	<i>INITIATIVE</i>	<i>BUDGET</i>
<i>cost reduction</i>	<i>average cost for KWh</i>		<i>% KWh from RES</i>			
			<i>tot KWh from RES</i>			
<i>new revenue streams</i>	<i>revenues from green certificates</i>		<i>KWh of green energy produced</i>			
	<i>new environmentally minded customers</i>		<i>marketing investments to push the green brand</i>			
<i>ENVIRONMENTAL DIMENSION</i>						
<i>STAKEHOLDERS: FUTURE GENERATIONS, REGULATION AUTHORITIES, GOVERNMENT</i>						
<i>STRATEGIC OBJECTIVES</i>	<i>PRIMARY MEASURES</i>	<i>TARGET</i>	<i>SECONDARY MEASURES</i>	<i>TARGET</i>	<i>INITIATIVE</i>	<i>BUDGET</i>
<i>emission reduction</i>	<i>direct emission of Greenhouse Gasses (CO2, CH4, NOx)</i>		<i># of emission prevention projects</i>			
			<i>ISO 14001 certification</i>			
			<i>R&D investments</i>			
<i>SOCIAL DIMENSION</i>						
<i>STAKEHOLDERS: CUSTOMERS, REGULATION AUTHORITIES, GOVERNMENT, EMPLOYEES, COMMUNITY</i>						
<i>STRATEGIC OBJECTIVES</i>	<i>PRIMARY MEASURES</i>	<i>TARGET</i>	<i>SECONDARY MEASURES</i>	<i>TARGET</i>	<i>INITIATIVE</i>	<i>BUDGET</i>
<i>quality improvement</i>	<i>survey score for customer perception about the service</i>		<i>RECS participation</i>			
			<i>ISO 14001 certification</i>			
<i>information on company's project</i>	<i>survey score about the impact of the new generation plants</i>		<i>R&D investment to lower impact</i>			
			<i>investment for customer engagement</i>			
<i>safer workplace</i>	<i># of accidents</i>		<i>safety investments</i>			
			<i># of hours of safety meeting per worker</i>			

Fig. 16. Target Chart.

- f. the *number of accidents* should be minimized with *safety meetings* addressing the potential risks of the new production plants, because it is assumed that the more informed the employees are, the more attention they will pay to safety procedures, thus reducing the accident rate;

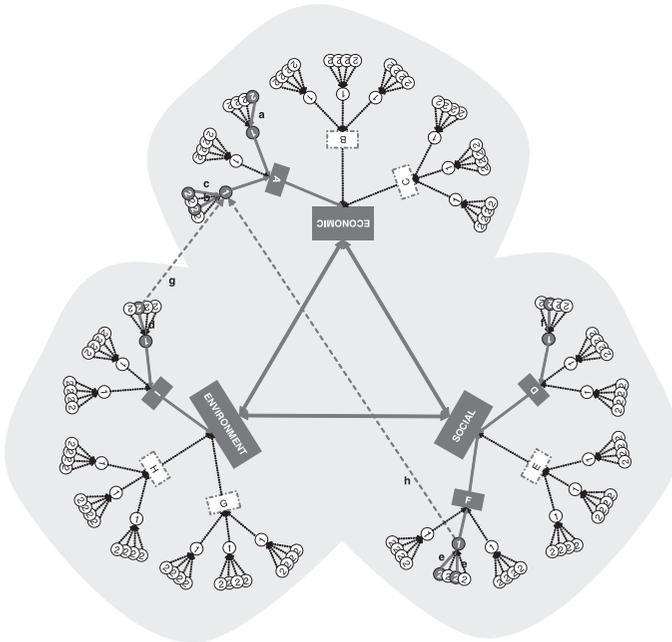


Fig. 17. Clover in Action.

- *Diagonal relations between primary and secondary measures:*
 - g. *revenue from green certificates*, which should be related to the *R&D investments*, because the innovation process could increase production of electricity;
- *Diagonal relations between primary measures:*
 - h. *new customer acquisition*, which should be connected to the *customers survey score for customer perception about the service*, because it is assumed that the more customers are satisfied with the service, the higher the customer acquisition rate will be.

Fig. 17 gives the image of Clover in action, where the strategic option “*production of energy from renewable resources*” is organized into the network of relationships highlighted by the lower-case letters in accordance to the description given above.

The last step to shape the performance measurement system is to transfer all the primary measures onto DartBoard, to evaluate the impact on sustainability of the given strategic option.³

5. CONCLUSION AND FUTURE AIMS

The requests for sustainability by interested parties are continually growing in number and force. Stakeholders have put great pressure on companies, forcing them to be more transparent in the market, and have succeeded in convincing them that the traditional system of reporting no longer suffices. As such, environmental and social performance reporting has been introduced, and in its most evolved form, companies can even replace the single bottom line with the triple bottom line (Elkington, 2000). The attention to sustainability, however, cannot be limited to external reporting. If sustainable development is the only option that guarantees survival, all business decisions must be made in accordance with it. For this reason management needs a control system that supports the decision-making process through:

- evaluating business performance through its economic, environmental, and social dimensions, in order to analyse their horizontal relationships (that highlight the trade-offs between the dimensions);
- identifying the performance drivers, by formalizing the system of vertical relationships (that link the actions taken to the realization of strategic objectives).

The proposed model performs these functions by using two complementary instruments of planning and control, *DartBoard* and *Clover*, placing them among the current instruments of management, with the intention of integrating the functionality of existing models.

However, some aspects still have to be elaborated. In particular, it is necessary:

1. to test the model here undertaken for PU in other industries, in order to verify its validity on a larger scope;
2. to identify a standard set of measures for every industry, making the degree of sustainability among companies a characteristic that can be compared in space and time. This would allow us to increase sustainability with a standardized DartBoard that could serve as a better performance interpretation tool;
3. to establish a system of scoring that makes it possible to correlate sustainability performance with stock market performance.

It is clear that many firms today still function on the basis of the traditional shareholder value maximization model. Nevertheless, we observe a growing interest in the new paradigm of performance, sustainability, for which an adequate measurement system has not yet been found. Our work represents a starting point that we hope will facilitate the management of sustainability.

NOTES

1. *DartBoard* is a trade mark of the authors.
2. The values are normalized to obtain zero at the minimum sustainability value. That is why in Fig. 5, the minimum values as a whole build a circle.
3. To complete this task, we would need the real data that we are unable to produce here, since the situation is hypothetical.

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ARE WE REALLY MEASURING CORPORATE SOCIAL RESPONSIBILITY?

Ilaria Bissacco and Paolo Maccarrone

ABSTRACT

This paper deals with the controversial issue of the congruence/incongruence between the corporate social responsibility (CSR) strategies and programs carried out by companies and the expectations of the different categories of stakeholders. In particular, the problem is addressed by comparing the structure of the main ethical rating systems with that of the “internal” CSR performance measurement systems implemented by a sample of large multinational firms operating in different industries. The early results show a great heterogeneity in the set of metrics used. In particular, ethical rating systems seem to be quite inadequate to measure the degree of social responsibility of a company.

INTRODUCTION

Several definitions of the concept of corporate social responsibility (CSR hereafter) have been proposed over the past decades. Two of the most

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frequently cited and widely acknowledged are the following:

- “The firm’s consideration of, and response to, issues beyond the narrow economic, technical and legal requirements of the firm” (Davis, 1973).
- “Corporate social responsibility is the notion that corporations have an obligation to constituent groups in society other than stockholders and beyond that prescribed by law or union contract” (Jones, 1980).

The Green Paper of the European Union (2001), is based mainly on these principles. Indeed, in this document CSR is defined as “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”.

Hence, according to this definition a company is qualified as socially responsible if in all its business activities it takes into consideration the interests of its own stakeholders, going beyond the legal requirements.

It is then possible to define different CSR areas, according to the stakeholder involved (see Table 1):

- Human Resources. Related relevant issues are the following:
 - Learning organisation
 - Great place to work
 - Health and Safety
 - Policies for changes
 - Equal opportunities
- Local community. In this area, the most important issues concern:
 - The development of the local economy
 - Indigenous people’s rights
 - Philanthropic initiatives
- Supply chain issues (with regard both to direct suppliers/customers and to final consumers):
 - Ethical criteria in the suppliers selection
 - Product quality and safety
 - Ethical trade
 - Supply chain traceability
- Environmental issues:
 - Minimisation of the negative impacts of the production processes
 - Optimisation in (natural) resources utilisation
 - “Green” product life cycle analysis
 - Recycling

Another important dimension of CSR consists in its management instruments and tools, i.e. the levers which can be used by top management

Table 1. The CSR Reference Framework.

Mission and Shared Values			
Initiatives			
Human Resources	Supply Chain/Competitive Context	Community	Environment
<ul style="list-style-type: none"> • Learning organisation • Great place to work • Health and safety • Policies for changes • Equal opportunities • Child labour/forced labour 	<ul style="list-style-type: none"> • Supply chain auditing • No abuse of bargaining power • No contracts which generate conflicts of interests • Product safety and quality • Correctness of the commercial practices • Ethical trade • Supply chain traceability • Product innovation 	<ul style="list-style-type: none"> • Support to the local community (philanthropy, voluntarism) • Partnerships with NGO/ONLUS • Development of the local economy • Financing of the social economy 	<p><i>Green processes:</i></p> <ul style="list-style-type: none"> • Minimisation of the negative impacts of the processes • Optimisation of the usage of the resources <p><i>Green products:</i></p> <ul style="list-style-type: none"> • Life cycle analysis • Recycling
<p><i>References</i></p> <ul style="list-style-type: none"> • Laws and regulations • Standards/guidelines • Business case 			
Instruments and Tools			
CSR Governance	External Communication and Reporting		Ethical Training and Sensibilisation
<ul style="list-style-type: none"> • Corporate governance instruments • Ethical code • Internal auditing system (balanced scorecard for CSR, internal ethical auditing) • Management systems (environment, quality, safety) 	<ul style="list-style-type: none"> • Cause related marketing • Environmental and social certification • Web site • Environmental and social reporting: sustainability and social report Change Management Program Management 		<p><i>Organisational instruments</i></p> <ul style="list-style-type: none"> • Courses • Internal workshop <p><i>Technical instruments</i></p> <ul style="list-style-type: none"> • Intranet • Ethics help line

to design, effectively implement and control CSR initiatives in a globally consistent framework. Examples of this kind of instruments are: codes of conduct/ethical codes, environmental and social management systems (social certifications included), internal auditing systems, CSR performance measurement systems (like balanced scorecards including CSR issues, for example), etc.

Another important complementary element of the CSR framework (somewhat linked to the latter category) consists in the external communication strategy, which, in turn, includes marketing and communication activities and social/sustainability reporting.

THE BUSINESS CASE FOR CORPORATE SOCIAL RESPONSIBILITY

Due to its (renewed) popularity, CSR has become a strategic issue, especially for large multinationals in the most-developed countries. Indeed, the socially responsible behaviour can be seen by firms' top management also as a possible source of strategic advantage.

This potential link has been recently analysed also by researchers and scholars, as proved by some theoretical studies on the relationship between social or environmental performance and financial performance, which have been carried out over the last years.

Some of them identify potential benefits coming from a high degree of social performance. For example, good relationships with local government and related stakeholders can help firms get the so-called "license to operate". Other possible benefits are (Epstein & Roy, 2001):

- a better access to financial markets, due to the higher attention paid by investors (and, consequently, financial intermediaries) towards environmental and social performance of companies;
- cost reductions, due to an higher environmental efficiency;
- positive reactions from (social responsibility sensitive) customers.

According to some scholars, the analysis of the literature on the business case for CSR leads to the identification of five commonly held beliefs (Knox & Moklan, 2004):

1. "Consumer preferences will increasingly favour products and services from socially responsible, transparent and trustworthy firms" (Willmott, 2001; Mitchell, 2001).

2. “Investors will increasingly prefer responsible companies and irresponsible companies will find their cost of borrowing rise” (*Accountability*, 2002).
3. “Potential (high-profile) employees will be attracted only by responsible companies, while the non-responsible ones risk skill shortages” (*UK Department of Trade and Industry*, 2001).
4. “Engaging with stakeholders encourages innovation”: UK DTI case studies (*UK Department of Trade and Industry*, 2001, 2002) and *Kong, Salzmann, Steger, and Ionescu-Somers (2002)* provide examples of cost savings and revenue growth through “fairer” supplier policies.
5. “Being trusted by stakeholders and pursuing socially responsible policies reduces risks arising from safety issues, potential boycotts and loss of corporate reputation”.

Other researches have investigated the conditions under which CSR can actually contribute to corporate value creation.

Burke and Logsdon (1996), whose aim was to assess when and in what ways CSR activities jointly serve economic and societal interests, identified five dimensions:

- (1) Centrality: the closeness between a CSR policy or programme and the firm’s mission and objectives;
- (2) Specificity: the firm’s ability to capture or internalise the benefits of a CSR programme;
- (3) Proactivity: the degree to which behaviour is planned in anticipation of emerging economic, technological, social or political trends;
- (4) Voluntarism: the scope of discretionary decision making by the firm and the absence of externally imposed compliance requirements;
- (5) Visibility: the observability of a business and the firm’s ability to gain recognition from internal and external stakeholders.

Despite the proliferation of this kind of studies, they fail to prove the links between a firm competitiveness in its business environment and its CSR strategy (i.e. the set of CSR initiatives carried out and the policies implemented by the firm).

SUSTAINABILITY PERFORMANCE MEASUREMENT SYSTEMS

If the adoption of a well-designed CSR strategy can really lead to a (sustainable) competitive advantage, it is very important for companies to adopt

appropriate management techniques and tools to control the implementation of the strategic CSR programs and measure their effectiveness. For example, according to [Higgins and Currie \(2004\)](#) companies that are willing to achieve a high degree of sustainability performance should include a social responsibility performance perspective in their business scorecard, and should set indicators for measuring the achievement of the objectives defined in specific areas of CSR. The introduction of this kind of metrics represents the necessary prerequisite for the improvement of corporate social and environmental performance, according to the assumption that “what gets measured gets done”. The two authors propose then a business scorecard that takes into consideration issues such as:

- Satisfying all legal and ethical requirements for the business conduct (reporting performance results in an ethical and legal way, ensuring responsible treatment of the external environment, providing equal opportunity employment, satisfying occupational health and safety requirements, etc.);
- Creating an internal climate that allows and encourages diversity;
- Providing financial performance information in a manner that is understandable and meaningful for the investors;
- Committing to all the local communities where the company operates;
- Committing support to non-for-profit organisations;
- Philanthropic actions;
- etc.

So far the problem of performance measurement has been approached from an “internal” perspective: we have considered the “social” performance measurement system as a managerial tool used by top management for control purposes, i.e. to check the effectiveness of CSR strategy and for a better integration of the CSR policies into the day-to-day operational decisions ([Epstein & Roy, 2001](#)).

But the “external” perspective must not be overlooked: all the different categories of stakeholders (consumers, banks, government bodies and citizens) are interested in evaluating the social performance of companies, too.

This explains why companies are facing an evergrowing demand for a more detailed and accurate accountability and reporting on social/sustainability initiatives. Different social reporting standards have been developed in the last years by associations, whose aim is to develop common guidelines in order to make social and environmental reporting of companies, as rigorous, complete, and comparable as possible. Examples of these standards are Global Reporting Initiative ([GRI – Global Reporting, 2002](#)), AccountAbility 1000 (AA1000) and, at a local (Italian) level, Gruppo

di studio per il Bilancio Sociale (GBS – Gruppo studio per Bilancio, 2001). In particular, the first (GRI) devotes great attention to the problem of the measurement. Indeed, GRI guidelines propose a set of indicators in all of the impact areas of the business activity, according to the Triple Bottom Line approach.

Anyway, social reporting is (still) made on a voluntary basis, and is addressed (at least from a theoretical point of view) to all categories of stakeholders: hence, social reporting standards must respond to the information needs of all stakeholders (according to the completeness and neutrality principles).

But in the last years the problem of measurement of the social “attitude” of a firm has been felt as particularly urgent by a particular kind of stakeholders: financial institutions. This is due to different “triggering” factors:

- investors have started adopting environmental and social criteria in their investment choices;
- the supposed positive relationship between the degree of social responsibility of a firm and its competitiveness (i.e. average profitability), which may affect the investment allocation decisions of funds and other large investors. Indeed, a specific branch called “ethical finance” has born in the last years: financial products belonging to this family (like “ethical” investment funds) can invest only in companies which meet a given set of social and environmental criteria;
- the issue of several national laws/rules and international agreements, which has forced companies to take into consideration the social and environmental impact of their business activities (Marquez & Fombrun, 2005), and, in turn, banks and credit institutions to carefully incorporate these aspects in their risk assessment procedures.

Ranking companies according to their sustainability performance has then become of fundamental importance: as a result, the number of agencies/associations which provide CSR ratings has rapidly increased.

THE ETHICAL RATINGS

This section is articulated into two parts: the first one is devoted to the illustration of the rating process, while the second one briefly illustrates the results of a compared analysis of some of the most important rating systems.

The Rating Process

Despite the proliferation of CSR rating agencies and the variety of methodologies adopted to assess the sustainability performance of companies, it is possible to define a common process based on a sequence of logical steps which are implemented by almost all rating systems.

The following scheme (Fig. 1) has been built analysing the rating process of four of the most important rating companies, which can be associated to the corresponding ethical index:

- SAM group (Dow Jones Sustainability Index, DJSI);
- SiRi company (FTSE4Good);
- Stock & Stake (Ethibel);
- Vigeo (ASPI).

The various steps are described in the following paragraphs:

1. *Information gathering*

The first phase consists in gathering a large amount of information and data coming from several sources, in order to achieve the highest degree of objectivity and completeness.

This phase is typically articulated in two sub-steps:

- the direct gathering of information from the company, through official documentation (balance sheets, reports and documents), and through other sources (questionnaires, meetings and interviews);
- the gathering of information from external sources: stakeholders, medias, press releases, databases and specific literature.

A summary of the different information sources is shown in Table 2.

Usually, at the end of this phase some “critical” areas begin to emerge, i.e. those areas where the firm does not seem to comply with the CSR criteria, and on which further information must then be collected.

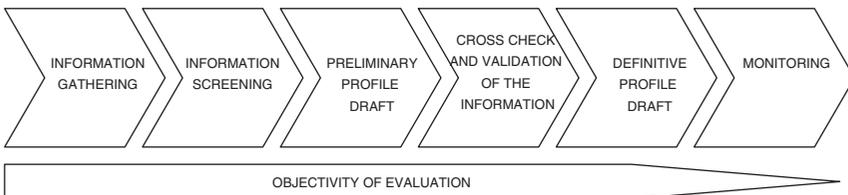


Fig. 1. The Rating Process.

Table 2. The Information Sources.

Internal Information Sources		External Information Sources	
Reports, documents and corporate divulgations	Environmental reports	Contact and dialogue with stakeholders	Questionnaires
	Social reports		Telephonic or personal interviews
	Health and safety reports		Meetings
	Human resources and human rights reports		Letters and e-mails
	Sustainability reports		Documents and reports by stakeholders
	Employee satisfaction surveys		
	R&D reports	Press release and media	General and financial press
	Internal and confidential documents		Specialistic journals and reviews
	Financial reports		Web sites and newsgroups
	Commercial documents		
Web site reports			
Direct contact with the company	Questionnaires	Qualitative and quantitative databases	Environmental emissions
	Telephonic or personal interviews		Human Rights violations
	Meetings		Quality certifications
	Company visits (especially to workplace)		Health and safety
	Letters and e-mails		Corruption and other similar crimes

Particular attention has to be paid to the updating of data, which should be made as frequently as possible, because of the dynamic context in which companies usually operate.

2. *Information screening*

The aim of this step is to assess the relevance of gathered data (i.e. their value in terms of social responsibility) and to associate each piece of information to the most appropriate category. Indeed, this phase is articulated in two sub-phases

- Evaluation of the meaningfulness of the gathered information.
- Classification of information, based on the CSR dimensions and criteria, as defined by the rating company.

In this step particular attention is paid to those critical information (such as accusations, pending legal actions or negative final judgements concerning CSR) which can lead to the *ex ante* exclusion of the company from the rating procedure (and, then, from the index that uses that particular rating system).

3. *Draft of the preliminary profile*

The information screening leads to the draft of a preliminary company profile, based on the meaningful and relevant data, which have not yet been verified and cross-checked. This profile is not to be considered definitive, but just as the basis on which the actual profile will be built.

4. *Cross-check and validation of the information*

This step aims at assuring the highest degree of reliability and correctness of the profile of the actual CSR performance of a company.

This objective can be reached through different validation techniques

- Gathering of the same information from different (reliable) sources, and/or more than once from the same source (by repeating the gathering process in different times).
- Reviewing and analysing the preliminary profile with the top management of the company itself.

The validation of the information generally requires a direct contact with the management of the company. This is a delicate phase, because top management is made aware of the emerging company CSR profile and, hence, of the judgement about their commitment towards environmental and social issues. This may of course lead to some

complaints and reactions, in case of a negative evidence. Anyway, this step, if correctly managed, is of fundamental importance to build a durable relationship and a continuous dialogue with the company, which, in turn, can lead to an improvement of its CSR performance.

Through this direct contact, managers also have the opportunity to comment on the information collected from external sources, to provide their explanation to some empirical evidence or even to question the reliability of some sources. One of the most delicate and critical issues for rating companies is to evaluate the relevance and reliability of this feedback, even through the analysis of further information.

5. Draft of the definitive profile

The next step consists in the elaboration of the definitive profile: this represents the output of the whole rating process.

This profile does not aim to attribute an ethical label to companies, but it rather aims to express their degree of compliance with the adopted criteria. It will report, in a structured way, the relevant information that has been selected, verified, and split into the appropriate categories of analysis.

The profile will have a different structure according to the rating agency by which it has been realised, and it will be able to provide either a single output (in the form of a qualitative synthetic judgement or of a quantitative score), or a judgement disaggregated in the main dimensions of analysis on which it is built. The profile and the final judgement will constitute the basis used by investors and stakeholders in general who are interested in knowing the social commitment of a company in its business activities.

6. Monitoring of the corporate social performance

Once the definitive profile is formulated, it is necessary to continuously monitor corporate activities in order to be timely informed about possible facts occurred, which could affect or even invalidate the previous evaluation and the corresponding score. The monitoring activity requires a complete analysis and formulation of a new corporate profile with a predefined frequency.

7. The search for objectivity

The activities aimed at ensuring the objectivity in the evaluation process do not constitute a sequential step of the process, but are common to all the previously illustrated steps. Each rating company indeed pre-disposes independent commissions (which can be either constituted by

internal or external members), or engages independent third parts, in order to guarantee as much as possible that its own rating system provides a fully reliable evaluation, and is not influenced by subjective judgements. This requisite is of fundamental importance for direct customers, for companies and for all those who use or are indirectly affected by the results of the rating process.

A Compared Analysis of the Rating Systems

Behind the whole rating process lies the fundamental problem of the definition of CSR and of its “boundaries”, which, in turn, affects the definition of criteria and indicators that can be used to assess the degree of social responsibility of a company.

With regard to this point, if the steps of the rating process seem to be very similar for the different rating societies, the adopted criteria, as well as the indicators used for each criteria, can be very different.

The most complete study on this issue is the one by [Mitchell et al. \(2004\)](#), who analysed the drivers used to measure sustainability by some of the most important ethical indexes, and compared the companies included in each index.

After a preliminary review and comparison of all the available social responsibility metrics, they selected five indexes (DJSI, Ethibel, FTSE4-Good, Domini 400 Social Index and Vanguard Calvert Social Index Fund), which, in their opinion, provided the most comprehensive evaluation of sustainable practices. They then decided to include also the Corporate Governance Quotient (CGQ), because it is the only one that focuses particularly on the corporate governance issues. In the following the main conclusions of this research will be briefly illustrated.

Complexity

Since the methodology used to analyse companies was time consuming to read and understand and there were no assessments available by category, it was impossible to know whether a company employed good sustainable practices across all categories or simply did well in some of them. This problem was made even more complicated by the fact that each index evaluated or emphasised different areas of sustainability.

Conflict of Interest

The indexes (or, better, the organisations that have developed those indexes) may suffer from a conflict of interests, since these indexes are often (or

mainly) used to attract investors. Indeed, the underlying assumption is that socially responsible firms perform better than the others. Therefore, it is not sure that all socially responsible companies are included in these indexes: many companies which have excellent sustainable practices may be excluded from the index because of their poor financial performance.

Uniformity

Even if the indexes take into consideration similar CSR dimensions, they do not use the same drivers. Even the terminology and the categorisation of drivers can be very different. For example, some indexes classify drivers in three macro-categories (economic, environmental and social areas), while others break out social drivers into internal and external sub-categories.

Besides this lack of uniformity in the classification, the major conclusion that can be drawn is the fact that these indexes do not use the same drivers and that some criteria are taken into consideration by some indexes and not by others.

By listing all the different criteria used by the analysed indexes, it is possible to build a grid and compare their degree of completeness, as shown in [Table 3](#). As can easily be seen, the degree of coverage of the different areas varies to a great extent from index to index: the DJSI seems to be the most complete, since it takes explicitly into consideration also economic indicators and some corporate governance issues, while the others seems to be more focused on specific CSR areas.

Consistency

One of the most interesting results of this research was the diversity in the list of components of the different indexes. The authors expected to find the same multinationals in all (or at least most) indexes: instead, only eight companies appeared in five of the six indexes considered (all but CGQ), and only 16 companies were listed among the components of four or more of the indexes ([Fig. 2](#)).

In addition, by looking at the pattern of co-occurrences between the indexes some large differences have been found, partly due to the disparity in geographical origin and focus ([Table 4](#)). The most “inclusive” index is DJSI: 69% of its components are found in one or more other indexes (but the percentage raises to 89% if we compare DJSI list of components with FTSE4Good one).

The least “inclusive” index is Calvert: only 37% of its component companies are found in the other indexes. In particular, only 12% of the

Table 3. The Comparison of the Sustainability Drivers used by the Different Indexes.

	DJSI	Ethibel	FTSE4Good	Domini400	Calvert	CGQ
Economic						
Customer relationship management						
Scorecards/strategic planning						
Product quality/future value						
Environmental						
Presence of environmental policy						
Environmental reporting						
Measurement of company impacts						
Measurement of product impacts						
Environmental management systems						
Emissions reduction programs in production activities						
Monitoring of suppliers						
Employee training						
Social-internal						
Equal opportunities						
Human capital development						
Employee participation						
Health and safety of workers						
Employee relations						
Social-external						
Stakeholder consultation						
Corporate citizenship/philanthropy						
Social reporting						
Product safety and social impact						
Human rights policy and monitoring						
Human rights impact assessment						
Indigenous people's rights						
Supplier monitoring						
Corporate governance						
Board composition						
Audit issues						
Executive compensation and ownership						
Governance and ethics						
Investor relations						
Risk and crisis management						

Source: Mitchell et al. (2004).

companies included in the Calvert index feature also in Ethibel, and only 15% in the DJSI.

These results are due to differences in the geographical coverage and in other methodological aspects. In fact, the European index Ethibel cover a lot of FTSE4Good companies (the other European index). Furthermore, FTSE4Good and DJSI, which adopt similar criteria and have similar purposes, have very high co-occurrences, as well as Calvert and Domini400, which in turn share similar purposes and methodologies.

The main conclusion that can be drawn from this analysis is that different ethical rating systems measure the same object – the company sustainability level – by using different metrics (Table 3), so that they provide different

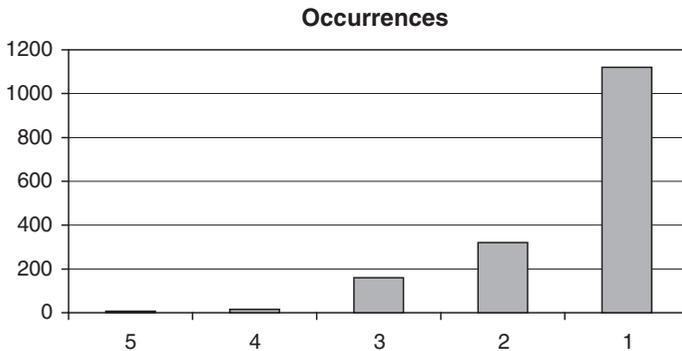


Fig. 2. The Occurrences of Companies Included in the Different Indexes (Mitchell et al. 2004).

Table 4. Co-occurrences of the Companies between the Indexes.

Double Entries	Calvert	FTSE4Good	Domini400	DJSI	Ethibel
% occurring in other indexes	37	51	61	69	64
Of which:					
Calvert (%)	█	33	84	18	19
FTSE4Good (%)	48	█	49	89	85
Domini400 (%)	82	32	█	13	21
DJSI (%)	15	53	12	█	51
Ethibel (%)	12	37	14	37	█

Source: Mitchell et al. (2004).

scorings for the same company. This might explain also the differences in the portfolios of companies of the different indexes, as shown in Table 4.

It is worth to be underlined that the comparison between criteria used by the different indexes has been carried out by summing up the criteria used by each index. Therefore, it is not guaranteed that the criteria listed in the rows of Table 3 represent all the dimensions of CSR.

In other terms, not only it is possible for a single rating system to overlook some criteria, as proved by the above-mentioned study: the same may happen also for the whole set of rating systems considered in this study, which might not be exhaustive. This may happen due to the different interests/sensitiveness of relevant stakeholders towards the different impact areas of CSR (if reference stakeholders are not interested in a particular kind of CSR-related initiative, this is likely to be disregarded or underestimated by

the indexes). At the same time, some of the initiatives that may have an impact in terms of value creation and business competitiveness may not be taken into consideration by the rating systems.

Moreover, given the possible internal conflict of interest, rating agencies might not represent the best solution to measure the actual level of corporate social responsibility.

THE RESEARCH PROJECT

Starting from the results of the review of literature, and in particular of the work of [Mitchell et al. \(2004\)](#), which have been briefly illustrated in the previous section, a research project have been designed, whose aim was to give an answer to the following research questions:

- Can companies (economically) benefit from “social-oriented” initiatives? If so, which “social-oriented” activities are more likely to create value to the firm? What kind of performance indicators are used by managers to implement and control CSR strategies? How should be an internal CSR performance measurement system (PMS) be designed?
- What is the link between CSR “internal” performance measurement systems and rating systems? Do managers and rating agencies use the same criteria to measure the degree of social responsibility of a company? What is the degree of “overlapping” (in terms of dimensions/number of indicators)? How can the differences be explained?

The first step of the research consisted in the empirical analysis aimed at gathering information from companies on the link between CSR and firm value, and the structure of CSR internal PMSs (if any). The research methodology consisted in the analysis of case studies. Empirical evidence was gathered through interviews with top managers of 17 large companies. The selection criteria were the following:

- large (multinational) companies,
- operating in different sectors,
- generally acknowledged as very active in the field of CSR.

The main descriptive parameters of the sample of companies (sector, nationality, dimension) are illustrated in [Table 5](#). Further information was obtained from indirect sources: corporate web sites, balance sheets, social and environmental reports, Health, Safety and Environment (HSE) reports, promotional brochures, etc.

Table 5. The List of Companies Involved in the Research.

Company	Industry	Nationality (Headquarters)	Revenues (2004, millions €)
Company A	Energy and Oil	Italy	162
Company B	Energy and Oil	Italy	716
Company C	Energy and Oil	UK	N.A.
Company D	Energy and Oil	Italy	3,300
Company E	Energy and Oil	Italy	N.A.
Company F	Energy and Oil	Italy	58,000
Company G	Energy and Oil	Italy	6,400
Company H	Energy and Oil	Kuwait	N.A.
Company I	Footwear and apparel	Germany	6,500
Company J	Apparel	USA	N.A.
Company K	Beverage	Denmark	N.A.
Company L	Coffee	Italy	767
Company M	Food	Italy	110
Company N	Health and care consumer goods	USA	10,500
Company O	Consumer goods	Germany	10,600
Company P	Pharmaceutical	Switzerland	28,200
Company Q	Components for domestic gas cooking appliances	Italy	120

The objectives of this phase of the research were:

- to outline the CSR strategy of the firm;
- to understand if (or which of) the implemented initiatives were supposed to have an effect on firm’s competitiveness (i.e. to create value);
- to analyse if the company measured its own social and environmental performance in a systematic way (and, if so, how).

Respondents were then asked to:

- explain which socially responsible initiatives had been implemented and which CSR instruments had been introduced so far (and which were planned in the next future);
- express their feeling about the impact of CSR activities and programmes on the firm competitiveness and corporate financial performance (both in the short and in the long term);
- illustrate the social performance measurement system adopted by the firm (if any).

Once all this information was collected, it was possible to proceed to the second step of the research: a comparison between the content of “social”

PMSs implemented by firms and the set of criteria (and related indicators) of the main rating systems was carried out to verify the degree of similarity of the two (internal and external) performance measurement systems.

CSR, FIRM'S COMPETITIVENESS AND VALUE CREATION: THE OPINION OF MANAGERS

The interviews led to the conclusion that there is full agreement about the fact that CSR can lead to benefits for firms in their own competitive environment and generate value (especially in the middle–long term). To be more effective, CSR strategy should be integrated within the overall business strategy. In particular, CSR is recognised as a mean to enhance reputation and to build stakeholders' trust. Benefits for the company are, for instance, the attraction of the best talents, higher market shares due to the attraction of “socially responsible” customers, higher degrees of customers' loyalty, an easier access to the capital markets and cooperative relationships with influent stakeholders.

It is possible to identify particular initiatives that respondents mentioned as a source of competitive advantage.

The most meaningful examples of responsible practices which, according to the interviewed managers, are particularly likely to create value for the company are reported below.

Environment

Being on the edge on research and process innovation for the reduction of the environmental impact represented for “company D” the strategic lever to differentiate itself from its strongest competitor, “company B”. For this reason the company was the first to introduce the combined cycle, and it has always paid great attention on being considered as a company which takes into great consideration the environmental issues in managing its business activities. At the same time, the research aimed at reducing the environmental impact can also lead to a greater efficiency. For instance, by using gas to fuel a combined cycle, a shorter quantity of fuel is consumed to produce the same quantity of energy (compared to traditional systems), thus avoiding the waste of resources and allowing the company to produce energy at lower costs. Even if the company recognises that nowadays consumers pay greater attention to the sustainability performance of

companies, the interviewee affirmed that this kind of initiatives (development of renewable energy sources, certification in a Safety Management System integrated with its Environmental Management System, collaboration with environmental associations and local governments in developing field initiatives, etc.) does not derive from an external pressure of some categories of stakeholders, but the real reason is just the awareness of the business opportunities coming from a responsible management of the environmental issues.

Community

- The manager of “company L” said that some of the initiatives for the local community, aimed at strengthening the relationships with customers (fairs, partnership with an organisation devoted to preserving traditional food and educating people about food as a centre of community, etc.) are considered as elements of the competitive strategy of the firm.
- The manager of “company M” talked about initiatives for the local community (in the sport, education and culture fields) as an opportunity for the company to associate its brand to particularly appreciated events (brand management).
- “Company O” launched different cause-related marketing initiatives, with the aim to improve the brand awareness and attract consumers.
- Initiatives for the local community corresponding to agreements with municipalities, are likely to create advantages for “company D” by guaranteeing the so called “license to operate”, for instance, for the opening of a new plant. The same example has been cited by the business unit director of “company B” operating in the same sector, who mentioned the initiative of creating green areas around a new plant as a means to be accepted as a member of the local community.

Human Resources

All of the companies involved in the research agreed that being responsible for human resources policies in general contribute to creating value for the company by motivating the employees who will be more productive. This fact is very important since the achievement of the business objectives depends to a great extent on the effort made by employees.

Initiatives in the field of Health and Safety, that obviously go beyond the existing laws and are a proof of the attention paid to human resources, can also generate benefits for the company, in terms of cost reductions due to

less absences for accidents or illnesses, as well as due to a reduced absenteeism rate (vice-president of the “company C” in Italy).

Supply Chain

- The interviewed manager of “company L”, talking about the commitment of his company towards consumers, said: “Our company ensures product quality and safety, traceability through the supply chain, suppliers selection on the basis of strict quality criteria and offers training and support programs to our customers. This behaviour is coherent with our strategy. In particular, the product quality and the environmental compatibility of the production process represent distinguishing factors, which must be translated into added value recognised by consumers through a premium price”.
- Other companies operating in sectors such as pharmaceutical and consumer goods, where the main reference stakeholder is the final consumer, are committed in satisfying consumer needs and requirements through the improvement and innovation of products and services, since consumer satisfaction and trust are the critical success factors of the company. For a pharmaceutical company this means: clinical trials that respect ethical and safety standards; information correctness, completeness and clearness in marketing campaigns; relationships with doctors and patients’ institutions aimed to improve patients’ health; projects for the development of a prevention culture.

In the words of a top manager of company P:

We are quite sure that CSR initiatives can generate business returns in the middle-long term, and the vision of a multinational company *must* be long-term oriented. Corporate citizenship, business ethics that avoid “hit & run” strategies, fairness and transparency of marketing policies not oriented to the achievement of short-term profits, the assignment of a part of the profit to projects in developing countries, etc., will be able to generate health and welfare, therefore business benefits for the company too. It is not about pure philanthropy; rather it is about a more integrated approach between business strategy and CSR policies.

- In the Energy and Oil industry, companies which cover the phase of electrical energy distribution (as “company A”, “company B” and “company E”), provide a service to the final user and his full satisfaction represents a critical success factor for the company.
- In the food and beverage industry, some important strategic decisions concerning the use/nonuse of genetically modified ingredients can be seen

as part of the CSR strategy. Company K:

CSR is seen as a competitiveness element, an investment which leads to higher costs in the short term, but to higher benefits in the long term. Expected benefits are above all of financial nature, thus related to the growth of the company. For instance, the choice not to use GMO in the beer production process allows the company to be seen as a 'bio' one, therefore to increase volumes and, then, profits.

Corporate Governance

The empirical analysis confirmed that the degree of "maturity" of companies on this particular issue is still relatively low. In some cases, corporate governance is not seen as an integrating part of CSR. With some important exceptions:

An objective of the Corporate Governance instruments is to make less risky corporate activities and processes and to make the company more attractive for the market in the long term. Transparency of corporate management processes can influence in a decisive way the market share performance of a quoted company only if its value depends both on tangible values (revenues, costs, debts, etc.) and on intangible ones, such as trust and ethics. Our company think that these values will be the key distinguishing factors in the future for the reputation and the success of a listed company, particularly if it operates in several international market contexts (CEO of "company E").

CSR PERFORMANCE MEASUREMENT SYSTEMS AND RATING SYSTEMS: A CLOSE RELATION?

The interviews show that top managers generally agree on the potential benefits coming from a better environmental and social performance, but they hardly try to measure the impact of this kind of initiatives in terms of competitiveness and profitability in a structured and rigorous way. Indeed, most of the companies lack an appropriate measurement system including indicators to assess and monitor sustainability performance.

In just few cases companies monitor their own sustainability performance through the gathering and the elaboration of financial and nonfinancial information (usually called key performance indicators (KPIs)). In those cases KPIs are defined taking into account:

- the CSR strategic programs;
- indicators/criteria included in sustainability reporting standards/guidelines;
- the peculiarities of the business areas in which the company operates;
- more rarely, the rating criteria used by the main ethical stock indexes.

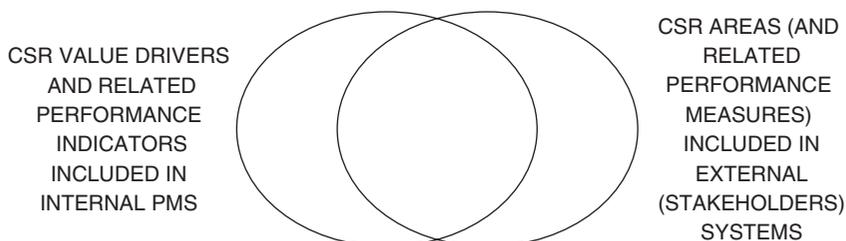


Fig. 3. The Overlapping of Internal and External Social Performance Measurement Systems.

Hence, since CSR internal PMSs are designed according to the specific CSR strategy, and since this can vary to a great extent from firm to firm, according to factors as the overall competitive strategy, its degree of internationalisation, the fact of being quoted or not on a stock exchange, we can expect that there will not be a total “overlapping” between the set of indicators included in these strategic CSR PMSs and those included in rating systems (see Fig. 3).

Indeed, if we compare what rating systems measure with what companies do (in the very few cases where a well-structured PMS exists), we find that sometimes some aspects which constitute part of a CSR strategy are not considered by rating systems (and vice versa).

DO RATING SYSTEMS REALLY MEASURE THE DEGREE OF SOCIAL RESPONSIBILITY OF A FIRM?

The main conclusions that can be drawn so far are the following:

- the main rating systems show some relevant differences, with regard to the CSR dimensions and the criteria used to assess the degree of social responsibility of a company;
- managers are aware of the possible impacts of CSR on firm’s competitiveness. Nevertheless, they generally find it difficult to design ad hoc performance measurement systems for CSR programmes. In the few cases where a “social” PMS has been implemented, these PMSs show a limited overlapping with the areas covered by the main indexes.

Some questions then naturally arise:

- Why do companies seem to be not interested in monitoring some CSR dimensions? Is it because most of them are still in an exploratory phase? Is

it just a problem of time? Or is it because they do not believe that those areas are part of CSR?

- Are these rating systems exhaustive in monitoring all of the dimensions of CSR? In other words: do they really measure the degree of social responsibility of a firm? Are all those dimensions/criteria really linked to CSR? Are they missing something?

To try to answer to these research questions the set CSR programmes and initiatives implemented by the firms of the sample have been compared with the CSR dimensions (and related indicators) of the analysed rating systems. The most interesting results emerging from case studies are illustrated in the following.

Company A

This company is generally considered “state-of-the-art”, with regard to corporate social responsibility, in particular in the area of sustainability reporting.

The quotation in the stock exchange in 1999 implied on the one hand a redefinition of its corporate identity and mission, and on the other the identification of reference stakeholders and the elaboration of a transparent communication policy. The company top management became progressively aware of the need to communicate the ethical values on which its business strategy was based, and to promote its image according to these values. Moreover, the perspective of the internationalisation of markets induced the company to improve its efficiency and competitiveness also through a socially responsible behaviour since external stakeholders such as public opinion, political-institutional and economical actors were showing a growing sensitiveness towards environmental and social issues.

Besides the social and environmental reporting, the company has developed and embedded in its current routines and procedures other CSR activities and tools, like customers satisfaction surveys and stakeholders’ listening sessions, whose results are used for the already-mentioned reports. In particular, stakeholders’ listening sessions have been introduced in 2000, in order to capture the expectations of the different interlocutors. Compared with traditional surveys (telephonic interviews to citizens based on a series of typically closed or anyway synthetic answers), these sessions consist in the listening of all of the stakeholder categories (either individually or in focus groups) according to a scheme that let the interlocutor free to express his own opinions on all the firm business activities on which he is concerned

(or from which he is affected): this enables top management to perceive the degree of satisfaction and the expectations of all stakeholders in a very accurate way. Customer satisfaction surveys and stakeholders listening sessions are repeated every year, and they contribute to the verification of the coherence between the fulfilment of the objectives defined in the corporate mission and the external perception of the achieved results.

The company has also become aware of the possibility to new models for the management control, capable to integrate economic and financial indicators, already known and used by all of the firms, but considered not useful to interpret future scenarios, with social and environmental indicators, not yet available in all of the companies, but considered anticipating corporate development and success. The company has taken part in a research project of the International School of Management INSEAD of Fontainebleau “Sustainability Balanced Scorecard”.

By looking at these few aspects of the CSR strategy of “company A”, it is possible to identify some sustainability drivers, which are disregarded by some rating systems. More precisely,

- social reporting;
- stakeholder consultation and
- the adoption of ad hoc performance measurement systems (as the “sustainability balanced scorecard”)

are not taken into consideration by some (or all) rating systems, as can be easily seen in [Table 3](#).

Company H

Its HSE policy states that the firm is engaged (also) in “training employees about environmental protection and work safety procedures”.

The sustainability driver “Environment – Employee training” is not considered by any rating system (except for Calvert Social Index Fund).

Company J

In 1991 the company was the first multinational to introduce a code of conduct for its suppliers, called “terms of engagement”. This code prescribes a number of requirements that the supplier must meet to be involved in business activities with the company, including health and safety conditions for workers, as well as environmental issues. If the company finds out that a business partner is not compliant with the terms of engagement, it asks for

the implementation of a corrective plan to prevent the interruption of the business relationship.

This kind of initiative could be related to “social-external – monitoring of suppliers”: nevertheless, it must be noticed that this dimension is neglected by some of the most important rating systems.

What emerges from these examples is that some initiatives that companies include in their CSR programs are not always “captured” by the rating systems. The explanation can be twofold:

- the perception of firm managers of what is a CSR initiative and what not is sometimes wrong;
- rating systems are incomplete.

In contrast, some of the criteria used by most rating systems seem to have a very weak relationship with CSR: they can rather be considered as part of “normal” strategic management systems. This is the case of customer satisfaction surveys, CRM activities, employee training (except for “social” training, of course), risk and crisis management systems, etc.

These considerations suggest that rating systems should enlarge their set of sustainability indicators to include at least some of the areas and related indicators used by companies, which has been so far neglected.

But the opposite is also true: companies should take into account also issues that they have not implemented yet, but are considered anyway extremely important by external stakeholders. Companies could benefit from the improvement of those performances that make them compliant with the sustainability criteria of the rating systems, since this can lead to an easier access to debt, or simply to a positive impact of the company image.

According to this view, each indicator included in a rating system can be seen either as a value driver (if coherent with the CSR strategy), or as a constraint to be complaint with. A strategic PMS should then include:

- value drivers, which are not taken into consideration by any social rating system;
- value drivers, which are included in one or more rating systems;
- a third set of relevant indicators extracted by the most important rating systems (which cannot be neglected by the company).

Of course, the relevance of this set of parameters must be put in relationship with some firm-specific or sector-specific contingent variables (quotation, degree of financial leverage, etc.), which determine the overall importance of financial ethical ratings.

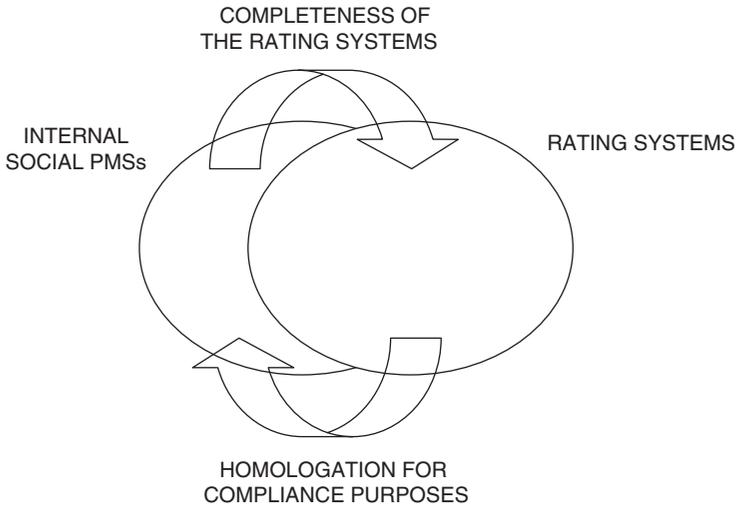


Fig. 4. The Convergence between Firm Internal Social PMSs and the Set of Indicators used by Rating Agencies.

Anyway, at least a partial convergence between CSR strategic performance measurement systems and the content of ethical rating systems can be expected, as illustrated in Fig. 4.

Since the incompleteness of the rating systems may be linked to the fact that they fail to consider all of the CSR drivers that companies should implement, that scheme should be enriched by a wider circle that encompasses the other two, which would represent the set of sustainable practices that can be drawn from the different international standards, such as ILO conventions, human rights declarations, OECD guidelines for multinational companies, etc., and from the direct consultation with the different categories of stakeholders.

Then, the research question could be enlarged by considering how much the real expectations of the whole society can be coherent with the primary aim of a company (value creation).

CONCLUSIONS

Corporate social responsibility is an issue that has been attracting the attention of several actors, from researchers to managers, from NGOs and

institutional representatives of the main categories of stakeholders, to the individual consumer, investor and so on.

The growing awareness of stakeholders about the need of a wider social commitment from companies can represent both a bond and an opportunity.

Managers of large companies seem to recognise the potential contribution of CSR policies to the business competitiveness, but the actual impact of this kind of initiatives on value creation is hardly measured as well as the sustainability drivers are hardly monitored.

Just a few companies have started enlarging their performance measurement systems by considering indicators related to CSR issues. A source of suggestions for the choice of the indicators that are to be measured, is represented for instance by the several sustainability reporting standards that have been introduced, and by the different ethical rating systems that provide sustainability profiles for the selection of companies within ethical stock indexes, such as DJSI, FTSE4Good, etc.

These references are supposed to define the requirements that different categories of stakeholders pose to the firms, so that they provide a set of performances, which companies should satisfy.

Since the aim of a “for profit” company is to create value, managers are interested in monitoring both sustainability drivers to which stakeholders pay attention and those which constitute a source of competitive advantage.

The core question is about the relation between the CSR strategy of a company, which has to be coherent with its aim of value creation, and the external requirements of the whole society, which is strongly asking companies to be compliant with ever-stricter ethical, social and environmental criteria. Are the two things compatible?

To answer this question, it is necessary to analyse if what companies have to do in order to be considered socially responsible coincide with what is profitable in terms of value creation for the company. That is to say we should compare what is measured by stakeholders with what is measured by companies.

This paper illustrates the early results of a project which tried to give a first answer to the problem by comparing the set of criteria and indicators defined by ethical rating systems, which provides a proxy of the external requirements, with CSR strategies of a group of large companies.

This analysis led to the conclusion that these measurement systems fail to take into account all of the sustainability drivers which, on the contrary, companies implement, so that they are incomplete and do not provide a perfectly reliable sustainability performance profile of a company.

If we also consider that a company is not perfectly compliant with all of the sustainability criteria adopted by rating societies, it is possible to affirm

that there is a double gap between CSR strategy of companies and measurement systems: companies implement initiatives that rating systems do not measure, while rating systems monitor sustainability issues that companies do not always take into consideration. This fact seems to suggest that CSR strategy and external stakeholders' interests do not perfectly coincide.

Next steps of the research should address the following issues:

- understand to what extent the CSR strategy of a firm can be consistent (and compatible with) stakeholders' expectations;
- enlarge the set of social responsibility metrics analysed to include the emerging sustainability reporting standards and other CSR performance measurement systems.

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AN EXPLORATION OF THE EFFECTS OF PROCEDURAL JUSTICE PERCEPTIONS OF A GAINSHARING PLAN ON MOTIVATION AND WORK EFFORT[☆]

Frances A. Kennedy and James M. Kohlmeyer III

ABSTRACT

This study examines the use of a gainsharing reward system to channel employees' work efforts. After a history of losses, the plant was purchased by private individuals with consulting experience in culture change. The new owners implemented a target-based gainsharing program to motivate and stabilize the workforce. Prior research suggests that fairness issues concerning gainsharing plans have important consequences for a business organization and its employees. Our study extends this research by examining the relation between perceived procedural fairness of the gainsharing plan, locus of control, intrinsic motivation and their subsequent effects on work effort.

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INTRODUCTION

Gainsharing represents an increasingly popular incentive plan in which workers share productivity gains with employers through a bonus system. Although numerous studies of gainsharing have appeared in the business literature (e.g. Welbourne & Gomez-Mejia, 1995) relatively few studies have investigated organizational justice (fairness) within gainsharing plans. According to Welbourne, Bakin, and Gomez-Mejia (1995) and Welbourne and Gomez-Mejia (1995), in a gainsharing plan, fairness issues have important consequences for a business organization and its employees. Welbourne et al. (1995) report that perceptions of the plan's fairness are linked to satisfaction with the plan and the mutual monitoring of employee behaviors. Our study extends this research by examining the relation between the perceived fairness of the gainsharing plan, motivation, and work effort. In our study, we argue that gainsharing plans perceived as fair will foster feelings of control and the development of intrinsic motivation which, in turn, will have positive effects for the organization and its employees, such as increased work effort.

This study explores the relationships among procedural justice, locus of control (LOC), intrinsic motivation and their effect on employees' work effort using survey responses of 310 employees of a manufacturing facility. Results indicate employees' fairness perceptions of their gainsharing plan influences employees' level of work effort through LOC and intrinsic motivation.

This paper is organized as follows. We first provide background on procedural justice, LOC, and intrinsic motivation while developing their relationships with work effort. Then we discuss the organizational context and the gainsharing plan for this facility. This is followed by the methodology and analysis results. Finally, we conclude with a discussion of results and their implications for future research.

THEORETICAL DEVELOPMENT

Procedural Justice

Procedural justice concerns the perceived fairness of the process and procedures by which allocation decisions are made (Brockner & Wiesenfeld, 1996; Parker & Kohlmeyer, 2005). It, therefore, focuses on the means through which decisions are made rather than the outcome of those decisions. How

outcomes are determined may be even more important than the actual outcome (Folger & Cropanzano, 1998). The important fairness issue concerns the consistency of decisions across individuals. In other words, are the same standards used for all individuals? Do decision-makers display bias? Even when the outcome appears undesirable, employees still consider they were treated fairly if they had input into the decision process (Thibaut & Walker, 1975). Procedural justice theory suggests that the fairness of the process of decision-making shapes employees' judgments of decision makers' trustworthiness and the long-term prospects for fair treatment (Tyler & Lind, 1992). Procedural justice is found to predict employee's organizational commitment (Folger & Konovsky, 1989; Konovsky & Cropanzano, 1991), trust in managers (Konovsky & Pugh, 1994), job satisfaction (Parker & Kohlmeyer, 2005), and turnover intentions (Dailey & Kirk, 1992).

Procedural justice stands in contrast to another type of justice, distributive justice. Grounded in equity theory (Adams, 1965), distributive justice involves the fairness of resource allocation outcomes. Accordingly, in assessing fairness, individuals evaluate the value of their work inputs (e.g. training and motivation) relative to the outcomes received from the organization (e.g. pay and promotions). Folger and Cropanzano (1998) argue that procedural justice and distributive justice are related. In research studies, measures of procedural and distributive justice often exhibit very high correlations suggesting that the constructs overlap or strongly influence each other (Parker & Kohlmeyer, 2005). In addition, research indicates that procedural justice weighs heavily on individuals' decision of how to perceive outcomes. Individuals are affected more strongly by procedures when the outcomes are unfavorable (Brockner & Wiesenfeld, 1996). Individuals pay close attention to procedures when outcomes are poor in order to make sense of poor outcomes (Brockner & Wiesenfeld, 1996). Procedural justice influences perceptions of the fairness and acceptability of outcomes (Lind & Tyler, 1988). Even though employees may find the outcomes are undesirable, they who consider the process to be procedurally just will view the anticipated outcomes of their work effort to be fair and perhaps justifiable.

Locus of Control

Research on LOC suggests that individuals vary in their expectancies regarding their ability to control events affecting them and their tendencies to attribute the causes of their successes or failures to either internal or external successes (Allen, Weeks, & Moffit, 2005). Individuals with internal LOC

(internals) have high expectancies of their ability to control events, and they attribute success or failure to themselves. Those with an external LOC (externals) have low expectancies of control and attribute success or failure to external sources (e.g. powerful others or fate) (Rotter, 1966).

Because internals believe that they have more control over their lives, they believe the probability of goal attainment is directly proportional to their efforts (Lefcourt, 1982) and thus, are more willing to set more difficult goals for themselves as compared to externals (Yukl & Latham, 1978). Internals expend greater effort than externals when it is believed that effort leads to rewards (Majumder, MacDonald, & Greever, 1977; Spector, 1982). Internals are also better able to deal with stressful situations (e.g. unfair allocation of resources) as compared to externals (Clarke, 1995; Martin, Thomas, Charles, Epitropaki, & McNamara, 2005). Externals are associated with more profound hopelessness and loss of self-efficacy to reverse adversity (Luzzo & Ward, 1995; Rose & Psenicka, 1996). Internal LOC are more likely to exhibit greater intrinsic motivation, be more achievement oriented, and report lower turnover intentions (Renn & Vandenberg, 1991; Spector, 1982).

In accounting research, LOC has been examined to a limited extent. LOC has acted as moderator in participative/performance studies associated with participative budgeting situations (Brownell, 1981; Frucot & Shearon, 1991; Licata, Strawser, & Welker, 1986). In an audit setting, there is evidence that internal LOC is associated with enhanced performance as compared to external LOC (Hyatt & Prawitt, 2001) while external LOC are more accepting of dysfunctional behavior such as deception and manipulation in an audit (Donnelly, Quirin, & O'Bryan, 2003). Kalbers & Fogarty (2005) report that internal auditors who evidence less burnout symptoms tend to have an internal LOC.

Intrinsic Motivation

Research has defined intrinsic motivation as the motivation to engage in work primarily for its own sake, because the work itself is interesting, engaging, or in some way satisfying. This contrasts to extrinsic motivation which is the motivation to work primarily in response to something apart from the work itself, such as reward or recognition or the dictates of other people (Amabile, Hill, Hennessey, & Tighe, 1994). Psychological studies have focused primarily on intrinsic rather than extrinsic motivation, in attempts to explain behaviors such as exploration and challenge seeking, which have no clear external reinforcements (Amabile et al., 1994). Amabile et al. (1994) suggest that unexplored behavioral consequences of intrinsic and extrinsic

motivation need to be examined. For example, intrinsically motivated individuals may select work assignments that allow them to develop new skills, exercise creativity, and become deeply involved in their work. In contrast, extrinsically motivated individuals may view their work environment in terms of extrinsic rewards (e.g. money, recognition, competition).

While these two types of motivations may appear to be diametrically opposed to each other, some theorists (i.e. Deci & Ryan, 1985; Hartar & Jackson, 1992; Sansone & Harackiewicz, 2000) suggest that under some circumstances intrinsic and extrinsic motivations can have additive effects. Amabile et al. (1994) developed a work preference inventory instrument that assessed intrinsic and extrinsic orientations. They reported that the intrinsic and extrinsic orientations were quite separable. Their data suggested that intrinsic and extrinsic motivation are distinct processes. However, Amabile et al. (1994) suggested that one type of motivation does not necessarily undermine the other. Some highly autonomous individuals, while retaining high levels of intrinsic motivation toward their work, might also be highly motivated to achieve compensation for that work.

Hypotheses

The proposed theoretical model appears in Fig. 2. As indicated in the figure, the key exogenous variable is procedural justice. Specifically, hypothesis one examines the effects of procedural justice on intrinsic motivation, LOC and work effort. Procedural justice involves the fairness of the process and procedures by which allocation decisions are made. A perceived unfair process may result in the denial of organizational rewards to which the individual feels entitled (Parker & Kohlmeyer, 2005). An unfair process could have a direct effect on one's intrinsic motivation. While he or she may engage in work primarily for its own sake, an unfair process may send a message that the worker's contribution is not valued. When intrinsic motivation is adversely affected one's work effort is also diminished. Employees who experience low levels of procedural fairness are expected to exhibit low intrinsic motivation, which results in decreased work effort on the job. This leads to the following hypotheses:

H1a-b. Employees' perception of the procedural justice embodied in a gainsharing plan will have a positive effect on the employees' (a) intrinsic motivation and (b) work effort.

Currently, expectancy theory is the most widely accepted and empirically supported theory of motivation (Robbins, 1993). According to expectancy

theory, the strength of a person's motivation depends on the extent to which they believe that "exertion, performance, and reward" are linked tightly. Expectancy theory predicts that a person with a more internal LOC will be more motivated than a comparable individual whose LOC is external because internalizers see themselves as "in-control" (Skinner, Chapman, & Baltes, 1988; Skinner 1995). While a person's perception of procedural justice can be strong, there is evidence that one with an internal LOC will be better able to adjust to any unfairness and still be motivated on the job (Clarke, 1995; Martin et al. 2005). In addition, if the process is procedurally unjust, employees are likely to doubt the integrity of management. If the management's integrity is in question, then the employee may feel less control of their situation and be discouraged that their efforts may go unrewarded (Korsgaard, Sapienza, & Schweiger, 2002). Thus, we hypothesize the following:

H1c. Employees' perception of the procedural justice embodied in a gainsharing plan will have a positive effect on the employees' LOC.

As previously discussed, expectancy theory predicts that a person with a more internal LOC will be more motivated than a comparable individual whose LOC is external (Skinner et al., 1988; Skinner, 1995). Evidence that LOC directly influences motivation comes from several studies. Hartar (1978), Kuhl (1981) and Heckhausen (1991) reveal that when perceived control is high, a person tends to embrace challenges (more motivated) and exert more effort. Internal LOC has been found to be strongly related to the hard work dimension (Mudrack, 1997). The following hypotheses are presented:

H2a-b. Employees' level of control is positively related to the employees' (a) intrinsic motivation and (b) work effort.

H3. Employees' level of intrinsic motivation is positively related to employees' work effort.

ORGANIZATIONAL BACKGROUND

Established in the 1950s by a global Fortune 500 company, this plant manufactures utility hardware. In 2003, the company intended to shut down the facility because of a history of losses. Instead, they sold the plant to the principals of an organization-consulting firm. These two principals had established a relationship with the employees through several training initiatives over a number of years. They changed the name to JRM, Inc. and

continued production of utility hardware. The principals believed that their consulting firm could provide the experience necessary to assist in the transition. Planned initiatives included establishing teams, implementing 5S and visual factory concepts, reorganizing into manufacturing cells and using kaizen blitzes to incorporate continuous improvement and JIT techniques.

Production averages 180,000 units per year of four main products, totaling \$94.5 million in sales. The cycle times to complete one unit range from 3 to 6 days, depending on the product. The plant consists of over 677,000 sq. ft and employs 461 people (380 hourly and 81 salaried and a temporary force). Seventy-seven percent of hourly employees belong to the IBEW union in this right-to-work state and the non-exempt employees belong to the AWEA union. There has been no work stoppage for either union in over 25 years. A new collective bargaining agreement was negotiated that included annual increases, gainsharing and a 5-year agreement to establish stability.

Although the new owners had no experience with managing a manufacturing facility, they were experienced change consultants. One of their key concerns was turning a consistently loss position into profit. They implemented the gainsharing program in order to create an environment in which the employees were more involved and motivated. The owners believed that the goals in the gainsharing plan would help to both increase employees' work efforts and to leverage these efforts most effectively.

THE GAINSHARING PROGRAM

Gainsharing programs are incentive plans that link future rewards to the performance of an entire unit, rather than an individual. There are three basic types of plans, although most firms use variations of these (Welbourne et al., 1995). The Scanlon plan's main focus is on labor savings and employee involvement, while the Rucker plan uses a value-added formula to distribute bonuses. The Improshare plan does not emphasize employee involvement but uses hours per unit to determine the bonus level (Welbourne et al., 1995). There is no one-size-fits-all solution and more companies use variations that include operational and customer-focused outcome measures.

In order to focus on key areas, the principals enacted a gainsharing program designed to involve employees in on-going improvement efforts and to share in the rewards. A team of managers, hourly employees and a union representative identified five key result areas: Customer, financial health, people, continuous improvement/process control and revolution.¹ Multiple measurements were identified to monitor progress in these areas and became

Table 1. Key Result Areas and Performance Measurements.

Key Result Area	Performance Measurements
<i>Customer</i>	
Results that will reflect customer delight	<ul style="list-style-type: none"> • Ship on time and complete • Filed incident rate • Overdue shipments
<i>Financial health</i>	
Ensure viability of PPI	<ul style="list-style-type: none"> • Material cost • Cash flow • Inventory turns
<i>People</i>	
We have a team oriented, continuous learning environment that is safe and healthy for all of our employees	<ul style="list-style-type: none"> • Injury incident rate • Visual systems • Hours/unit
<i>Continuous improvement/process control</i>	
Conformance to a continuous improvement of processes by eliminating non-value adding activities in order to meet profit objectives and customer specifications	<ul style="list-style-type: none"> • Overdue shipments • Throughput dollars per employee • Documented cost reductions
<i>Revolution</i>	
Creating alternative materials products and services with outside resources and grants	<ul style="list-style-type: none"> • Cost neutral alternative oil • Profitable new products • Profitable new services

the performance measures used in establishing gainsharing targets. Table 1 illustrates the key result areas and measures.

The gainsharing team consists of the two principal owners, managers of human resources, operations, quality and continuous improvement and maintenance. Other members include representatives from major plant areas such as manufacturing support, 5S auditor, union representative, finance, two line workers and two supervisors from both first and second shifts. The team meets monthly to review results and set the targets for the following month.

Setting Goals

At monthly meetings, the gainsharing team reviews the prior months' results and sets the targets and pay-out amounts for the following month. The team has flexibility to change or add goals as the business climate warrants. For example, during 2004, the four metrics used consistently through the year were man-hours per unit, end of line defects (EOL), test failures and on-time

complete orders. During april and may, EOL defects were replaced with overdue shipments. The team met in January 2005 and established a revised set of base measures for the new year: Scrap dollars per unit, meeting daily required production, speed (measured as inventory turns and order-to-invoice time), and cash flow (measured as meeting budgeted net cash generated by operations).

The goals are set using a process called ‘continuous improvement goal setting’ (CIGS). Fig. 1 displays an example of this process. The left hand side of the worksheet records historic high and low performance. For each goal, the worst score, average score and best score are recorded on the left hand side of the worksheet. On the right hand side, the management minimum is the midpoint between the worst and average performance. The short-term goal is set reasonably close to midpoint between the average and the best historical performance – this becomes the gainsharing target for the next month. The long-term target for the measure is also noted. Over time, the actual performance numbers are adjusted to tighten the range (e.g. the worst over the last 12 months). This goal setting process is used because it is transparent in that workers can see that they not only have achieved the target before, but that they have exceeded it.

Setting Pay-Out Values

The gainsharing team also adjusts the dollar amount of the monthly payouts to employees. During 2004, the maximum amount of monthly payout per employee was set at \$200 and was established with consideration of budget restrictions and employee impact. This was raised in 2005 to \$225. Dollar amounts were set for each targeted goal to add to \$225. In this way, the gainsharing team was able to weight various factors considered key in the current business environment. For example, during one of the monthly meetings that we visited, the payouts for February 2005 were set:

(1) Meeting targeted production	\$ 80
(2) Scrap dollars per unit	\$ 80
(3) Speed	\$ 40
(4) Cash flow	\$ 25
Potential Maximum Payout	\$225

Employees earn the payout amount for each target separately. Therefore, if only one goal is met, they still receive a payout.

Worksheet for Determining Continuous Improvement Goals

Performance Measure: Hours per Unit

Worst Score ever attained

5.17

(Worst score on record or that anyone remembers attaining)

Typical score/baseline average

4.90

(Level of performance considered to be normal or typical for this measure)

Best score ever attained

4.45

(Best score on record or that anyone remembers attaining)

Management Minimum

5.00

(Better than worst ever but attained worse than typical)

Short-term goal

4.75

(Better than typical but worse than best ever attained)

Long-term goal

4.20

Fig. 1. Continuous Improvement Goal Setting.

Gate

In addition to meeting these goals, there is a gate the plant must also meet to be eligible for a payout. Fifty unexcused days (excused days include jury duty, sick days, vacation and personal days) plantwide is the threshold. In other words, 51 days missed results in no payout for anyone for the month. Targets were reached during the first month of gainsharing. There was no

Table 2. 2004 Gainsharing Payout by Month.

Month	Payout (\$)
January	60
February	0
March	150
April	40
May	0
June	125
July	95
August	125
September	50
October	0
November	0
December	50
Total	695

payout, however, because the attendance gate was not met. Further analysis indicated the cause was from a small handful of employees. Consequently the rules for the attendance gate were tweaked in order to ‘punish the few rather than the many.’²

Gainsharing Performance

The total payout per employee during 2004 was \$695. Table 2 lists the payouts by month for 2004. Over a period of 20 months, there were 12 payouts ranging from \$25 to \$125.

RESEARCH METHOD

Sample and Procedure

We used a survey to collect data within one manufacturing facility to address our hypotheses. Employees were asked to meet in the cafeteria near the beginning or end of their shift to complete the survey during their paid work hours. We were present to administer the survey, answer any questions about how the data would be used and to ensure the complete anonymity of their responses. When finished, each employee inserted their own survey in a large envelope in the researcher’s possession.

The survey was completed by 389 workers, including both hourly floor workers and salaried office workers. No managers were included in the sample. For the analyses, we eliminated 79 of the respondents due to missing responses, leaving 310 respondents in the final sample. Respondents were eliminated if they omitted two or more questions on any one scale or more than two total questions on the survey. Missing data was estimated using maximum likelihood estimation method in EQS as supported in Allison (2003). Two-thirds of the sample is male and one-third is female. The majority of the sample employees works on first shift (56%), while the remaining employees work on second and third shift (28%, 16%). This is a mature workforce with 42% of the employees having worked at this facility for more than 20 years, 11% between 11 and 20 years, 21% between 5 and 10 years and only 26% have been there less than 5 years. The highest educational degree attained by 58% of the sample is high school, 21% have some college, 11% have college degrees, with the remaining holding technical degrees.

Variable Measures

This study assesses the impact of three variables on employee work effort. All four variables were measured with well-established scales used in previous studies. All items were measured on a 7-point scale (1 = strongly disagree and 7 = strongly agree), with higher values indicating a higher level of the construct. Scale items may be found in Table 3.

The dependent variable, work effort was measured using a three-item scale developed by Brockner, Tyler, and Cooper-Schneider (1992). Intrinsic motivation was assessed using a 14-item scale developed by Amabile et al. (1994). LOC was measured with six items from Levenson (1974). The 6-item procedural justice scale was developed by Welbourne et al. (1995) to specifically assess the general rules and administration of a gainsharing plan. Items were randomized on two separate versions of the survey to minimize order response bias.

We used EQS 6.1 to conduct confirmatory factor analysis to determine the reliability of the measures used in this study. We use this approach to assess whether the measurement model fits the data and to assess the reliability of constructs of the measurement instrument (Anderson & Gerbing, 1988; Campbell & Fiske, 1959). One item from the LOC scale and two items from the intrinsic motivation scale did not load well onto their respective factors. Analysis of inter-item correlations within each scale confirmed this

Table 3. Measurement Model.

Latent Variable	Standardized Factor Loading
Procedural justice	Alpha = 0.90
1. The design of the gainsharing plan seems fair	0.82
2. The gainsharing plan formula is fair to all employees	0.86
3. The gainsharing plan is administered fairly	0.87
4. The rules used for sharing the gainsharing bonus with all employees are fair	0.80
5. When determining whether a gainsharing bonus will be paid, the company uses accurate information about the department's performance	0.72
6. The performance level required to receive a gainsharing bonus is clear to me	0.57
Locus of control	Alpha = 0.62
1. When I get what I want, its usually because I am lucky (REV)	*
2. When I make plans, I am almost certain to make them work	0.60
3. I can pretty much determine what will happen in my life	0.33
4. I am usually able to protect my personal interests	0.63
5. Whether or not I get to be a leader depends mostly on my ability	0.46
6. I have often found that what is going to happen will happen	0.53
7. My life is determined by own actions	0.26
Intrinsic motivation	Alpha = 0.81
1. The more difficult the problem, the more I enjoy trying to solve it	0.41
2. I want my work to provide me with opportunities for increasing my knowledge and skills	0.56
3. I prefer to figure things out for myself	0.37
4. No matter what the outcome of a project, I am satisfied if I feel I gained a new experience	0.46
5. I enjoy relatively simple, straightforward tasks (REV)	*
6. Curiosity is the driving force behind much of what I do	0.34

Table 3. (Continued)

Latent Variable	Standardized Factor Loading
7. I enjoy tackling problems that are completely new to me	0.59
8. I prefer work I know I can do well over work that stretches my abilities (REV)	*
9. I'm more comfortable when I can set my own goals	0.53
10. It is important for me to be able to do what I most enjoy	0.55
11. I enjoy doing work that is so absorbing that I forget about everything else	0.15
12. I enjoy trying to solve complex problems	0.57
13. It is important for me to have an outlet for self-expression	0.57
14. I want to find out how good I really can be at my work	0.63
15. What matters most to me is enjoying what I do	0.48
Work effort	Alpha = 0.66
1. I intentionally expend a great deal of effort in carrying out my job	0.72
2. I try to work as hard as possible	0.69
3. The quality of my work performance is top-notch	0.50

Note: This table reports the results of maximum likelihood estimation of the measurement model for the latent variables used in Fig. 2.

*Items are omitted from the final measurement model.

result. All three items were reversed scored items and were eliminated from the final measurement model based on research suggesting that negatively worded items can introduce a systematic bias and tend to separate onto a different factor (Barnette, 2000; Horan, DiStefano, & Motl, 2003). All standardized factor loadings for the remaining indicator variables were significant at the 0.01 level. This finding supports the convergent validity of the remaining indicators (Anderson & Gerbing, 1988). Table 3 presents all items along with the reliability characteristics of each construct, including standardized coefficients and Cronbach alpha scores. Internal consistency reliability was assessed by examination of Cronbach alpha scores (Cronbach, 1951; DeVellis, 1991) and range from 0.62 to 0.90. The analysis indicates that all four constructs are separate and distinct.

Table 4. Descriptive Statistics and Pearson Correlations among Study Variables Cronbach Alpha Statistics on the Diagonal in Bold ($N = 310$).

	Variable	Mean	S.D.	PJ	LOC	MOT	EFF
PJ	Procedural Justice	3.92	1.64	0.90			
LOC	Locus of control	5.08	0.88	0.29**	0.62		
MOT	Intrinsic motivation	5.26	0.78	0.13*	0.34**	0.81	
EFF	Effort	6.16	0.81	0.14*	0.38**	0.44**	0.66

* $p < 0.05$

** $p < 0.01$

The Pearson correlations for all pairs of variables are shown in Table 4. All pairs of variables are significantly correlated at the < 0.001 level except for two relationships between procedural justice and intrinsic motivation ($r = 0.13$; $p < 0.05$), and procedural justice and work effort ($r = 0.14$; $p < 0.05$). The diagonal of the matrix contains the Cronbach alpha scores for each latent construct and shows the internal consistency or reliability. In order to further demonstrate that all variables are distinct constructs, the correlation coefficients within a column should be less than the coefficient alphas found in the diagonal (Churchill, 1979). Since the Cronbach alphas exceed the inter-item correlations in all cases, we conclude that all variables are distinct constructs.

RESULTS

We estimate the model depicted in Fig. 2 using structural equation modeling (SEM) software, EQS 6.1. The measurement model and the structural model are jointly estimated using maximum likelihood estimation. A review of kurtosis and skewness reveals that all indicator variables are well below the thresholds recommended by Kline (1998), indicating univariate normality. Multivariate normality is necessary for maximum likelihood estimation of SEM and is assessed with Mardia’s normalized estimate which is also below the recommended threshold (Kline, 1998). We conclude that the data are both univariate and multivariate normal. We reviewed the variance inflation factors and tolerance levels and found no evidence of multicollinearity.

In Table 5, we report the results of the SEM analysis testing the hypotheses. The model is evaluated using the Chi-square divided by the model degrees of freedom (CMINDF), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). The CMINDF ratio is

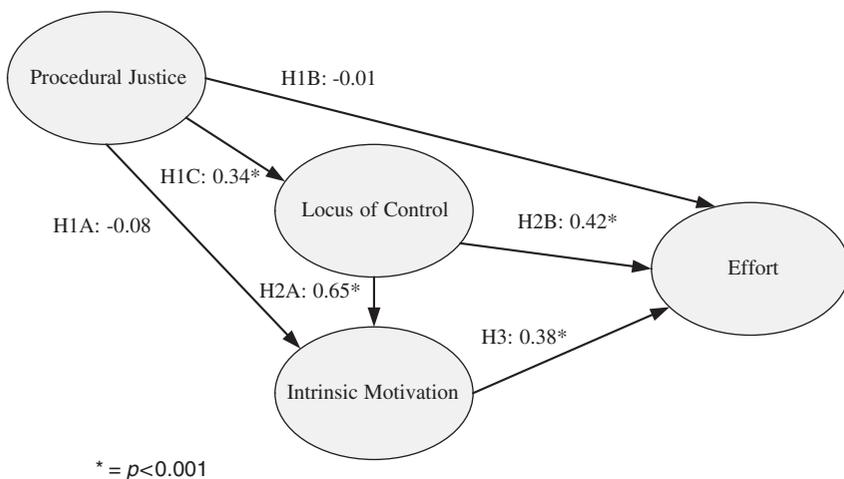


Fig. 2. Hypothesized Model.

Table 5. Results of Structural Model Analysis Hypotheses, Standardized Coefficients and Fit Indices.

Dependent Variable	Independent Variable	Hypothesis	Hypothesized Direction	Standardized Coefficient
MOT	PJ	H1A	+	-0.08
EFF	PJ	H1B	+	-0.01
LOC	PJ	H1C	+	0.34*
MOT	LOC	H2A	+	0.65*
EFF	LOC	H2B	+	0.42*
EFF	MOT	H3	+	0.38*
<i>Model fit statistics</i>				
χ^2	594			
DF	340			
CMINDF	1.747			
RMSEA	0.049			
CFI	0.91			

Note: This table reports the results of maximum likelihood estimation of the structural equation model depicted in Fig. 2 and provides evidence on H1A through H3.

*Significance of the p -value at < 0.001 for one-tailed tests for the standardized coefficients.

1.747, which is below the standard of five or less, suggested by [Wheaton et al. \(1977\)](#). The CFI index compares the independence and hypothesized models, adjusting for sample size. This model's CFI is 0.91 and indicates a reasonably well-fitted model according to [Hu and Bentler's \(1999\)](#) recommendation that CFI be greater than 0.90. When evaluating the RMSEA, values close to zero are desirable. This model's RMSEA is 0.049 is below the standard of 0.08 recommended by [Browne and Kudeck \(1993\)](#). All of these measures indicate the model provides a good fit to the data.

The standardized path coefficients reported in [Table 5](#) provide evidence on hypotheses 1 through 3. We find support for H1C, H2A, H2B and H3. Higher perceived levels of procedural justice are associated with employees having higher levels of LOC (internals), which in turn is associated with higher levels of intrinsic motivation and work effort. Employees with lower levels of LOC (externals), who perceive lower levels of procedural justice, are less intrinsically motivated and are associated with lower levels of work effort. Hypotheses H1A and H1B are not supported, indicating that perceived levels of procedural justice has no significant direct effect on intrinsic motivation or work effort. We conclude that employee perceptions of procedural justice as it pertains to the gainsharing program positively affect employee work effort, moderated by the degree of LOC and intrinsic motivation experienced by the employee.

DISCUSSION

This study investigates how procedural justice, LOC, and intrinsic motivation affect employees' work effort. Because the company in this study is in a turnaround situation, the principals need full cooperation and a strong work effort from its employees to save the company from closing its doors. The principals implemented a gainsharing plan as a means to foster a culture of teamwork. We find that LOC mediates the association between favorable perceptions of fairness concerning the procedures of JRM's gainsharing program and are positively associated with employees' intrinsic motivation and work effort. Prior research has found direct effects between procedural justice and employee outcomes. We find, however, no such direct effects. This is a significant finding because it introduces a personality variable (LOC) and further defines the mechanism through which perceptions influence effort (intrinsic motivation).

The plan structure itself generates uncertainties that may influence internals versus externals differently. JRM, Inc. developed their own gainsharing

plan and modified its elements as the gainsharing team or owners felt it necessary. It is similar to the three common plans described earlier (Scanlon, Ruckers, Improshare) in that it is not a permanent fixed incentive commitment but is paid out of a share of future gains. It deviates from these plans with respect to three key areas. First, the payouts are monthly which descriptive literature indicates is too short term and may lead to myopic decision making. This is mirrored by many comments from employees indicating that if the numbers fell off early in the month, there was no way to recover by the end of the month and they lost their motivation because the race was already lost. The more frequent the payout, the more likely that there are more situations beyond the employees' control. A longer time period, such as quarterly or annually, would allow an opportunity to make up the losses. The second deviation concerns the selection of performance metrics. The plan is structured to highlight key operating areas as needed and this may mean measurements are added or subtracted at any point. Feedback from the employees indicated that sometimes this is confusing and they do not always know how they can impact the new measures. The third way, in which JRM's plan deviates from the norm, is that new targets are selected each month based on past performance and current economic need.

These peculiarities in payout frequency, measurement choice and varying targets may exert more influence over externals. Whereas internals have a greater confidence in their own abilities, externals may perceive that the uncertainties generated by the plan administration are beyond their control and, therefore, feel that success is most likely beyond their reach, reducing their motivation and effort.

This study extends the current research by examining how LOC mediates the association between favorable perceptions of fairness concerning a gainsharing program and how it is positively associated with intrinsic motivation and work effort.

LIMITATIONS AND FUTURE DIRECTIONS

This study's findings are only applicable to this company and may not be generalized to any other firms. This is primarily due to the tailored nature of the plan and the change environment within which it was implemented. Another limitation is that all the variables are reported by the individual employee and, therefore, are subject to same source bias. Since this study is examining the effects of employee perceptions on the employee's motivation and effort, the implications of this bias are most likely minimal.

Significant influences on the findings of this study are the variations and frequent changes to the gainsharing measurements and targets. JRM established a flexible system that has the ability to change targets and payouts according to economic and customer needs. However, the frequent payouts and frequent changes may adversely affect employee outcomes. The results in this study reflect the joint effects of many plan variations. Future research examining the individual effects of these changes (e.g. payout frequency, amount, levels and gates) may begin to partition out the impacts of these plan elements.

This study finds that internals are positively motivated by their perceptions of fairness. Further investigation into factors that influence externals would contribute to providing a more complete context. For example, are externals more motivated when they perceive higher levels of distributive justice? Another study might examine how the perceived fairness of gainsharing plans might affect employees' organizational citizenship behavior in relation to their intrinsic motivation and work effort. Because companies often undergo major organizational changes (e.g. new owners, new incentive plans, layoffs), employees may find it difficult to trust new management. A future study could examine the effects of trust in management on employee's intrinsic motivation and work effort. Additionally, future research would benefit from asking whether there is a relationship between trust in management and LOC. Would employees with an internal LOC orientation inherently be more likely to trust management than those with an external LOC orientation? Efforts in these areas would further our research on LOC's effects on intrinsic motivation and work effort.

NOTES

1. Revolution was added as a key result area in January 2005. This area's focus is to create alternative materials, products and services with outside resources and grants.

2. If an employee misses one day during the month, he/she is still eligible for a payout as long as the overall plant gate of 50 occurrences is met. If, however, an employee incurs 2 days during the month or comes into the month with 2 occurrences on the books, he is individually ineligible even if the plant gate is met and performance targets are met. The employee can, however, earn back the privilege through good attendance. One month of good attendance (no occurrences) subtracts one-half day from his record, resulting in 1.5 days on record, making the employee eligible the next month. The gainsharing team felt strongly that the attendance gate needed to be maintained in order to send the message that work ethic counts. There were three months during the fall of 2004 when the attendance gate was not met. As

we walked through the plant, it was evident that each area had developed their own attendance chart for their area in order to apply pressure to their peers and make them accountable for their attendance.

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UNDERSTANDING THE DRIVERS OF CORPORATE PERFORMANCE AND CUSTOMER VALUE

Angela Paladino

ABSTRACT

While research has examined the resource-based view (RBV) and market orientation (MO) individually, none has evaluated and compared their effect on performance in one study. Furthermore, while empirical work has been conducted between MO and organizational learning (OL), comparatively less research has evaluated the relationship between OL and the RBV. This paper establishes MO and the RBV as distinct strategies that influence performance. Data were collected from 248 service and manufacturing firms. Findings show that OL is strongly associated with MO, which in turn impact performance outcomes including customer value. The RBV had a significant relationship with new product success. This study has enabled us to examine the relationships between MO, the RBV and performance in various business conditions, including market and technological turbulence. Theoretical and managerial implications are also discussed providing an impetus for further research.

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INTRODUCTION

The notion of achieving a sustainable competitive advantage (SCA) has received a great deal of attention in the literature. While a number of theories have been used to explain the basis for superior performance, two have received notable attention: the resource-based view (RBV) in the management literature and market orientation (MO) in the marketing literature.

Supporters of the RBV emphasize the importance of exploiting firm resources to achieve an advantage in the marketplace. In marketing, proponents of MO emphasize the importance of customer value. Many have encouraged cross-fertilisation between fields of strategy and marketing (Henderson & Cockburn, 1994; Noble, Sinha, & Ajith, 2002), yet minimal progress has taken place. Two essential criteria are required to attain a favourable position in the marketplace: (a) perceived customer value and (b) uniqueness (Ulrich & Lake, 1991). Notably, both are fundamentally related to the RBV and MO, whereby MO is focused on the provision of customer value and the RBV towards an accumulation of unique resource bundles.

The RBV addresses how a firm's resources drive its performance in a dynamic competitive environment (Collis & Montgomery, 1995), allowing companies to assess their internal requirements relative to the external environment (primarily competitors) to determine those resources of strategic importance. The ultimate objective is to create persistent above-normal returns and superior (resource) value to the firm by developing and deploying unique and costly to imitate resource bundles to exploit environmental opportunities or neutralize threats (Peteraf, 1993). In contrast, the ultimate objective of the market-oriented firm is to create superior value for the customer (Kohli & Jaworski, 1990; Narver & Slater, 1990).

The relationship between MO, the RBV and various facets of short- and long-term performance has not previously been examined in one piece of research. It is arguable that each orientation could be appropriately applied to organizations to yield superior performance. Performance is a multi-dimensional construct that is reflected in a number of firm outcomes and daily operations (Combs & Ketchen, 1999). Thus, a number of performance outcomes are assessed in this paper to evaluate if and how RO and MO drive value and diverse elements of performance.

THE RESOURCE-BASED VIEW

The RBV aims to clarify how a firm's resources drive its performance in a dynamic competitive environment (Collis & Montgomery, 1995). It

combines *internal* corporate analysis with *external* environmental analysis, allowing managers to understand and analyse why some companies are superior to others. Unlike MO, the RBV is primarily internally oriented, in that its focus lies with the development and deployment of unique firm resources. It is concerned with accumulating a unique resource base that is immobile and heterogeneous (Barney, 1991). Hence, firms devote efforts to generating a resource base that will be difficult and costly, if not impossible, to imitate. It then uses this resource base to exploit any opportunities or neutralize any threats that arise in the external environment.

While economists have traditionally cited the RBV as an economic theory of the firm, this view, like MO, may also be classified as a strategic orientation that managers may apply to their firms to achieve superior performance. Management theorists have recently classified the RBV as a strategy in its own right, referring to it as the resource-based theory of strategy, resource-based strategic management or the RBV of strategy (e.g., Grant, 1991). Others have recognised the theory's 'considerable potential' for extension into strategic and management issues (Mowery, Oxley, & Silverman, 1998).

The RBV satisfies all of the components of 'strategy' as advocated by researchers including Grant (1991). Collis (1991) provides partial support for this contention, proposing that core competencies provide a 'guiding vision for strategy,' enabling a company to identify and develop its valuable resources. It contributes to corporate strategy by assisting companies to identify any pertinent business interrelationships (Hitt, Ireland, & Hoskisson, 1995; Barney & Zajac, 1994).

The RBV satisfies key characteristics of strategy. These include the fact that the RBV is a long-term view and that it requires an understanding of the external environment in order to apply and leverage its resources. Management strategic choices are made on the basis of the key resources and the characteristics that underpin them (e.g., value, inimitability and so forth). Strategy in this perspective is ultimately viewed as a continuing search for (Ricardian) rents and rent sustainability (Collis, 1991; Grant, 1991). Strategy must achieve a fit with three main external factors: customers, competitors and technology. A firm will be able to effectively implement its strategies and achieve environmental fit by optimally using their internal resources (Itami & Roehl, 1987). Some have demonstrated that the RBV is able to be applied to firm strategy and form the basis for strategy formulation (e.g., Grant, 1991). It is also a long-term perspective, assisting management in formulating mission statements and organizational goals.

While considerable progress has been made in the literature to measure facets of the RBV including dynamic capabilities, it still has not progressed

to allow researchers to provide an assessment of whether their focus on the accumulation of unique resource bundles are driving performance. Because of the difficulty of assessing whether company behaviours were consistent with the tenets of the RBV, a scale was devised to enable us to determine this. This scale was termed 'resource orientation' (RO) to reflect the extent to which a firm is oriented towards the development of valuable and unique resource bundles within the firm. Thus, RO describes the degree to which a firm practices an RBV. A comprehensive literature review was conducted to determine the factors that comprised the RBV. These included synergy, uniqueness and dynamism. These were used in the construction of the RO scale briefly described later.

MARKET ORIENTATION

MO is defined as "the organizational culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and thus, continuous superior performance for the business" (Narver & Slater, 1990, p. 21). It is a MO that will guide the daily behaviors of individuals performing their jobs (Lichtenthal & Wilson, 1992).

MO permeates the organization, impacting all business activities and managers' strategic thinking. Many researchers are increasingly referring to MO as a strategy, recognizing the impact that its pursuit has on a firm's long-term decision-making strategies (Greenley, 1995). MO encompasses the behaviours of the firm, in addition to this shared mindset. Griffiths and Grover (1998) are among the few researchers that recognize that MO comprises both a cultural and behavioural dimension (cf. Narver & Slater, 1990; Jaworski & Kohli, 1993).

MO may be characterized as a philosophy held by management, an externally oriented culture or a concept (Bremser & Dalgic, 1998). Moreover, MO is described as a set of both actions and culture that permeates the firm (Varadarajan & Jayachandran, 1999, p. 134). Hence, the value of MO is not limited to it being a firm resource, but encompasses a set of beliefs and behaviours that shape the organization and its goals. On a similar note, research has increasingly acknowledged how the relationship between MO behaviour and performance forms a part of the business strategy-performance system and that competitive strategy is a key organizing focus for MO (Ruekert, 1992). This suggests that it is increasingly becoming acceptable to classify MO as a distinct firm strategy.

Comparing the RBV and MO

It is arguable that firms pursuing an RBV leverage their resources in search of an appropriate market. The primary focus rests with the *internal* environment, followed by an evaluation of how the external environment fits. Hence, analysis *begins internally and progresses outwards* towards the market. In contrast, a firm adhering to MO commences with an examination of customer needs and then seeks to develop the resources required to serve this market. The focus rests with the *external* environment, followed by the internal environment. Hence, analysis *begins externally and progresses inwards* towards the firm. Recent research has also recognised this.

Internally focused firms are 'most likely to gauge the strength of their position,' whereas externally focused firms rely on the market for standards to attain (Day, 1994). As a result, these firms often compare costs with a few key competitors, at the risk of neglecting to seek opportunities providing scope to better serve their customers and imitate their competitors. These firms are also in danger of overlooking important competitive forces until it is too late to seek redress.

The dominant starting point is expected to lead to different outcomes. Market-oriented firms might provide products and services to customers they are ill equipped to serve. This is often the case with consulting firms eager to take on board new clients without properly examining their capabilities (resource requirements). This results in the firm unable to provide clients with any valuable outcome (Kesner & Foulter, 1997). Thus, they may often be aware of what is needed to succeed, but may be unable to create or deliver competitive customer solutions (Ghingold & Johnson, 1998).

In contrast, resource-based firms, may miss major changes in the marketplace that would require the development of new capabilities. Alternatively, firms may create assets that add little value to the company's market strength (Verdin & Williamson, 1994). Thus, without an external emphasis, firms may not have the ability to effectively communicate with customers and be able to build necessary relationships (Ghingold & Johnson, 1998).

The literature demonstrates how MO focuses on the customer, competitors and functions of the firm as three distinct influences on a firm's performance (Narver & Slater, 1990), yet does not explicitly address the issue of firm resources. Rather, these are taken for granted. The RBV on the other hand, views a firm's resources and the competitive environment as the primary influences on its performance (Collis & Montgomery, 1995). Unlike an MO, this approach is not specifically concerned with the customer. Rather the customer is taken for granted.

ORGANIZATIONAL LEARNING

OL is comprised of four distinct yet related constructs of team orientation, systems orientation, learning orientation (LO) and memory orientation (Hult & Ferrell, 1997; Sinkula, 1994). This process requires management to continuously question practices and share their knowledge within the corporation to ensure learning pervades all decisions and becomes embedded in decision rules (Day, 1994). It is those firms that continuously experiment, engage in risk taking and change their practices to reflect new ideals that are truly capable of learning.

Continuous changes are taking place in the market place, forcing management to change and adapt (Belohlav, 1996). Three crucial areas warrant attention by corporations wishing to pursue learning, including value (provided to customers through goods and services); continuous renewal (of company operations and processes) and distinct resources (Belohlav, 1996). This requires the company to engage in continuous experimentation and learning from past experience (Webster, 1994; Day, 1994). This may often require a company to engage in resource recombinations to keep in line with environmental shifts and company changes as a result of past experience (Day, 1994).

Organizations that engage in learning not only recognize and exploit opportunities, but in time, are also capable of creating new opportunities (Belohlav, 1996, p. 16). A firm which is able to *control* the market place through its resources would be ideally equipped to do this. Learning is manifest in the knowledge, experience and information of an organization (Mahoney, 1995; Hooley et al., 1999). It is of utmost importance that a firm learns in order to be able to acquire and develop new and relevant knowledge and skills. This will help an entity to not only keep up with competitors, but stay ahead of them. In fact, learning faster than competitors is probably the only way to gain an SCA (Dickson, 1996). This will also entail listening more closely to customer complaints in an effort to revitalize areas of the company that require attention. Hence, OL is evidently related to elements of both the RBV and MO.

HYPOTHESES

As a result of the different starting points of analysis, we expect a number of different outcomes to emanate. For example, the focus of MO seems to be on customer analysis, followed by competitors and then the company. Hence, it is likely that MO will be most strongly associated with customer

outcomes, such as customer value more than financial outcomes. Similarly, the RBV is strongly associated with internal processes and systems. Thus, this would be most strongly associated with dynamic outcomes, such as new product success as compared to customer outcomes.

It is proposed that both RO and MO are influenced by OL. Organizational learning has a major influence on a firm's value systems and behaviours that form (e.g., Sinkula, Baker, & Noordewier, 1997).

OL and RO

Only recently have a handful of studies been conducted to examine the relationship between an RO (through an analysis of capabilities) and OL (Hunt & Morgan, 1995).

OL is described as routine based and history dependent, emphasizing the notion of corporations 'learning by doing' (Mahoney, 1995). Learning is intrinsic in an RO as it is this "process that allows a continuous adaptation of firm-specific [resources] in the light of experiences and further information" (Chiesa & Barbeschi, 1994, p. 299).

Learning comprises both internal (doing, using and failing) and external activities (learning from competitors, customers and so forth) (Chiesa & Barbeschi, 1994). An RO views firms that continually improve their capabilities through their experience as being able to learn. Such firms question how resources can be acquired and developed. They look to and question the validity of past experiences, procedures and policies to do so. Learning may also compel many firms to forget (or 'unlearn') irrelevant routines and skills (Slater & Narver, 1995).

Furthermore, OL is seen to assist a firm in accumulating its base of resources (Mahoney, 1995). Companies continuously seek to build their resources by learning how to acquire, process, store and retrieve information. Hence, they effectively 'learn to learn' and 'learn to unlearn', discarding resources no longer valuable to the organization or inhibiting further development.

Inter-firm collaboration overcomes some of these inhibiting factors, allowing firms to engage in external projects and reconsider organizational processes and strategies. This external collaboration is an effective mechanism through which to stimulate learning (Dodgson, 1993). It is also strongly related to the need for a firm to adopt an external orientation in unison with an internal position in order for it to be able to continually respond to the rapidly changing environment and anticipate future opportunities that may arise.

Thus in this respect, OL arguably acts as an antecedent of an RO. More specifically, it is proposed that the greater the degree of organizational learning a firm adopts, the greater will be the relationship between an RO and performance. Hence:

H1. The greater the OL, the higher the RO.

OL and MO

Considerably more research has examined the relationship between MO and OL (Slater & Narver, 1995; Sinkula et al., 1997). A number of characteristics distinguish learning processes which are almost analogous to a number of aspects of MO (Day, 1994). These include, open minded inquiry (whereby decisions are made from the market-back), widespread information distribution, mutually informed mental modes and an accessible memory of what has been learnt. Most important however, is that a company act on the information received and then evaluates outcomes. This again prompts further learning to take place and a cyclical process to continue (Sinkula et al., 1997). These aspects are all strongly associated with inter-functional coordination – a key mechanism that allows a firm to operationalize an MO.

OL is argued to influence market-oriented thought processes and related behaviours, whereby a strong LO is needed to engender the type of MO processes required to allow a firm to develop an SCA (Sinkula, et al., 1997). Recent research suggests that information acquisition takes place from organizational experiences or memory, providing further support that OL acts as an antecedent of MO and not vice versa (Slater & Narver, 1995). Thus in this respect, OL is arguably most influential as an antecedent of MO.

H2. The greater the OL, the higher the MO.

Performance is a multidimensional construct. One of the common criticisms of MO and RO research is that the effects of these variables is often limited to financial performance (e.g., Henderson & Cockburn, 1994; Jaworski & Kohli, 1993), with limited consideration of environmental conditions. While many have often limited the assessment of performance to financial outcomes, it is only recently that researchers have recognized that customer outcomes are just as valuable as indicators of performance. Financial outcomes are often reported for key stakeholders of the organization such as shareholders, while recent research has recognized that customers have also evolved into significant stakeholders. As a result, this study takes into

account the role of these stakeholders. Here, MO and RO are posited to have an impact on a number of outcomes. These variables are listed in Fig. 1. These relationships are hypothesized to be moderated by the external environment, represented by technological turbulence, market turbulence and competitive intensity.

The literature has indicated that formidable relationships exist between RO and performance (e.g., Sharma & Vredenburg, 1998) and between MO and performance (Kohli & Jaworski, 1990; Jaworski & Kohli, 1993; Narver & Slater, 1990; Slater & Narver, 1995). A mix of financial measures has been used to assess performance, ranging from sales growth to market share. It is argued that the RBV will enable a firm to accumulate unique bundles of resources that are difficult to replicate by competitors that enable them to increase sales, profitability and in the long term, market share. Consistent with the extant literature, a number of financial indicators are applied in this study.

Overall performance measures are used to assess a firm’s general perception of its *relative* performance. While some research has shown a positive relationship between MO and overall performance (Slater & Narver, 1995), other literature has demonstrated that a negative or negligible relationship exists (e.g., Han, Kim, & Srivastava, 1998). While there is no

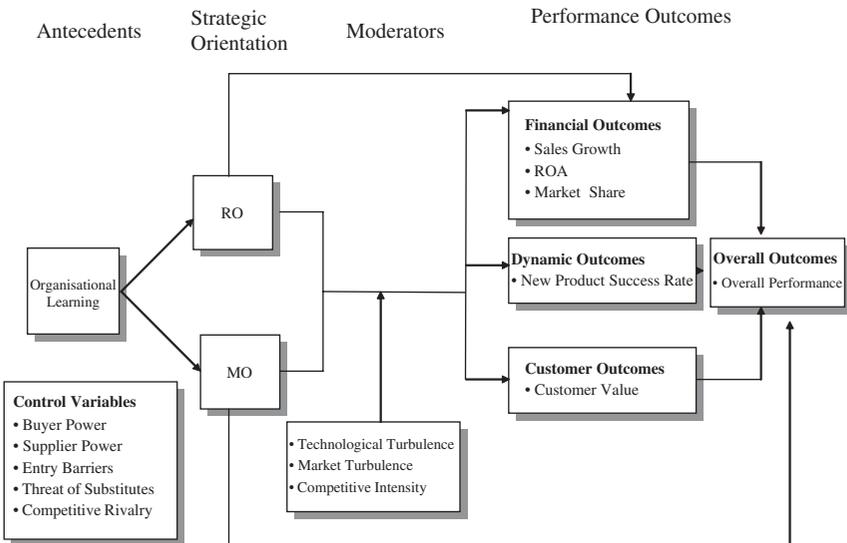


Fig. 1. The Relationship between OL, RO, MO and Performance.

empirical support for such a relationship for RO, theory suggests that a positive relationship between RO and overall performance should ensue (e.g., Barney, 1991; Henderson & Cockburn, 1994; Sharma & Vredenburg, 1998).

H3. The greater the RO, the greater (a) sales growth, (b) the ROA, (c) market share and (d) overall firm performance.

H4. The greater the MO, the greater the (a) sales growth, (b) ROA, (c) market share and (d) overall firm performance.

Recent research suggests MO leads to new product success through successful innovation. Each component of MO may impact innovation. For example, firms who focus strongly on their customers may be able to learn from their customers, hence enabling them to anticipate customer latent needs and devise truly innovative offerings on a continuous basis (Han, Kim, & Srivastava, 1998). Hence, while MO is anticipated to lead to innovative offerings to the marketplace, we would anticipate that it would only indirectly lead to new product success through customer value.

Customers are not always the key to innovation. Firms occasionally need to *lead* customers to recognize their (latent) needs. This is illustrated through a number of innovative products that have been presented to the market such as the Sony Walkman or a CD player. According to RO, *innovations refer to new combinations of existing resources and skills*. As a result, they may often impede as well as augment a firm's innovations. To facilitate innovation, the firm must be able to create dynamic routines, foster collective learning and transfer information and skills within the organization. The control of such resources will augment the firm's propensity to innovate. In addition, these resources need to embody the necessary resource attributes such as complexity and tacitness to augment the attractiveness of the innovation (Grant, 1991).

Firms should be able to leverage their resources to fully exploit opportunities that present themselves in the marketplace and influence the market context in which it competes through innovation. Research analysing the relationship between the RO and innovations is notably scarce. While firms may not be able to sustain superior profits from one innovation, they are however able to use their abilities and resources to continually innovate. Similarly, superior firm resources may also translate into new product success, as these superior resources enable firms to attain more market power and thus competitive advantage in the market (Gatignon & Xuereb,

1997). As such, firms are able to dedicate many resources to innovation design and implementation. Hence:

H5. MO is not directly related to the new product success achieved by the firm.

H6. The greater the RO, the greater level of new product success achieved by the firm.

While customer value has been widely researched in the marketing literature, research has not examined its relationship with the RBV. “*Customer value* is a customer’s perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer’s goals and purposes in use situations” (Woodruff, 1997, p. 142).

MO is driven by the need to provide customers with value. All employees should be motivated to provide customers with value and must be able to create and deliver procedures that provide value. For example establishing close relationships with customers and instituting faster response times (Day, 1994). Customer value will only be created when a firm is able to fully exploit and leverage its critical resources. This has implications for RO. A firm exists primarily to provide customers with a product/service, as customers cannot satisfy all of their needs in an effective and efficient manner (Slater, 1997). Hence, firms need to establish resources that are required to both understand these customer requirements and deliver the promised value. “Firms with a customer value that is complemented by appropriate resources and capabilities are best positioned to attract the capital necessary for the expansion of scale or scope of activities” (Slater, 1997, p. 164). This however assumes that customer value already exists.

“The key to successful competition is to select market[s] ... where the company’s skills and resources will deliver the highest value to customers compared with competitors” (Webster, 1994, p. 84). The value of such a strategy increases if competitors find it difficult to emulate distinct offerings as a result of inadequate funds, the absence of human resources or inadequate technology. RO stresses the importance of a firm being comprised of unique resource bundles that both identify the company and allow it to achieve superior performance. In order to preserve customer outcomes, a company must continually invest in its resource base and dispose of resources that are no longer valuable. The provision of customer value is not the firm’s primary objective when pursuing an RO. As such, we would not expect that customer value would be a direct outcome of RO.

H7. RO will have no significant relationship with customer value.

H8. The greater the MO, the greater the customer value.

Moderators

Moderators impact either the form and/or strength of the relationship between a predictor or independent variable and a criterion or dependent variable and constitute elements over which management has limited or no control.

Technology refers to “the process of transforming inputs to outputs and the delivery of those outputs to the customer” (Kohli & Jaworski, 1990, p. 48). MO is not pertinent in *technologically turbulent* settings, as most research and development will be responsible for major innovations that occur outside the industry. However, when technological innovations enable a firm to attain a competitive advantage, the importance of MO diminishes. Instead, a company needs to focus on the development of its resources and apply them to the market place to be able to produce innovations and/or leverage its resources in the search of a competitive edge. These specific issues have not been dealt with previously in the RBV literature outside of the ‘environmental turbulence’ generalization used.

Market turbulence “represents the changes in composition of customers and their preferences” (Slater & Narver, 1995). In a stable environment, customer preferences are unlikely to change significantly, hence simplifying the task of customer needs and preference assessment. In times of high market turbulence management needs to be particularly responsive to change and customer preferences. Rapid changes in customer requirements are likely to necessitate increased cooperation between departments of the firm. This will enable it to respond to these changes in a timely manner. It is at this time that a superior degree of MO is highly desirable.

Market turbulence will allow a company to avoid the establishment of routines and predictability that would otherwise impede it from change in the future. In addition, a company’s unique resource base will enable it to be responsive to change (Grant, 1998). Many resource bundles, especially those related to knowledge, are flexible and dynamic, allowing companies to fully exploit the applicability and robustness of their resource base in a number of settings.

Competitive intensity refers to the degree of competition between competitors in the marketplace. When competition is high and consumers have a number of alternatives to choose from, MO becomes pertinent (Greenley,

1995). As companies compete for new consumers and fight to maintain their existing clientele, MO is expected to become increasingly germane. The greater this competition and eagerness to meet customer needs, the more market-oriented a company will need to become.

Resources will also become the centre of attention as corporations compete for unique resources that may be better able to provide value to both the firm and the customer. Thus, the importance lies with a focus on firm capabilities and resources, in addition to competitor actions to minimize the likelihood of competitors being able to satisfy customers. Hence:

H9. The greater the (a) technological turbulence, (b) market turbulence, (c) competitor intensity, the greater the relationship between MO and performance.

H10. The greater the (a) market turbulence, (b) competitor intensity, the stronger the relationship between RO and performance.

H11. The greater the technological turbulence, the weaker the relationship between RO and performance.

METHOD

The business unit level of analysis was used to ensure consistency with previous research (Narver & Slater, 1990; Henderson & Cockburn, 1994). Data were collected in two phases: quantitative pretests and survey administration. The pilot tests were conducted to evaluate the new RO scale developed.

Pilot Tests

The RO scale was developed from a behavioural perspective, measuring what organizations actually do with regard to developing and deploying resource bundles. This is the first attempt to develop a comprehensive scale of RO. Drawing upon the literature, 43 items were developed that reflected the important determinants of unique and valuable resource bundles. An introductory paragraph providing resource classifications and definitions was included in the scale to help respondents understand the extent and variety of resources. The survey was pretested with a sample of 101 middle-level executives undertaking an MBA. Based on feedback, as well as exploratory factor analysis, the RO scale was revised. A second pretest, comprising 105 executives, was conducted to further test and purify the RO scale.

The results of an exploratory factor analysis yielded 21 items displaying convergent and discriminant validity. The retained factors were uniqueness, synergy, and dynamism. All retained items had factor loadings above 0.40, as recommended by Hair, Anderson, Tatham, and Black (1998), with 71.4% above 0.70. All factors also indicated an acceptable level of reliability, with all exceeding an alpha level of 0.78.

Survey

A multiple-item survey measure was administered to a sample of 500 top performing service and manufacturing companies (in terms of revenue). Data for the final survey were collected from 248 senior executive informants all aged above 37 years. An effective response rate of 46.9% was achieved. Armstrong and Overton's (1977) procedure of comparing early versus late respondents was employed to assess non-response bias. Results indicated that there was no non-response bias.

Measurement & Analysis

A 5-point Likert-type scale format was used to measure executive assessments of each item. All scales used were derived from previously established measures, with the exception of the RO scale that was developed specifically for this research. Preliminary statistical analyses and CFA analysis indicated that this measure was statistically sound.

Correlation analysis and multiple regression were used to assess the various assumptions of linearity, additivity, model specification, multicollinearity and homoscedasticity (Berry & Feldman, 1985). LISREL was employed to determine the relationships between OL, RO, MO and the various performance indicators. Data were screened for missing data and outliers. Barlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) results indicated that factor analysis was an appropriate technique for analysing the correlation matrices. All constructs were subject to EFA (Tabachnick & Fidell, 1996). Results supported both discriminant and convergent validity for all constructs. To assess the dimensionality, reliability and discriminant validity of the measurement model, the measures were subject to a further purification process as advised by Bagozzi and Yi (1988). One measurement model encompassing all elements of the model could not be used as this violated the recommendation advised by Bentler and Chou (1987) that a five-to-one ratio of sample size to free parameters should be followed to yield appropriate significance tests.

Two measurement models were evaluated prior to the structural model to purify the scales and prevent misspecification in measurement tools (Pillai, Schriesheim, & Williams, 1999). The measures were divided into two subsets of theoretically related variables: the independent and outcome variables and then the control and moderator variables (Moorman & Miner, 1997). The results indicate that the models fit well with the fit indices yielding acceptable results. Results indicate the number of items used, together with the variables being examined, the *t*-values associated with each variable, the parameter estimates and reliability statistics, as indicated by Cronbach's alpha were reflective of acceptable fit.

Individual item reliability, composite reliability and the average variance extracted were calculated (Fornell & Larcker, 1981; Bagozzi & Yi, 1988). The composite reliability of each scale and measurement model ranged between 0.61 and 0.98. This exceeds the 0.60 threshold for acceptable reliability as recommended by Fornell and Larcker (1981). This provides further evidence that the measures used are internally consistent and exhibit satisfactory reliabilities. The average variance extracted results ranged between 0.47 and 0.90. All results yielded approached or exceeded the 0.50 recommended threshold, indicating that the variance due to measurement error is smaller than the variance captured by the construct. It also provides a preliminary indication that the validity of the construct may be acceptable and that the specified indicators sufficiently represent the constructs they are intended to quantify (Hair et al., 1998).

The *t*-values associated with all items exceeded the 1.64 and 1.96 thresholds for both 0.05 and 0.01 levels of significance, respectively. The overall reliabilities of all items in all five models ranged between 0.41 and 0.96, yielding a mean item reliability of 0.68. Composite reliability and the average variance extracted results indicated the measures were internally consistent and reliable. Cronbach's alpha ranged between 0.61 and 0.91. All exceed the 0.50 threshold deemed acceptable for preliminary stages of research (Churchill & Peter, 1984).

In the first instance, discriminant validity was assessed by the chi-square difference test. This involved determining the difference between one model that allowed the correlations between the constructs to be free and an alternate model that allowed the correlations to be constrained to unity (hence, they were perfectly correlated) (Gerbing & Anderson, 1988). This analysis was conducted for one pair of constructs at a time. The results of the difference tests confirmed the discriminant validity of the models. They show that the difference in chi-square is greater than 3.84 in all instances, despite the loss of one degree of freedom. The constructs with the free

(unconstrained) phi coefficient were all found to fit the data far better than those with a fixed coefficient.

RESULTS

Structural Models. A nested model approach was applied throughout the analysis. Unidimensionality was satisfied through the various analyses conducted. In addition, the scales all exhibited sound psychometric properties of reliability, convergent validity and discriminant validity. As a result, the items were aggregated into a single composite for each factor. This also enabled us to measure reliability by fixing the error variance as required. Given the difficulty associated with estimating such a large variance–covariance matrix (the number of items exceeded the number of observations), the number of items for each construct was reduced. This procedure is consistent with past research (e.g., Baumgartner & Homburg, 1996). The statistics for both models revealed moderate levels of acceptability. The internal structure of the model was evaluated whereby the R^2 for both models ranged between 0.19 and 0.51. These results were deemed acceptable and consistent with the extant research.

The two-step process recommended by Gerbing and Anderson (1988) was applied. We estimated a null model, a saturated model, more and less constrained models and a hypothesized model. Based on tests of absolute, incremental and parsimonious fit, the hypothesized model was superior to the alternate models put forth. The fit indices were: RMSEA = 0.06, NFI = 0.97, NNFI = 0.92, CFI = 0.99, RMR = 0.027, GFI = 0.98, AGFI = 0.88. All indicated more than acceptable fit of the hypothesized model.

Of the predicted relationships, RO was positively and significantly related to new product success ($\beta = 0.15$) and overall performance ($\beta = 0.46$). MO was positively and significantly related to customer value ($\beta = 0.16$), and overall performance ($\beta = 0.89$). Organizational learning yielded significant associations with MO ($\beta = 0.25$). This provides support for some of the hypotheses put forward. Table 1 outlines the results of the hypothesized relationships. All variables examined are provided in the figure for illustrative purposes only.

Results indicated a significant and negative relationship between buyer power and sales growth ($\beta = -0.22$), supplier power and customer value ($\beta = 0.03$), entry barriers and sales growth ($\beta = 0.51$), entry barriers and ROA ($\beta = 0.73$), entry barriers and NPS ($\beta = 0.22$), entry barriers and

Table 1. Results of LISREL Analysis (Completely Standardized Coefficients).

Determinant	RO	MO	Sales Growth	ROA	Market Share	New Product Success	Customer Value	Overall Performance
<i>Independent variables</i>								
Organizational learning	0.03	0.25*						
RO			0.09	0.09	0.07	0.15*	0.03	0.46**
MO			0.03	-0.11	-0.10	0.14	0.16*	0.89**
<i>Control variables</i>								
Buyer power	0.02	0.55	-0.22**	-0.15	0.02	0.08	-0.06	-0.02
Supplier power	-0.10	0.38	0.10	-0.06	0.06	0.08	0.03**	-0.20
Entry barriers	0.03	0.91	0.51**	0.73**	-0.22	0.22*	0.20*	0.26
Threat of substitutes	0.30**	0.54*	0.07	0.07	0.01	-0.12	-0.07	-0.45*
Competitive Intensity	0.47**	0.46	0.03	0.08	0.06	-0.09	-0.03	0.00
<i>Outcome variables</i>								
Sales growth					0.25**			
ROA					0.21**			
Market share								
New product success			0.11		0.34**			
Customer value			0.17**			0.18**		
R^2	0.45	0.47	0.40	0.44	0.24	0.19	0.19	0.51

* $p < 0.05$.

** $p < 0.01$, one-tailed tests.

customer value ($\beta = 0.20$) and threat of substitutes and overall performance ($\beta = -0.45$). In a similar vein, the results demonstrated a significant and positive relationship to be present between threat of substitutes and RO ($\beta = 0.30$) as well as MO ($\beta = 0.54$) and competitive intensity and RO ($\beta = 0.47$).

Interaction Effects

SEM interaction tests were conducted in this analysis to evaluate the existence of moderating effects. SEM interaction tests have the distinct advantage of being able to account for measurement error and correct for attenuation, thereby overcoming many of the problems associated with the regression models (Jaccard & Wan, 1996). Consistent with the methods applied throughout this study, the nested goodness-of-fit strategy was applied, using a multiple group solution, to evaluate interaction effects (Jaccard & Wan, 1996). The environmental settings of market turbulence, technological turbulence, and competitive intensity were evaluated. These interaction tests were inclusive of control variables. Interaction effects were not observed for any of the moderators that were evaluated indicating the robustness of the relationships found in all settings.

DISCUSSION

This research shows that RO and MO can both impact facets of performance including customer value. A principal purpose of this study was to determine the impact of each approach on performance outcomes in various business conditions. RO was directly and positively related to new product success and overall performance while MO was directly and positively related to customer value and overall performance. These findings were significant in all business conditions examined, with no significant interaction effects found. This is demonstrative of the robustness of the results in alternate business conditions.

Regardless of which strategy they intend to pursue, firms will need to incorporate learning into their strategic planning and tactics, as this has a significant direct impact on MO and a significant and positive indirect impact on RO. These patterns of results provide further evidence that a MO is most effective for establishing a compelling work environment to achieve favourable customer outcomes. This suggests that an MO would be more suited to customer-intensive industries, such as service industries. These

firms would strive to make themselves a compelling place to work and invest in, as suggested by the service-profit chain (Gale, 1994). They are highly dependent on customers to succeed and require loyal employees to establish relationships with these customers and be competent to service their needs. Hence, customer outcomes are critical to these firms. Surprisingly, MO was not directly related to financial outcomes or new product success. This could suggest that its effects are reflected in performance over time, as indicated by the significant indirect effects found in the results.

RO was most effective to increase efficiency to ultimately produce favourable financial outcomes. This was demonstrated by the flow on effects to many financial outcomes. Notably, RO was not directly related to financial outcomes or customer value. This could suggest that its effects are reflected in performance over time, as indicated by the significant indirect effects found in the results. Hence, as illustrated by the indirect effects, RO could lead to customer value and thereby positive financial outcomes after a new product developed by unique resource bundles succeeds in the marketplace.

Hence, RO appears to be most suited to organizations dealing with suppliers or manufacturers dealing with stable customer needs. Such firms do not need to deal with the end user as often as a service provider does. These firms are not as concerned with the needs of the consumer as much as a market-oriented firm. Such firms are less dependent on relationships as compared to service firms. The needs of customers are not as volatile as in service encounters and the customer does not impact the quality of the transaction as often occurs in service firms (Day, 1994; Gale, 1994). Rather, resource-oriented firms focus on what their resource base enables them to provide consumers with and offer goods and services based on this information. This allows them to produce a unique offering to the market that will often strike a chord with the consumer, leading to its ultimate success. Hence, RO enhances firm performance by improving internal effectiveness and efficiency to achieve new product success, whereas an MO improves performance by enhancing customer value.

As noted earlier, a number of indirect effects proved to be equally noteworthy, reinforcing the important effects of RO and MO (with OL) on performance in the long term. The lagged effects emphasise the need for management to be aware of the relationships between performance indicators. It is essential that firms pursuing an RO or MO adopt a long-term focus, so that appropriate investments and decisions are made. If a myopic view is adopted, firms will risk not achieving the positive outcomes these strategic orientations are associated with.

These issues could enable executives to plan corporate strategies and develop marketing plans encompassing a consideration of the external environment and the exploitation of their existing resources. It will also allow them to determine whether an RO or MO is best for their firm and hence aid them in finding new business opportunities to enhance their performance.

Implications

Notwithstanding the limitations later outlined, this study contributes to our overall understanding of both resource and market orientations. Most importantly, this research has established both perspectives as behaviourally based. In doing so, it has allowed us to compare both orientations and observe the performance outcomes with which they are most strongly associated. Such comparisons have not been investigated in either field of study and provide significant contributions to these research areas.

Moreover, it has provided preliminary evidence that organizational learning play a significant role in influencing MO. While there are a vast number of alternative indicators that could be examined in future research, the high degree of explanatory power held by these variables indicate their substantial effect on both fields of study. This also provides opportunities for future research to re-examine their effects.

The findings show that RO is an important determinant of new product success. This indicates that managers must be attentive to the resource bundles that allow them to consistently produce products that provide a unique benefit to the market. Turning to MO, the findings reinforce past research in that an MO is a determinant of customer value and overall performance, despite the environmental context in which it competes (e.g., Jaworski & Kohli, 1993). Hence, managers should aim to improve MO to maximise these effects in the short term.

Neither RO nor MO had a significant direct relationship with financial outcomes. This is in contrast to some previous research (e.g., Narver & Slater, 1990). It is however possible that MO and RO would have a lagged effect on various outcomes as suggested by the path analyses. As such, companies should plan an MO strategy as a long-term investment. This will require management to spend money on intangible resources and seek long-term profit. In reality, management may be constrained with expenditure and be compelled to achieve short-term profit (Greenley, 1995).

Management should help and encourage their employees to learn continuously and critically evaluate their processes, external needs and technologies of their customers and competitors. Thus, they will be able to

proactively preserve and enhance their capabilities by reducing the likelihood of ignoring the potential of emerging trends and practices. They must promote an ongoing stream of dialogue and inquiry concerning the current scarcity, value and inimitability of the firm's resources.

Emphasis has shifted in the strategic management literature towards the determination of the sources of advantage in the marketplace, given that positional and performance superiority is derived from skill and resource superiority. Hence, the specific action management takes to deploy resources and enhance their quality must be given particular attention by the firm (Day, 1994). Managers must be attentive to both the internal and external environments when engaging in these actions.

Norms prescribe individual behaviours and, as such, are the key mechanism through which to change the degree of MO (Lichenthal & Wilson, 1992) throughout a company. However, management must first change the value system that creates these behaviour-influencing norms. There are six dimensions that can change norms. These are prevalence, rigidity, frequency of activity, directionality, specificity, and object of orientation (Lichenthal & Wilson, 1992, p. 202). These dimensions will assist managers to identify mechanisms through which they are able to alter organizational structures and implement social changes throughout the corporation.

Potential Limitations and Future Research

A number of limitations and boundaries apply to any quantitative or qualitative research. Although the study incorporates a selection of both private and public sector organizations, it is limited to a nation-wide sample that may inhibit the generalizability of this research to international contexts and alternate settings.

The use of questionnaires as the sole method of data collection has been argued to be a contributor to common method variance. Ideally, a combination of methods, incorporating both quantitative and qualitative techniques should be used. While this would be encouraged for future research avenues, this could not be conducted in this study. The assurance of anonymity, budgetary and time restrictions and the difficulty in obtaining industry cooperation, in the absence of anonymity, precluded the pursuit of alternative data collection methods.

Cross-sectional research enables us to only examine relationships at one point in time. As a result, we are unable to determine the development of relationships and therefore, causality. Only the use of longitudinal data would enable us to do so and to assess the robustness and generality of the

model. As with most statistical procedures, longitudinal studies are also associated with limitations including informant membership (Hair et al., 1998). This alternative was not adopted for this study primarily as a result of time constraints. It does suggest that a replicated study would be beneficial to increase our confidence in both measures and models assessed throughout this research.

While it is essential to recognize the limitations of the research methods and techniques employed in order to be able to fully comprehend the results of the research, it is equally important to recognize the robustness of the variables employed. All methods applied throughout this study were derived from widely applied and accepted psychometric theory. In addition, the statistical techniques provide strong analytical power allowing us to overcome many of the problems inherent in traditional multivariate techniques. Together with sound theoretical frameworks, the results and conclusions drawn from these analyses are all reported with confidence.

A potential extension of this research is to examine whether the present findings are generalizable to alternative settings. Such an investigation would replicate this study within a diverse range of industries from those investigated in this present analysis. Alternatively, it would be useful to assess these results and relationships on an industry-by-industry basis. This would significantly contribute to our knowledge by allowing us to determine if and how these results differ between industries.

Conclusions

This research has shown that the RBV and MO differentially affect firm performance across various business conditions. These strategic orientations had unique contributions. Findings indicate that organizational learning is strongly associated with MO, which will in turn impact the performance outcomes. It also has a significant indirect impact on RO.

MO allowed a firm to achieve customer value. As compared to RO, MO was more strongly associated with overall performance. Moreover, MO did not yield a significant relationship with new product success. This may be the result of the focus MO has on customer value and the dominance of service industries existing in the sample. In contrast RO contributed to new product success, indicating how important it was to firm processes and the accumulation of appropriate and unique resource bundles.

A number of indirect effects proved to be equally noteworthy, reinforcing the importance of both strategic orientations for performance in the long term. The lagged effects emphasize the need for management to be aware of

the relationships between performance indicators. It is essential that firms pursuing an RO or MO adopt a long-term focus, so that appropriate investments and decisions are made. This research will act as a benchmark upon which to base prospective studies, thereby providing an invaluable inroad into further developing the generalizability of both the MO and the RBV for future research.

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**PART III:
ROLE OF PERFORMANCE
MEASUREMENT IN IMPROVING
ORGANIZATIONAL
PERFORMANCE I**

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TOWARDS “INTEGRATED GOVERNANCE”: THE ROLE OF PERFORMANCE MEASUREMENT SYSTEMS

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ABSTRACT

Over the last decade several codes and regulations on corporate governance have suggested that organizations should focus on compliance with internal and external rules and principles. However, ensuring good governance also requires an integration of performance measurement and knowledge management. Drawing on case studies of global corporations, we argue that when discussing issues of corporate governance within complex organizations, an integrated governance framework is needed. In this context, finance experts have the potential to play a key role as the access point to the “integrated and measurement driven” language, which is spread organization-wide, through global performance measurement systems.

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1. INTRODUCTION

During the last decade the corporate governance debate has proliferated among business managers, practitioners and academics (see, among the others, Shleifer & Vishny, 1997; Cohen & Boyd, 2000; Emmons & Schmid, 2000; Di Toro, 2000; CIMA, 2000; Demirag, Sudarsanam, & Wright, 2000; Ward, 2001; Denis, 2001; Coles, Williams, & Sen, 2001; Huse, 2003; Busco, Frigo, Giovannoni, Riccaboni, & Scapens, 2005). This debate has often focussed on certain global corporations (see Ianniello, 2003), whose ways of doing business have been criticized as being too profit-oriented, and overly focused on the financial aspects of organizational performance. In particular, it has been emphasized that creating value only for shareholders is not enough. Rather, value creation is an integrated process that is rooted in a broad perspective on accountability; one that combines the achievement of financial and non-financial objectives, with additional aspects such as ethical behaviour, compliance with internal and external regulations, risk awareness and knowledge management also being important (see Catturi, 2003, 2005; Busco, Frigo, Giovannoni, Riccaboni, & Scapens, 2006a).

In an attempt to regulate such key organizational issues, several reports, codes and laws have been introduced worldwide, focusing on the legal and regulatory framework for managing and supervising a company. Among others, the publication of the Cadbury Report in 1992 represented a milestone in setting out measures to enhance corporate integrity based on improved information, continued self-regulation, more independent boards, and greater auditor independence. In this context, major attention has been given to the relations between the board of directors, the top management and the shareholders, as well as to the role of internal/external auditing systems in ensuring information transparency and effective accountability towards the stakeholders.

More recently, new regulations and laws have been extending the regulatory framework for corporate governance to the finance organization (and to the CFO). Among others, the Sarbanes–Oxley Act (2002) in the US has imposed additional requirements on listed companies, by introducing new responsibilities for the trustworthiness and reliability of the financial reports (section 302), and new requirements for internal controls (section 404). Importantly, the CFO is required to certificate, along with the CEO, the balance sheet.

Such emerging issues and new responsibilities call for a re-definition of the role of the finance organization (and of the CFO) within the governance process. However, although finance managers are assigned crucial responsibilities by the Sarbanes–Oxley Act and by other recent national laws or codes of practices, it is important to acknowledge that they are not alone

in meeting these responsibilities. They need to work along with other managers (sourcing, production, sales, quality, IT, etc.) to design and execute new governance mechanisms. Nevertheless, while the momentum generated by Sarbanes–Oxley, if appropriately channelled, could be both a spur and an opportunity for the finance organization to be more directly involved, alongside other managers, in the governance process (see [CFO Research Services, 2005](#)). However, there is a risk that focusing attention on issues of compliance will encourage a greater degree of bureaucracy.

Despite the proliferation of national and international codes, guidelines and statements of best practices in corporate governance, recent company failures have shown that they are not enough to ensure effective governance. Accountability has to be grounded in individuals’ day-to-day ways of thinking and behaving within the organization and in the set of values, beliefs and attitudes that shape organizational activities and interactions. In this context, a key role can be played by knowledge management and organizational culture to promote individual commitment to company goals and values and to enhance a sense of belongingness to the whole organization.

The aim of this paper is twofold: first, we intend to reassess the meaning of governance in light of a broadened notion of accountability; second, we will explore the role of the performance measurement system (PMS) within such an extended notion of governance. To achieve these aims, the paper relies upon three illustrative case studies concerning global organizations (General Electric, Nestlé, Whirlpool). The case studies provide examples from the field on how some companies are dealing with issues of governance. As a result of our research we have come to recognize the crucial role of three dimensions of governance: compliance, performance and knowledge. In particular, while recent debates have broadened the notion of governance, linking performance to compliance, we argue that a crucial role is played also by a third dimension: knowledge. Drawing from the current debates and the empirical insights of our case studies, we propose an integrated framework that brings together the three dimensions of governance. While implementing integrated governance is a team effort, finance managers can apply their particular skills in each of the three dimensions, and thereby extend their thinking beyond compliance.

2. THE METHODOLOGY

Over a period of three years (2002–2004), we have visited divisions/subsidiaries of global organizations in US, UK and Italy.¹ Using semi-structured

interviews, we have compared and contrasted the evolution of PMS in these organizations. The case studies have explored the everyday reality of their accounting practices. Through discussions with finance experts and other organizational participants, the collection of documentary evidence and the meetings attended, these studies have examined the ways in which organizational members view the current/future role of PMS in the processes of achieving organizational integration. Although the entry point into each company has been at different organizational levels (from head office to operating unit), we have explored the organization around the entry point, interviewing both accountants and other managers, but also going up and down at least one level in the hierarchy, while also being sensitive to influences from other hierarchical levels. A description of the selected companies is provided below.

General Electric (GE) is a diversified technology, media and financial services global company, providing a wide range of products and services, from aircraft engines and power generation to financial services, medical imaging, television programming and plastics. From its headquarters in Fairfield (US), GE operates in more than 100 countries and it employs more than 300,000 people worldwide. Interviews were conducted in the UK and in Italy within the *Oil & Gas group* (GE Oil & Gas) which is part of GE Energy (one of the major GE businesses), and in the US within GE Corporate.

Nestlé is a food and beverage global company. With its headquarters located in Vevey (Switzerland), it has more than 520 factories in 82 countries, and employs 250,000 people from over 100 countries. Nestlé's range of products comprises 10 major categories: baby foods, dairy product, breakfast cereals, ice cream, chocolate and confectionary, prepared foods, food services, beverages, bottled water, and pet care; and they are sold under 8,000 brands. Interviews were conducted in Italy, the UK, and the US, within the Water division of Nestlé; named *Nestlé Waters*.

Whirlpool Corporation is a supplier of home appliances (washing machines, tumble dryers, refrigerators, etc.). With its headquarters located in Benton Arbour (Michigan, US), it employs 68,000 people and has nearly 50 manufacturing and technology research centres around the globe. Interviews were conducted in Italy and the US, respectively in the European and North American regions of Whirlpool Corporation; named *Whirlpool Europe* and *Whirlpool North America*.

The structure of the paper is as follows. Section 3 portrays a possible framework for integrated governance. Next, Section 4 combines insights from the current governance debate with the empirical findings of the cases of General Electric, Nestlé Waters and Whirlpool to explore the potential

role of PMS in implementing the three dimensions of governance. Subsequently, Section 5 highlights the potential role of the finance organization in integrated governance. The main contribution of the paper is summarized in Section 6.

3. BEYOND COMPLIANCE: THE INTEGRATED GOVERNANCE FRAMEWORK

Over the past 20 years the concept of “governance” has been discussed according to both broad and narrow definitions. A common broad definition is provided by the Cadbury Report (1992), which describes Corporate Governance as the system by which companies are directed and controlled. However, it is probably the OECD (2004) which, by extending the Cadbury Report, provides one of the most authoritative functional definitions of corporate governance; it refers to the rights and responsibilities among different participants in the corporation (such as the board, managers, shareholders and other stakeholders) and to the rules and procedures for making decisions on corporate affairs. The various conceptualizations of corporate governance range from the relationships among the shareholders, the board of directors and the management (“corporate tripod”) to the organizational interactions with customers, competitors, suppliers and the society. Although the previous definitions provide a broad notion of corporate governance, they have been often translated into the need to ensure *compliance* with a set of rules and principles.

The need to broaden the concept of governance beyond the set of rules and principles, according to which managers are required to behave, has been addressed by several scholars. According to Grandori, governance forms have to be re-conceptualized as:

mixes or configurations of simpler and potentially disentangleable components. These components are constituted by a bundle of property rights and by a set of coordination mechanisms.

(Grandori, 1997, p. 29)

While orthodox approaches, such as transaction cost economics (see Coase, 1937; Williamson, 1985), rely on neoclassical economics to conceptualize the hierarchy and the market as two alternative governance mechanisms, portraying the hierarchy as a conscious coordination mechanism and the market as a spontaneous form of cooperation, other researchers criticize this dualistic typification of governance forms as being overly simplistic. Along

this line, Grandori (1997, 2000) suggests how different governance structures exemplify different combinations of coordination mechanisms and allocations of property rights. Importantly, in her view, the basic coordination mechanisms include the institutionalization of rules and norms, which is related to the “establishment of *stable* models of action, legitimized by custom, habit or law” (Grandori, 1997, p. 37).

3.1. *Alternative Perspectives on Governance*

The transaction cost approach views the firm as a *nexus of contracts*, portraying organizations as *governance mechanisms* to solve the problem of misaligned incentives due to imperfect information. From this point of view,

the purpose of governance mechanisms is to provide, at minimum cost, the coordination, control, and ‘trust’ that is necessary for transactors to believe that engaging in the exchange will make them better off.

(Dyer, 1996, p. 651)

The transaction cost approach has some essential features in common with the principal–agent approach of agency theory. In this respect, agency theory relies on the assumption that there is goal conflict between agents and principals (Levinthal, 1988). In this context, the governance of the principal–agent relations focuses on the mechanisms adopted to align the interests of the agents and principals, and to monitor the behaviour of the agents using on organizational monitoring mechanisms together with managerial incentives (Aulakh & Gencturk, 2000; Coles et al., 2001). Consequently, the main purpose of management control systems is to ensure that when organizational participants act in accordance with their perceived self-interest, they also act in the best interest of the organization as a whole (Anthony & Govindarajan, 2001).

By considering the firm as a *processor of information*, these traditional approaches see firm’s behaviour in terms of the optimal reaction to the environmental signals detected by the organization. Governance is reduced to a bundle of bilateral contracts, which rely on incentive schemes to align individual actions with common organizational goals. Amin and Cohendet (2000) claim that although these approaches do not neglect the cognitive and learning dimensions of economic agents, such capabilities are assumed to be exogenous. Therefore, while these perspectives focus on processing *information*, it is important to highlight that there are alternative approaches which are more sensitive to the creation, sharing and distribution of

knowledge (see Catturi, 2003; Busco, Riccaboni, & Scapens, 2006b). Such approaches give emphasis to the cognitive and learning capabilities of social actors, and to their ability to actively reflect upon pieces of information in order to produce knowledge. In this context, the concept of routine acquires prominence within the governance framework. As argued by Grandori (1997), the institutionalization of rules, norms and routines represents a key process to be explored.

The etymological meaning of the term 'institutionalization' is in fact the establishment of *stable* models of action, legitimized by custom, habit or law. Although 'institutions' are often seen as 'context' variables in organizational analysis, there are reasons for considering *conventions* as types of coordination mechanisms in their own right, competing with other mechanisms in the effective governance of economic activities.

(Grandori, 1997, p. 29)

According to perspectives such as the old institutional economics (see Boland, 1993; Scapens, 1994; Burns & Scapens, 2000; Burns, 2000; Busco, Riccaboni, & Scapens, 2002) and the competence-based approach (see Kogut & Zander, 1992; Dosi & Marengo, 1994), the institutionalization of rules and norms represents a key governance mechanisms. In particular, the process of institutionalization leads to a reduction of *information costs* and *cognitive complexity*.

Recalling the prototypical situation in which rules would clearly be the best coordination mechanisms, it would be very inefficient to govern traffic by means of case by case decision-making in whatever form ... In addition to these information cost reduction processes, rules and norms display cognitive complexity reduction properties: they bring about paramount economies of bounded rationality by setting a frame of knowledge 'out of discussion' within which current action problems can be considered and solved ...

(Grandori, 1997, p. 38)

Thanks to the cognitive complexity reduction properties, coordination through institutionalized and learned behaviour helps in governing ambiguity, by providing social actors with a sense of psychological safety (Schein, 1992). Habits of thought and routinized patterns of behaviour provide a sense of stability and predictability through time and space, enabling those actors who draw upon them to cope with the complexity of specific situations and to take appropriate actions. As claimed by Giddens,

routinization is vital to the psychological mechanisms whereby a sense of trust or ontological security is sustained in the daily activities of social life.

(Giddens, 1984, p. xxiii)

By standardizing and regulating action, the formalization of practices contributes to the creation of stable expectations about others' behaviours, thereby enhancing behavioural predictability.

According to the competence-based approach, the firm is portrayed as an institution where competences (i.e., firm-specific knowledge) are continuously built, maintained, shared and transferred (Kogut & Zander, 1992; Dosi & Marengo, 1994). This stimulates questions about what the firm has to coordinate and how. As a result, one of the main concerns of governance is to coordinate knowledge and learning processes across time and space. As suggested by Amin and Cohendet (2000):

... considering the firm as a processor of knowledge leads to the recognition that *cognitive mechanisms* are of central importance and that *routines* play a major role in keeping the internal coherence of the organisation. Thus, *the governance of the firm is not solely concerned with the resolution of informational asymmetries, but on the co-ordination of distributed pieces of knowledge and distributed learning processes.*" (p. 94, emphasis added)

3.2. *The Integrated Governance Framework*

Relying on the theoretical approaches surveyed within this section, the multiple dimensions of *governance* emerge. In particular, while traditional governance perspectives ground in neo-classical economics, for example transaction cost economics and agency theory, relate governance to the processing of information and the resolution of informational asymmetries, alternative approaches within the governance debate broaden the research agenda, by highlighting the role of individual cognitive capabilities. By considering the firm as a processor of knowledge, the interpretation of governance is extended to learning processes and to the coordination of distributed pieces of knowledge. Consequently, as claimed by Smith and Stacey (1997), the governance debate should also explore the dynamics of human systems (see also Shapira, 2000; Grandori, 2000; Busco et al., 2006b). In our view, a perspective based on individual cognitive capabilities, knowledge and learning processes enables us to broaden the governance framework beyond the agency relations between ownership and management, to include wider issues of coordination, such as the need to integrate distributed knowledge and to ensure behavioural coherence, integration and consensus on an agreed set of priorities and objectives within and/or between organizations.

Building on the previous considerations, we argue that governance cannot be viewed only in terms of compliance with external/internal rules. It also comprises the operational processes through which organizational performance

is achieved, implemented and controlled as well as the mechanisms for managing knowledge within the organization. Along these lines, effective accountability towards company’s stakeholders should combine and integrate three main dimensions (see Fig. 1):

- *Compliance*: Organizational *performance* and value creation have to be achieved in accordance with internal and external rules, codes and principles. The lack of compliance can damage organizational image and reputation, thereby affecting organizational performance.
- *Performance*: Managers are accountable to the shareholders for organizational performance and value creation. Such accountability requires them to recognize the *risks* involved in the business (financial, operational, reputational, environmental, etc.). Managers are accountable for effective *risk management*, which is crucial for ensuring organizational *performance* and shareholder value creation. This requires *compliance* with risk standards as well as a *cultural* awareness of the risks involved in every-day activities.

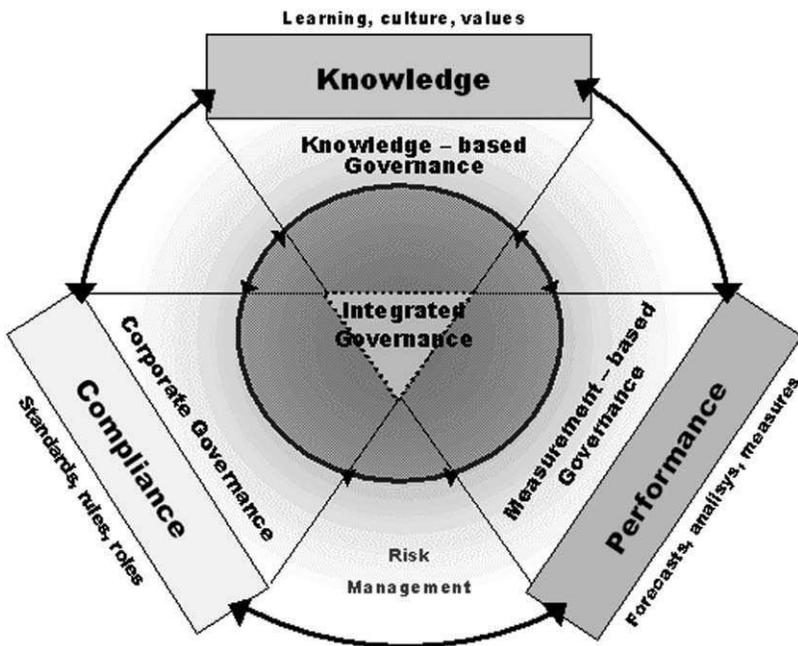


Fig. 1. The Integrated Governance Framework.

- *Knowledge*: Company principles, rules, goals and strategies affect and are affected by organizational *culture*. In particular, knowledge management and learning processes are capable of enhancing individual commitment to the organizational rules, principles and goals, thereby promoting managerial *compliance* and organizational *performance*. They also shape and are shaped by *risk* management practices.

The three sides of accountability need to be addressed through specific governance systems:

- *corporate governance*, to ensure compliance with internal and external rules, codes and principles;
- *measurement-based governance*, to measure and control performance and shareholder value creation;
- *knowledge-based governance*, to manage processes of learning and knowledge sharing.

While corporate governance focuses on *compliance* with *standards, rules* and *roles*, measurement-based governance focuses on *performance* through *forecasts, analysis and performance measures*. Both influence and are influenced by knowledge-based governance, which relies upon *knowledge management, learning processes, and organizational culture and values*. To ensure effective governance, we argue that the three systems need to be combined and implemented within an integrated framework (Fig. 1).

To address the issues raised above, the following sections combine insights from the current debate on governance with the empirical findings of case studies of global organizations.

4. IMPLEMENTING THE THREE DIMENSIONS OF GOVERNANCE: THE ROLE OF PERFORMANCE MEASUREMENT SYSTEMS

4.1. Implementing Corporate Governance

Several recent codes and best practices on corporate governance have attempted to identify the actual mechanisms for ensuring good governance and control, giving particular attention to senior executive compensation systems, internal auditing and financial reporting. The report of Committee of Sponsoring Organizations of the Treadway Commission (COSO, 1992),

report on enterprise risk management, which extends and integrates the internal control framework provided by the report of COSO (1992). The call to combine “statutory compliance” (i.e., the statutory measures to encourage compliance provided by national codes and regulations) with “voluntary compliance” (i.e., voluntary codes and initiatives) is also emphasized by CIMA, which builds on the Cadbury Code and highlights “the risk that statutory measures would encourage compliance to the ‘letter, not the spirit’ of the Code” (CIMA, 2000, p. 8).

In relation to the previous issues, the case of *General Electric* shows that specific initiatives can play a key role, alongside internal control systems, in implementing corporate governance. In particular, the “controllership initiative,” the main principles of which are issued in the GE booklet titled “The Spirit & Letter,” aims to clarify and to communicate GE’s corporate governance principles, which are linked to business operations at every level within the organization.

4.1.1. *The Controllership Initiative at GE*

Aiming to ensure greater transparency and accuracy in financial management, as well as to enforce senior management accountability, the GE “controllership initiative” goes beyond the creation of a set of mechanisms to ensure corporate responsibility and seeks to foster a business culture which is nowadays fully engrained within GE operating systems. This culture relies on performance measurement practices which are shared across business areas and operating companies, and utilizes a series of metrics, such as Six-sigma, which draws from statistics, finance and operations management to build a rigorous framework for tracking financial results and corporate governance. The main outputs of controllership within GE are:

- (1) *integrity in communications* which ensures timely, complete, fair, understandable and accurate reporting of actual and forecast financial and non-financial information within all GE reports;
- (2) *compliance* with applicable laws, regulations and company policies,
- (3) *rigorous business processes* that ensure management decisions are based on accurate economic analysis (including prudent consideration of risks), and that GE’s physical, financial and intellectual assets are safeguarded and efficiently employed, and
- (4) *preservation* of required documents and records, including all documents that are known to be relevant to litigations, audits or investigations.

The core requirements and principles of “controllership” are listed in GE’s integrity policies booklet – *the Spirit & the Letter of our commitment*.

Available in 27 languages, the booklet has been provided to every one of GE's 300,000 employees, who are all personally accountable for compliance. Similarly, GE holds consultants, agents and independent contractors to the same integrity standards.

Besides *traditional compliance-related* requirements, such as the need to follow GE's General Accounting Procedures (GAP) and all Generally Accepted Accounting Principles (GAAP), the *Spirit & Letter* extends its requirements to strategic and operating decisions. In particular, the controllership initiative seeks to ensure that:

- financial and non-financial information and operating metrics are reported accurately and on a timely basis;
- economic and risk-based criteria are used to make business decisions;
- timely and candid forecasts and assessments are provided to management;
- sound processes and controls are constantly maintained;
- financial results are consistent with actual underlying performances;
- physical assets or other resources are fully utilized, and eventually promptly reallocated; and
- routines and controls in newly acquired businesses and at remote, thinly staffed sites are adequate.

The controllership initiative is playing a key role in implementing corporate governance in GE, clarifying and communicating GE's corporate principles, which apply to business operations at every level within the organization.

4.2. Implementing Measurement-Based Governance

The performance side of accountability requires the implementation of specific measurement systems to align performance with organizational strategies in order to achieve shareholder value creation, to support strategic decision-making, and to effectively enact managerial accountability to the shareholders.

The role played by performance measurements in implementing the enterprise governance system was recently set out by CIMA and IFAC (2004). They proposed a strategic scorecard as a governance tool for measuring and monitoring the strategic position, options, and risks of the organization. Similarly, other professional bodies have proposed different sets of KPIs (Key Performance Indicators) and scorecards as key tools to be used by corporate leaders for monitoring the governance system (see, for instance, PricewaterhouseCoopers, 2004) as well as for managing organizational strategies and fulfilling performance oversight responsibilities.

An example of the role of the Balanced Scorecard in implementing the performance side of accountability is given by the case of Whirlpool Corporation. The case shows how the performance and the knowledge sides of accountability are related with each other through the PMS, which is used as a means to communicate and clarify corporate objectives, priorities and values as well as to align individual priorities to corporate values.

4.2.1. *The Global Balanced Scorecard in Whirlpool*

The Whirlpool Corporation (Wco) has implemented an integrated PMS centred on a global balanced scorecard (GBS). The GBS was developed through a top-down process, articulated at four main “levels”: (1) Global; (2) Regional; (3) Functional; (4) Individual. The regional, functional and individual objectives are derived from the global objectives expressed in the GBS, which has three out of the four “traditional” perspectives:

- (1) financial measures (of *shareholder* results): EVA, cash flow, revenue growth, net earnings, earnings per share;
- (2) customer measures (of *customer* satisfaction): market share, service incident rate, total cost of quality per unit of production, customer loyalty; and
- (3) employee objectives (and measures): high performance culture (examples of measures: % improvement in individual assessment), personal development plan (examples of measures: number of training sessions completed and individual performance development plan’s defined), training development plan (examples of measures: number of scheduled leadership development programs conducted; number of individual training plans communicated and finalized), diversity plan (examples of measures: % improvement of nationality mix in approved international positions; % improvement of female representation at manager/director/officer levels).

Wco is divided into four “regions”: Europe, Asia, Latin America and North America. The GBS is developed at a global level, but applies to all the regions (and to each of the countries within the regions) as well as to the corporate head office in the US. Through the GBS, regional and company objectives are aligned to corporate goals and strategies.

At an individual level the GBS objectives are translated into performance measurement plans (PMP). The linkages between the GBS and the PMP help to align individual and regional strategies to corporate goals, as well as

to communicate corporate goals and priorities to individuals. The PMP is written on a form which is composed of three parts:

- (1) the performance objectives for the year (first part of the form – “state your performance objectives for the year”); these reflect the person’s specific responsibilities to the company (such as “improving a process” or “reducing spending”);
- (2) the behavioural objectives for the year (second part – “How I meet my objectives”); this part of the PMP shows how the employee is going to adjust or change or strengthen his/her behaviour in order to meet the company’s values; it shows how and by what behavioural means the employee intends to meet the goals for the year; and
- (3) a personal development plan (third part – “My Plan,” “What do I need to develop in order to be more effective”), showing how the employee will improve him/herself from a career stand-point; it clarifies “what are the goals as an employee,” “where does he/she want to go.”

These three parts of the PMP combine to determine individual performance. The individual objectives can be aligned to any of the three components of the GBS (they do not necessarily need to be aligned to all three). The relationships between the GBS and the PMP are made as clearer as possible to individuals. As explained by a human resource manager; “there is essentially a chain that happens from the individual level to project/functional/regional/corporate goals, through the PMP and the GBS. Each one of those steps integrates all of them back to one common point, shown in the GBS.” By integrating financial and non-financial measures the PMS, centred on the GBS and the PMP, provides the link between individual objectives (in terms of performance, personal development, behaviours) and the corporate financial and non-financial goals.

KPIs and scorecards are not the only PMS that can be used for implementing the performance side of accountability. The case of Nestlé Waters illustrates the key role played by other tools, such as the budget and the “End-to-end Profit and Loss Statement” (ETE P&L). In particular, the new PMS is facilitating the integration of product strategies across different countries, while it is promoting a process of information exchange and interaction among different companies belonging to the Nestlé group.

4.2.2. The End-to-End Profit and Loss Statement in Nestlé Waters

Following the introduction of two business units (BUs) within Nestlé Waters, the PMS has been restructured in order to fulfil the new information

and control requirements. Currently, the BUs planning processes follow a common calendar. The main steps are:

- (1) development of the global brand strategy;
- (2) budget preparation;
- (3) binding contract between the producer and its distributors;
- (4) implementation and control; and
- (5) reporting and feedback.

The planning and budgeting process of Nestlé’s *international* water brands starts with the development of the *global brand strategy*, according to a standard format prescribed by NWHQ and used by both the BUs. The global brand strategy concerns brand positioning, pricing strategy, brand development as well as the volume strategy. According to internal procedures set by Nestlé Waters headquarters (NWHQ), this document is first drafted by the BU managers and then communicated to and discussed with the distributors, and eventually approved by NWHQ.

The global brand strategy is then translated into a plan (called a *market development program*) for each distributor, defining market priorities, volumes and price targets as well as the resources to be committed. The program is drawn up by each distributor and has to be discussed with the producer until an agreement is reached by both parties. The program will then be the basis for the *Long term plan* (LTP). Once approved by both the producers and distributors, the first year of the LTP forms the basis for the *Operating plan*.

The *ETE P&L* is then obtained by consolidating data obtained from both the producer and the distributors; it shows the international brand profitability in terms of the joint profitability of the producer and distributors (that is, the end-to-end profitability). In so doing, the budget preparation entails both vertical and lateral relations that inform the following phases:

- (a) the definition of the international brand profitability and the profit rate of the distributors by NWHQ, which is used for the transfer price calculation (vertical relations);
- (b) the preparation of the budgets by distributors; i.e., the distributors’ proposed market prices, volume targets, expenditures for marketing, sales force and merchandising, storage and distribution, administration (lateral relations);
- (c) the discussion between BUs and distributors (lateral relations) until an agreement on the previous parameters (see phase b) is reached;

- (d) the determination of transfer prices based on resale price less an agreed percentage (the “resale less” method) using the parameters defined in the first three phases;
- (e) the production of the international brands ETE P&L (by the BU finance managers); this is then followed by a discussion and a revised ETE P&L until agreement is reached (lateral relations);
- (f) the definition and validation of the budgeted ETE P&L by the finance department of the BU (lateral relations); and
- (g) the final approval by NWHQ (vertical relations).

The revised planning and budgeting procedures for the two BUs involve both vertical and lateral relations. In particular, a new PMS based on the ETE P&L has been introduced to support information exchange between the producers and the distributors (lateral relations) and to determine the brand “end-to-end” profitability. Moreover, new planning and budgeting procedures have been adopted in line with emerging patterns of vertical interaction between NWHQ and the BUs.

In addition to accounting systems, corporate initiatives and projects can play a central role in implementing measurement-based governance. An example is the “Six-sigma” project implemented by General Electric since the mid-1990s, which aims to boost profitability by improving the quality of products and services delivered to customers. With Six-sigma, GE introduced a PMS which uses rigorous business process analysis to re-engineer ways to add value to the customer. Besides the impact on the bottom line, the Six-sigma initiative has provided GE with a shared language of financial and non-financial indicators, which have helped the management to build a lasting customer-focused culture rooted around performance measurements.

4.2.3. The Case of Six-sigma in General Electric

In January 1996, a Six-sigma programme was launched in GE to increase its profitability and customer satisfaction. Six-sigma is a highly disciplined program which helps to focus on delivering high quality product and services, by measuring how far a given process deviates from “perfection.”

Each Six-sigma project starts from an a priori customer-driven identification of “macro” critical-to-quality (CTQ) issues. These CTQs are then broken-down into multiple critical processes, which need to be investigated in order to reduce defects and increase profitability. Therefore, within a continuous improvement programme, these critical processes are examined

by specific “micro” projects. These projects involve five separate steps, which are referred to by the acronym D-MAIC:

- (1) define, a preliminary phase where the key characteristics of the process are identified;
- (2) measure, where CTQs defects and non-conformity are measured in sigma terms;
- (3) analyse, where the fundamental causes of the defects are analysed using a wide variety of tools, ranging from brainstorming to statistical techniques;
- (4) improve, where the processes are re-engineered through re-design, modification, etc., to bring the number of defects within the desired limits; and
- (5) control, where the ongoing activities are controlled through monitoring techniques, such as statistical process control, to ensure that the improvements are maintained.

The achievements of the individual projects are constantly monitored both in financial terms (including cost of quality) and according to a wide range of non-financial indicators (numbers of defects, customer satisfaction, supplier quality, etc.). Thus, since the introduction of Six-sigma in GE, there has been a major expansion in the measures used to monitor performance at all levels in the businesses, and particularly at the level of the individual projects. Such measures are designed to take the “temperature of every single business process or project.”

Within Six-sigma various metaphorical names are given to the individuals involved, and collectively they are referred to as a new “warrior class.” In addition to the full-time Quality Teams, there are four classes of Six-sigma “warriors”: *Champions*, *Master Black Belts*, *Black Belts* and *Green Belts*. The *Champions* are the leaders of functions or divisions who promote, approve and facilitate the projects within their area of responsibility. The *Master Black Belts* are the full-time Six-sigma experts, who manage various projects and train the *Black Belts*. The latter, are the full time quality managers who lead the teams dedicated to specific projects. Finally, the *Green Belts* work part-time on specific projects, while continuing their normal activities in the company.

Owing largely to its organizational-wide diffusion, Six-sigma has come to comprise shared operational and managerial knowledge, both internationally across GE’s global subsidiaries and intra-organizationally across its businesses and functions. In many GE companies (such as Nuovo Pignone (NP), located in Florence, Italy – the headquarters of the GE Oil & Gas

group) the introduction of Six-sigma has served an important role in extending the culture of measurement across all the areas of the business. Six-sigma was crucial in enabling new knowledge to be validated and, eventually, to become crystallized in a set of common (best) practices. The language of Six-sigma is used to spread stories of operational successes as well as the financial benefits achieved. Six-sigma is a way of thinking that is now embedded in the culture of GE.

4.3. Implementing Knowledge-Based Governance

While the compliance and the performance sides of accountability rely mainly upon formal control mechanisms (such as organizational charts, codes and practices, planning and budgeting system, etc.), the knowledge dimension is enacted through both formal and informal mechanisms. Formal mechanisms include the systems for sourcing, storing, sharing, and building knowledge assets. In this context, information systems are crucial for governing knowledge. Informal mechanisms, however, are more difficult to structure into specific tools or systems. They include learning processes, corporate culture, trust and power relations, are more likely to take place through lateral communication, and both affect and are affected by the formal mechanisms. Sharing knowledge and learning from the experiences of others can help to improve organizational performance as well as to promote a common culture.

An example of the role played by information systems in governing knowledge is provided by the case of Nestlé, which has recently launched a program called “Global Business Excellence” (GLOBE), which aims to harmonize and simplify business process architecture through an integrated information system. GLOBE will provide Nestlé companies with common guidelines, structures and best practices to integrate operations across the whole organization and to align organizational strategies to corporate goals. The implementation of this shared information system is intended to provide managers with a “common language” to improve knowledge sharing and learning processes as well as to achieve coordination and integration within Nestlé.

4.3.1. The GLOBE Project in Nestlé Waters

In order to improve coordination and knowledge sharing and to achieve effective governance, Nestlé recently launched several worldwide programmes. Among these, GLOBE aims to harmonize and simplify business

processes through an integrated information system (based on SAP). The main goals can be summarized as follows:

- *Best practices.* Creating common business processes, establishing best practices for activities such as purchasing, sales forecasting, production planning, and customer service. In particular, the aim is to standardize the “back-end” of the business (i.e., procurement and production) and to be more flexible at the “front-end” (i.e., interfaces with customers).
- *Data standardization (managing data as a corporate asset).* Establishing a common coding system for various items (such as raw materials and packaging, finished goods, vendors, and customers). This will facilitate the consolidation of information, which is increasingly important as inter-market supply is becoming prevalent throughout the Group.
- *Common information systems.* To support best practices and data standardization, common information systems are required.

The project is not solely concerned with the implementation of a shared information system. It also seeks to standardize internal and external databases and to implement a common business process architecture. The aim is to provide Nestlé companies with common guidelines, structures and best practices to integrate operations across the whole organization and to align organizational strategies with corporate goals. GLOBE will give to Nestlé companies common patterns for processing information and for disseminating measurement-based knowledge. The objective is to store best practices and measurement-based knowledge, making them available across the various business units, and to combine and integrate different ways of managing the business.

In addition to integrated information systems (such as within the GLOBE project), training and communication through meetings and internal publications can play a key role in governing knowledge within the organization. An example is provided by the case of GE and NP. Following the acquisition by GE in 1994, NP (formerly a state-owned Italian company) underwent a deep process of culture transformation to adapt to the managerial style of a global corporation. In this context, training programs and communication skills played a key role in changing the “old” ways of thinking about the business, and providing the organization with a new culture. Importantly, after the acquisition, cultural change was deemed essential both to infuse NP with the “GE way” (i.e., a business philosophy built on leadership, accountability and performance measurement) and to support the change from an Italian state-owned company to a part of an American multinational corporation.

4.3.2. Finance-Based Training and Communication in General Electric

Originally established in 1842 in Florence (Italy) as Pignone, Nuovo {New} Pignone (NP) was set up in 1954 following its acquisition by ENI, a state-owned holding company, and was later, in 1994, it was acquired by GE. Established as a cast-iron foundry, over the years the company grew and prospered through the design and manufacture of specialized equipment, such as electrical turbines, compressors, pumps and turbines for energy-related industries. Its technical achievements include the world's first gas-powered internal combustion engine. Given NP's well-earned reputation for the quality of its engineering and products, and also its extensive market portfolio, it was not surprising that GE decided to acquire this major competitor. Nowadays, NP represents a core brand of GE Energy and GE Oil & Gas.

During the process of integrating of NP into the global GE organization, significant change took place as the GE Way was applied in NP. As far as measurement systems were concerned, the culture of NP was so totally different to GE that a massive process of cognitive and practical change was required. Whereas NP had no tradition of using PMS, GE's management and organizational style relied extensively on such systems for both communication and control. Before the acquisition, NP was a state-owned and largely bureaucratic company, which had to produce budgets and various reports for both head office and the state bureaucracy; but they were largely ceremonial and not integrated into management practices. Thus, although various programmes of organizational re-structuring were implemented within NP, ranging from downsizing and delayering to boundaryless working and outsourcing, the process of integration was grounded essentially in a major change in the understanding of "measurement," and especially performance measurement, within NP. In particular, there were two major drivers which enabled NP to come to terms with the GE Way: the first was the re-design of the company's systems of control and accountability, and the second was the subsequent implementation of the "Six Sigma Initiative" –the measurement-based quality improvement programme, mentioned earlier.

Following its acquisition of GE, everyone within NP had to learn a new language based on measurement and accountability. As the process of integration began, the first three GE individuals to arrive at NP were the chief financial officer, the financial planning and analysis (FP&A) manager, and the corporate auditor. GE knew it was buying a state-run company with good product technology, but poor measurement systems and little financial management. Very early in the integration process, significant effort was put into creating a measurement system aligned with the business goals that was

capable of providing timely and accurate information well as linking NP with the GE global environment. Within the first six months, NP went through a metrics revolution. Re-designing the systems of accountability involved major extensions to the company’s financial systems, and a profound process of re-structuring of the accounting and finance function. The latter comprised a re-organization of *Manufacturing Finance* (the department traditionally responsible for cost accounting) and the establishment of new departments: namely *Financial Planning and Analysis* and *Commercial Finance*. In addition, a new task-force of *Finance Managers* was created and assigned to individual divisions or streams as finance experts to support the businesses.

Viewed from both inside and outside the company, a major process of change has taken place within NP as the local culture met the global GE Way of managing the business. Consequently, NP has experienced a major cultural change: from a bureaucratic, state-owned Italian company, to an important part of one the most profit-oriented global corporations. However, the change has not taken place without conservation of the existing technical culture. Within NP the existing culture was not repudiated, rather it was complemented by the *culture of measurement*. Furthermore, the measurement-based revolution was supported by the Six-sigma initiative, which built on and extended NP’s traditional focus on production excellence. This initiative enabled a measurement-based philosophy to penetrate all levels of the company.

Considerable learning and transformation has taken place in this Italian organization as the engineering-oriented capabilities of NP “met” GE’s focus on bottom-line results. However, although a cultural revolution has taken place within NP, it does not represent a discontinuity with the past – it has come about through a combination of existing expertise and a global organizational language based on a shared PMS.

4.4. Implementing Integrated Governance

In the previous sections we have described and illustrated the main dimensions of governance (corporate governance, measurement-based governance and knowledge-based governance) and we have identified some of the potential tools which can be used to deploy them in a specific organization. However, we believe that *governance* should not be viewed in terms of separate sub-systems, but rather it should be designed and implemented within an integrated governance framework (see Fig. 1).

Despite a growing recognition of the importance of *compliance*, *performance* and *knowledge* in governing global organizations, a clearer

conceptualization is needed. The integrated governance framework proposed here attempts to define the main characteristics of accountability, which should comprise interconnected systems for:

- (1) regulating relations between the stakeholders, the board of directors and top management, ensuring compliance with company rules and external laws and regulations (corporate governance);
- (2) aligning processes and activities to organizational strategies, to maximize organizational performance and value creation (measurement-based governance); and
- (3) aligning individual values, beliefs and behaviours to organizational mission, principles and strategies through knowledge sharing and learning processes (knowledge-based governance).

Importantly, to implement the integrated governance framework, financial reporting systems or management control systems (i.e., budgeting, planning, cost accounting techniques) alone are not enough. Knowledge management practices are crucial as well. To that respect, while recent debates have broadened the notion of governance, linking performance to compliance (see for instance [CIMA & IFAC, 2004](#)), we argue that a crucial role is played also by the knowledge dimension. By relying on the empirical insights of the case studies on global organizations, our contribution is to look at governance as an integrated framework that brings together compliance, performance and knowledge. While implementing integrated governance is a team effort, finance managers should bring their particular skills to the three dimensions, reassess the nature of governance, and think beyond compliance.

5. RE-SHAPING GOVERNANCE AND ACCOUNTABILITY: THE ROLE OF FINANCE IN INTEGRATED GOVERNANCE

In recent years the need for more rigorous accountability has taken the form of stringent new corporate accounting and reporting rules, such as those in the Sarbanes–Oxley Act of 2002 in the United States and the new International Accounting Standards. These regulations mandate better internal controls, and in the case of Sarbanes–Oxley, require CEOs and CFOs to personally certify the financial results. There is no doubt that CFOs and finance managers are increasingly becoming crucial to the image and success

of the organization in the market. They are required to collect and deliver the stories behind the figures to a large number of sophisticated stakeholders. In order to fulfil such rising expectations, the most difficult challenge for the finance function is to build a collaborative environment that allows internal stakeholders at every level to participate in, contribute to, and take ownership of the processes of compliance, the system of strategic planning and budgeting as well as the processes of knowledge sharing.

To fulfil the new requirements, compliance-driven performance measurement practices are crucial. At the same time, improving the accuracy of accounting information is not enough to prevent performance “surprises.” The involvement of all managers within the organization is essential to ensure that accurate financial data provides real understandings of the operations and performance of the business. The active participation of managers at all levels is necessary to ensure that there is an integration of the three dimensions of governance: compliance, performance and knowledge. But while integrating governance is a team effort, finance managers are required to give particular inputs to all three dimensions, by:

- integrating financial and non-financial information;
- facilitating the access to performance measures at each level within the organization;
- improving the understanding of performance measures through ongoing interaction with business managers; and
- ensuring there is a real understanding of the actual performance of the business.

In addressing the previous issues, the case of GE provides useful insights. At GE, finance professionals are responsible for: (1) integrity and compliance; through the planning and reporting of activities, they are instrumental in ensuring the integrity of the financial statements that is essential for controllership purposes; (2) decision-making; they analyse financial measures to provide CFOs and CEOs with accurate information to make proper decisions; and (3) communication; they are the main channel of all the financial information in the business. They plan, report, analyse the business and its implications.

5.1. Compliance, Performance and Communication at General Electric

Within GE Oil & Gas, the finance function includes a *Financial Planning and Analysis* (FP&A) department as well as a group of *Finance Managers* who are located in the individual divisions, processes and functions.

FP&A is characterized by three major functions:

- (1) *Controllershship*. Through planning and reporting activities, FP&A managers are instrumental in ensuring that financial record-keeping is reliable, the procedures of financial reporting and disclosure are transparent, and resources are used efficiently and effectively.
- (2) *Planning*. FP&A managers analyse the financial measures to provide CFOs and CEOs with accurate information about the current state of their businesses, to enable them to make the “right” decisions.
- (3) *Communication*. The FP&A department is the main channel for the collection and distribution financial information within the business.

“FP&A operationalize planning, communication and controllershship” explained a senior GE FP&A Manager. “We investigate our financials to provide the CFO and the CEO with accurate information to make proper decisions. We plan, monitor and evaluate contribution margin, operating margin, cash flow, and all key financial measures. We estimate major short and long-term financing outlays, analyse projects to determine cost benefit based on economic return and strategic considerations, generate reports that provide a picture of current business standing and how this defines future business risks and opportunities.”

The *Finance Managers* supervise the budgeting and reporting activities within specific divisions, processes and functions. They coordinate business opportunities, plans and performance measurements, as well as ensuring the consistency of financial information, compliance with statutory obligations, and observance of common policies and processes. Given their responsibility for business forecasting and variance analysis, Finance Managers have to be physically located close to the business operations. On the one hand, they liaise with the FP&A department on such matters as financial closing, project reporting and ad hoc analyses, while on the other, they work closely with the operational managers to ensure that the financial and operating goals of the division/process/function are achieved.

6. CONCLUSIONS

The various codes and regulations on corporate governance, which have been issued in the last few years, have increased the attention that companies have given to compliance. In particular, the Sarbanes–Oxley Act has directly

involved the finance function, by requiring the CFO (together with the CEO) to certify the financial reports. These new requirements are forcing the CFO and the finance function to reconsider governance issues, along with the roles, skills, capabilities and tools that are required to fulfil their new responsibilities.

In light of the current debate and the emerging needs of finance managers, this paper has sought to reassess the notion of governance. Our contribution is to look at governance as an integrated framework, broadening attention beyond the need to ensure compliance with internal and external rules and principles, and to encompass the mechanisms used for achieving organizational performance and for managing knowledge.

Importantly, the implementation of an integrated governance system requires the active participation of the finance function. It requires a broad array of skills to support the three dimensions of governance, including:

- controlling/monitoring skills to improve both internal and external compliance (auditing, assurance, knowledge of internal and external rules and codes);
- knowledge of the business to improve organizational performance;
- experience of supporting decision making processes and team working abilities to improve performance and coordination; and
- interpersonal and communication skills to facilitate knowledge sharing and team working.

The finance function should not limit its involvement to integrity assurance and effective compliance. Finance experts also have to take an active role in identifying the financial consequences of process improvements as well as building a cross-functional language to collect and share business-oriented knowledge. In particular, the CFOs must ensure the finance function has finance experts with knowledge of the business processes, who participate in the strategic decision-making process, support front-line managers, and stimulate awareness of the financial consequences of the operations.

While implementing governance is a team effort, the CFO and the finance function are required to reassess the nature of governance, to bring their skills on compliance, performance measurement and knowledge management. These processes require common understandings, attitudes and beliefs. If finance experts are to be fully involved in governance issues they need to develop and maintain a common organizational language, not just in the finance function, but across all operations of the business.

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HOW TO MEASURE R&D PERFORMANCE: A DESIGN FRAMEWORK AND AN EMPIRICAL STUDY

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ABSTRACT

Designing a performance measurement system (PMS) for R&D is fundamental for supporting decision making and motivating people. However, it is very challenging, since efforts are not measurable and success uncertain. Although the issue is relevant, a definite approach has not been developed yet.

The paper studies the PMS design in R&D units of companies for which technological innovation is critical for competition. A framework is elaborated, that systematizes literature contributions and identifies the steps for designing an R&D PMS. Then, the framework is applied to a specific case, in order to evaluate its actual applicability and to show how literature on performance measurement can be integrated within a contextual system.

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1. INTRODUCTION

Defining and implementing a performance measurement system (PMS) within the company is considered a critical activity for supporting decision making, motivating people, stimulating learning, improving coordination and communication (Shank & Govindarajan, 1993; Burch, 2000). In other words, the PMS is nowadays considered fundamental for achieving the company's objectives. As a consequence, all the main activities, processes and/or functions within companies have recently become the object of a PMS: not only the primary ones, such as production or logistics, but also the supporting ones, such as the whole administrative process. According to this trend, R&D as well is being considered as a set of activities and processes whose performance should be monitored and measured, particularly because in many competitive contexts, technological innovation (and, hence, the results of R&D activities) is the main source of sustainable competitive advantage (Schumann, Ransley, & Prestwood, 1995; Kerssens-van Drongelen & Cook, 1997; Loch & Tapper, 2002; Bremser & Barsky, 2004).

However, defining a PMS for R&D activities is recognized in literature as a very difficult task; since effort levels may not be observable in quantitative, measurable terms, success is uncertain (and influenced by uncontrollable factors) and it can be assessed only after long delays (Tipping, Zeffren, & Fusfeld, 1995; Brown & Svenson, 1998; Kerssens-van Drongelen & Bilderbeek, 1999; Loch & Tapper, 2002). As a consequence, in the last years many contributions have been written aimed at discussing the subject and suggesting possible approaches (Pappas & Remer, 1985; Chiesa & Masella, 1996; Brown & Svenson, 1998; Hauser, 1998; Driva, Pawar, & Menon, 2000). Such contributions have so far concentrated mainly on *performance measurement*, i.e., on defining a set of dimensions of performance to be controlled and the metrics (or indicators) to be used for the measurement of such performance. Far less contributions are dedicated to the definition of a whole *performance measurement system*, i.e., an integrated system able not only to measure a specific set of performance, but also to explain the managerial and organizational meaning of each measure, to suggest the most appropriate use of each measure and to analyze R&D performance with respect to the overall company strategy. The main contributions in this direction come from Kerssens-van Drongelen and Cook (1997) and Kerssens-van Drongelen and Bilderbeek (1999), who applied the concept of Balance Scorecard (Kaplan & Norton, 1992) to R&D, and from other authors (Davila, 2000; Bremser & Barsky, 2004) who have adopted more recently a similar approach.

This paper aims at making a further step in this field, i.e., a deep study of the problem of defining a system for performance measurement in R&D units, and not only to identify some metrics and indicators. In particular, the focus is on the R&D units of companies for which technological innovation and, hence, R&D activities are critical for competition. These companies, in fact, are generally characterized by a very complex and dynamic R&D environment and, therefore, represent a challenging field for this study.

According to this aim, a reference framework for designing a PMS is identified in the paper: it represents a systematization of literature contributions in the field and describes the logical steps for the definition of the PMS for R&D. The framework, starting from the corporate strategy and the R&D strategy, comes to the definition of:

1. the dimensions of performance to be measured and the related indicators,
2. the structure to be defined for the measurement system, and
3. the process aspects to be implemented for the proper operation of the system.

In a few words, the suggested framework gives a practical guide that should help managers in the definition of all the elements of a PMS, in accordance with the overall company's strategy.

Then, the framework is applied to a specific case study, with the aim of:

1. Verifying the actual applicability of the framework in a real context, in which all the "contingencies" are taken into consideration, exploring in detail the problems and difficulties emerging during its use;
2. Enriching, if possible, the framework itself and/or modifying it, according to the evidence emerged during its actual use;
3. Giving a very detailed and concrete example of how the huge literature on *performance measurement*, which provides many suggestions in terms of dimensions of performance, indicators, process aspects, can be integrated within a *system*, internally coherent and adequate for a specific strategic context; and
4. Discussing the possible generalization of the framework, i.e., verifying if and how it can be applied to other contexts than the one analyzed in this paper.

The case study, as already pointed into evidence, has been selected in a context where technological innovation represents the critical source of competitive advantage. The real name of the company will be blinded in the paper for confidentiality reasons; it will be referred to with the term BIO. It is in fact a biotech firm focused on the development of innovative therapies

for the treatment of cancer and AIDS. This is an interesting case in which a company almost collapses on its R&D function that represents almost 90% of its overall activities.

The paper is structured as follows: Section 2 defines the adopted research method; Section 3 gives an overview of the literature on R&D PMS design and implementation and presents the utilized framework specifically devoted to the design phase; Section 4 describes the case study and the application of the framework; and finally, Section 5 discusses the results and draws some managerial implications.

2. RESEARCH METHOD

Coherently with most literature dealing with R&D performance measurement, the research method that was selected relies on a single case study. In spite of the largely acknowledged limitations of this approach, especially in terms of reliability and validity (Ginsberg & Abrahamson, 1991; Yin, 1994; Nixon, 1998), the case study method has the capability of capturing the whole complexity of the studied phenomenon and its “softer” aspects that could hardly be grasped if quantitative methodologies (e.g., surveys) were applied. Considering the aim of the empirical study, i.e., to deeply study the actual design of a PMS, the aforementioned advantage of the case study methodology has turned to be a critical point in the selection of the research approach.

BIO was thought to be a very suitable company for the case study because of its strong dependence upon research activities where measurement problems are the most severe. Its competitive advantage relies on its capability to be at the forefront of many technological domains, e.g., the use of therapeutic, suicide and cell marker genes, the genetic modification of cells by viral vectors and the design of therapeutic peptides. At the same time, BIO's top management was interested in critically discussing their ideas about the PMS design, in order to introduce such a system for monitoring research performance.

Information was collected using three main sources: interviews, internal documents dealing with BIO research activities, and publicly available data, that were crosschecked in an iterative triangulation process. The basic approach to data collection applied in the case study consisted in gathering, prior to personal contacts, as much information as possible from internal and publicly available documents. This allows using direct interviews to discuss data previously obtained and analyzed, more than for information

gathering. Almost all interviews were conducted with BIO's R&D managers and they were focused mainly on the criteria used to design the various elements of the PMS. Some interviews were also conducted with people from business development that allow for discussing BIO's general features and the strategic and environmental contextual factors.

There are two main limitations of the applied research methodology. First of all, the empirical base has been mainly built upon personal direct interviews with the company's top managers, thus allowing for empirical results to be likely biased by distorted and subjective interpretations and rationalizations. An effort has been made to mitigate these undesired effects, i.e., the triangulation of data drawn from different informative sources. Second, as most single case studies, the empirical research does not allow for any systematic generalization. However, it was not an intention of this empirical investigation to generalize from a single case study; the aim was to study the suggestions given by literature in an actual and extremely complex context in order to systematize and enrich them.

3. A LITERATURE REVIEW AND A FRAMEWORK FOR THE PMS DESIGN

Designing and implementing a PMS within the company is considered a critical activity for supporting decision making, motivating people, stimulating learning, improving coordination and communication (Shank & Govindarajan, 1993; Burch, 2000). In other words, the PMS is nowadays considered a fundamental tool for achieving the company's objectives (Neely, Platts, Gregory, & Richards, 1996). As a consequence, all the main activities, processes and/or functions within companies have recently become the object of a PMS: not only the primary ones, such as production or logistics, but also the supporting ones, such as all the administrative processes. According to this trend, R&D as well is being considered as a set of activities and processes whose performance should be monitored and measured, particularly because in many competitive contexts technological innovation (and, hence, the results of R&D activities) is the main source of sustainable competitive advantage (Schumann et al., 1995; Kerssens-van Drongelen & Cook, 1997; Loch & Tapper, 2002; Bremser & Barsky, 2004).

However, defining and implementing a PMS for R&D activities is a very difficult task, since effort levels may not be observable in quantitative,

measurable terms, success is uncertain (and influenced by uncontrollable factors) and it can be assessed only after long delays (Tipping et al., 1995; Brown & Svenson, 1998; Kerssens-van Drongelen & Bilderbeek, 1999; Loch & Tapper, 2002). As a consequence, in the last years many contributions have been written aiming at discussing the subject and suggesting possible approaches (Pappas & Remer, 1985; Chiesa & Masella, 1996; Brown & Svenson, 1998; Hauser, 1998; Driva et al., 2000).

First of all, the literature emphasizes that the term R&D includes many activities that are very different in nature (basic research, applied research, development, etc.). Hence, dealing with this variety means defining a specific PMS for each different activity (Kerssens-van Drongelen & Cook, 1997). In this paper, the focus is specifically on basic and applied research tasks.

Second, literature identifies three main logical phases that should be considered for an actual use of an R&D performance measurement system:

1. The PMS design, in which all the characteristics and elements of the system are defined (Kaplan & Norton, 1992; Kerssens-van Drongelen & Cook, 1997; Kerssens-van Drongelen & Bilderbeek, 1999; Davila, 2000; Bremser & Barsky, 2004);
2. The PMS implementation, in which the PMS is actually put into practice (Neely et al., 1996; Pawar & Driva, 1999; Driva et al., 2000; Bowon & Heungshik, 2002; Sandstrom & Toivanen, 2002); and
3. The impact of the use of the PMS. The aim here is to understand the effects of the adoption of the system. In particular, it has been pointed out that the use of a PMS for R&D activities may have many positive effects, such as improving coherence and relevance of research project portfolios, introducing corrective actions in projects, improving learning and enhancing staff motivation (Kerssens & Bilderbeek, 1999; Davila, 2000; Loch & Tapper, 2002; Godener & Soderquist, 2004).

In this paper the focus is specifically on the first phase, i.e., the problem of designing a PMS for research activities. The many suggestions coming from the aforementioned literature can be synthesized, in our view (Chiesa, Frattini, Lazzarotti, & Manzini, 2005), as shown in Fig. 1. Such a framework describes the logical entities to be considered in the definition of the PMS for R&D and it can be helpful to practically guide the system design. The framework is made up of two parts:

- The contextual factors;
- The consequent PMS's elements;

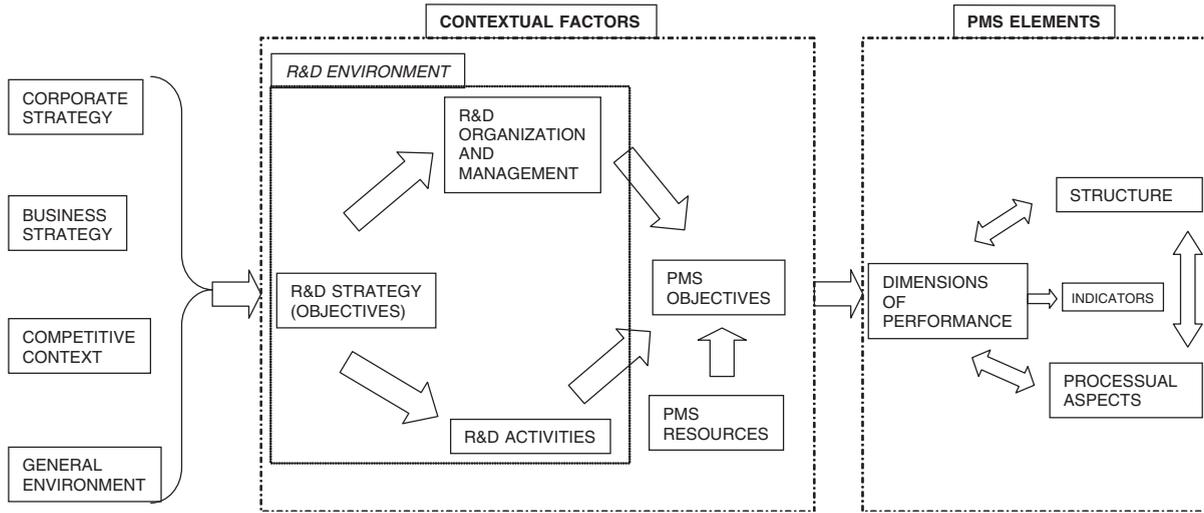


Fig. 1. A Reference Framework for Defining a Contextual R&D PMS.

and it enlightens the following aspects:

- First of all, the PMS should ensure coherence between the R&D process and the company's strategy (Kerssens-van Drongelen & Cook, 1997; Nixon, 1998; Loch & Tapper, 2002; Sandstrom & Toivanen, 2002). The "technology strategy needs to be cascaded down to operational measures at the department level to which the R&D employees can relate" (Loch & Tapper, 2002). Hence, the critical success factors of the company must be considered when defining the specific R&D objectives and, then, the elements of the PMS;
- According to the contextual approach to PMS design (see Kerssens-van Drongelen & Cook, 1997, for a literature review), the competitive context is to be considered, (in terms of rules of competition and main competitive pressures) as well as the general environmental features (macroeconomic factors, institutional norms, social and cultural characteristics);
- The strategic contextual factors (i.e., the corporate and business strategy, the competitive context and the general environmental features) drive the constitution of a definite R&D environment, i.e., the identification of some specific R&D objectives, the definition of the adequate R&D organization and management, the specification of the R&D activities to be internally carried out;
- The same strategic contextual factors affect the definition of the resources (people, time and money) that the company allocates to the design and implementation of the R&D PMS;
- The design of a PMS involves the definition of the specific objectives of the PMS and of the PMS elements (Kaplan & Norton, 1992; Kerssen-van Drongelen & Bilderbeek, 1999; Bremser & Barsky, 2004; Godener & Soderquist, 2004). Such elements are: (i) the dimensions of performance to be monitored and the related indicators, qualitative and/or quantitative; (ii) the structure of the system, i.e., the articulation into "controlled objects"; (iii) the process aspects to be defined for a proper working of the system, i.e., all the norms and rules governing the PMS, the timing and frequency of measurement for each controlled object and for the different dimensions of performance, the role and tasks of people involved in the implementation of the system;
- The PMS's objectives are driven not only by the R&D goals, but also by the management style, the organization, the nature of activities. For example, a leadership style may stress more or less the motivational aspects of the system; the organizational structure adopted defines the possible controlled "units"; the level of creativity and complexity of a definite

activity can require a particular attention to researchers' motivation and coordination (Goold & Campbell, 1987); and

- The resources that can be dedicated to the design of the PMS influence the PMS's objectives as well as the PMS elements. As a matter of fact, they may limit the quantity and quality of information collected (e.g., the number of measured performance, the techniques and indicators used for the measurement, the frequency of data collection, etc.) and thus the achievable purposes.

A more practical version of the framework, i.e., the theoretical framework integrated with a list of key questions (Chiesa et al., 2005), is reported in Fig. 2. It has been applied in the real BIO context with the aim of guiding the definition of a PMS for the research activities. After a brief description of the company's profile, BIO's experience in the PMS design is discussed in detail.

4. THE CASE STUDY

In this section of the paper, the application of the framework previously presented is discussed in a real context, i.e., an Italian biotech company working in the field of molecular medicine. The purpose is to understand how the suggestions drawn from the literature in terms of PMS design principles can be actually developed within a real research environment, so that unpredictable limitations, application difficulties and operative solutions can be highlighted and used for enriching the theoretical framework. This explains why the selected firm represents an ideal setting for the empirical investigation, considered its heavy reliance on the results of its internal research activities and the inherent complexity of the latter. Moreover, the company had not have any PMS for its research activities before it was investigated by the authors, but it expressed the intention to exploit this opportunity to design and then implement one. This allowed the authors to actively participate to the design of a PMS for research activities and to study on the field the potentiality and limitations of the developed theoretical framework.

4.1. Company's Profile and Contextual Factors

BIO is a company operating in the biotechnology sector for the research and development of new therapeutic compounds, through a highly innovative approach in the area of molecular medicine. The company is located in

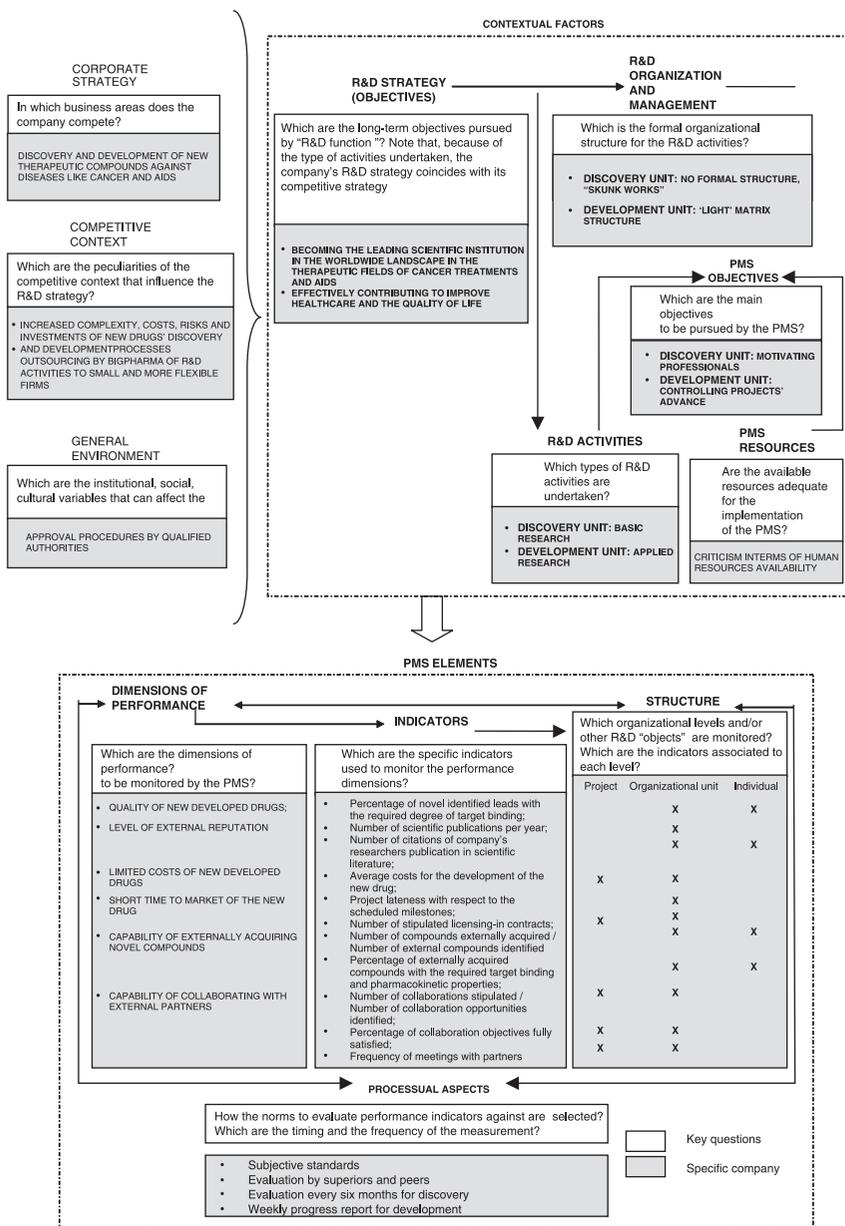


Fig. 2. The Practical Framework.

Milan (Italy) and its mission is to provide, thanks to the combination of its know-how, proprietary technology and production facilities, effective and permanent remedies to high social impact diseases, such as cancer and AIDS, by developing innovative molecular medicine therapies to enhance healthcare and the quality of life.

BIO began as a spin-off of an important Italian research institute, which was the first to successfully conduct a gene therapy clinical trial in Europe. The company was founded in 1997 as a joint-venture between Boehringer Mannheim (subsequently acquired by Roche) and the managing company of the research institute's science park. Initially, BIO's mission was to supply molecular diagnostic, therapeutic reagents, services and processes necessary for human clinical trials in the area of molecular medicine, according to Good Manufacturing Process (GMP) and Good Laboratory Practice (GLP). Over the first 3 years of its activity, BIO developed a unique know-how and proprietary technology platform that enabled it to start developing its own therapeutic product in the field of gene and cell therapy. The value of BIO's competencies was recognized by a European venture capital fund that took over the Roche equity position at the end of 1999. With this new financial partner, the company initiated, at the end of 2000, a new phase of growth focusing its mission on the discovery and development of novel therapeutics in the area of molecular medicine, thus following a common path among small biotech companies (Chiesa et al., 2005). At the end of 2000, BIO acquired a company that was the basic research arm of the research institute's science park in the area of gene therapy and molecular medicine. The merger combined BIO capabilities in production and development of new therapeutics and the acquired firm's research skills and intellectual property.

Nowadays BIO mainly operates as a "drug agent" biotech firm (Chiesa, 2003). In fact, starting from lead identification activities, the company's business model includes lead optimization tasks, pre-clinical and clinical trials, until phase II is reached (see for an overview on the R&D process in the pharmaceutical industry Paoletti, Nicosia, Clementi, & Fumagalli, 2001; Muffatto & Giardina, 2003). At this point, the novel compound is generally licensed to big pharmaceutical companies that end up the required clinical trials and undertake marketing and sales activities that are necessary to successfully launch the product into the market. When the company was founded, its business model was exclusively focused on the supply of scientific services in the field of cell and gene therapy to external clients; therefore, a great shift has occurred since then. Nowadays, in fact, the provision of scientific services has a very limited part in the company's business model, since it accounts only for 20% of the overall turnover.

Anyway, it serves the purpose of generating cash flows that finance discovery and development activities and of maintaining the company's core competencies in the field of gene therapy, this having positive effects on the firm's international visibility.

Nowadays, BIO has almost 55 full time people out of 70 overall work force, but the company means to grow, in the next 10 years, to a 100–150 stable workforce, focusing significantly on the activities of new drugs' discovery and development. The company has taken the challenge to build expertise in the clinical development of promising technologies, with the goal of translating outstanding basic research into patient treatments. According to this philosophy, BIO is focusing its R&D efforts in the therapeutic areas of cancer and AIDS, where it means to become the leading scientific institution in the worldwide scenario, and in the development of new gene transfer technology. Today, BIO owns a strong and highly diversified pipeline consisting of 3 products in clinical phase, 2 products in advance preclinical development and several research projects, and allocates 15% of its overall expenditures (almost 2 million € per year) to discovery activities.

BIO is a very flexible and simple organization, with few management lines, that allows for rapid and effective interactions between the different units involved in the new drug's R&D process. The top management level includes the founder and president, a general manager, a chief financial officer, and a manager of business development. Behind this managerial line, there are the directors of the different organizational units BIO is composed of. They are:

- *Discovery*: within this unit, 12 full-time researchers and technicians work. Their main strategic objective is to provide new candidates for new drugs' development; the leads can be internally identified or acquired from external organizations through partnerships or licensing-in contracts;
- *R&D*: this organizational unit is made of 2 sub-units: the *development team* and the *quality assurance* one. The former, where almost 20 people work, has the purpose of developing processes and methods for novel drugs synthesis, achieving the target quality level and respecting conditions of economic efficiency. The researchers of the development team are aggregated, on the basis of the distinctive competencies they own, into two sub-groups, gene therapy and biochemical methods, that report to different directors. The quality assurance team, on the other hand, is responsible for the effective application of GMP and GLP rules along the whole development process;
- *Regulatory affairs*: this organizational unit is assigned the responsibility for analyzing the results of the development team's effort, in order to

evaluate if the safety and effectiveness requirements, imposed by national and international standards and the qualified regulatory authorities, are satisfied by the candidate that is being developed; and

- *Operations*: this unit is responsible for the preparation of the pre-clinical and clinical trials that are actually undertaken by the *clinical group*.

When contacted by the authors, BIO's purpose was to design a PMS to monitor the performance of the discovery and development teams; they represent, in fact, the organizational units where most of the researchers work and where the most R&D intensive tasks are undertaken, this making the challenge of measuring performance very critical. Moreover, the two aforementioned organizational units represent an ideal context for the study of the actual design of the PMS and, therefore, are the subject of the case study discussed as follows.

The discovery and development units differ in terms of the type of activities they are responsible for, as well as from an organizational point of view. The discovery team has very limited dimensions that, together with the high level of creativity required in lead identification and lead optimization tasks, do not suggest the adoption of structured and formalized organizational architectures. In fact, researchers are not aggregated on the basis of definite organizational profiles, neither they participate to research projects that are planned and monitored by higher-level managers. The activities carried out within this organizational unit, in other words, take the form of a "skunk work" effort, since researchers only share scientific interests in the therapeutic area in which they are specialized, but no other organizational mechanism is adopted. On the other hand, in the development team a matrix organization is in place; researchers are grouped into two departments, gene therapy and biochemical methods, according to the scientific field where they operate. This "departmental dimension" of the matrix structure is necessary to assure a high level of specialization to the company's core scientific competences. Within each department a director is appointed; he is responsible for the management of the activities and the resources in the department and for its scientific results. On the other hand, a "project dimension" is important to put together the transversal skills that are necessary to produce the required output. Within each project a team leader is appointed as well; he is, in general, the researcher with the major experience, or charisma, or specialized in the most crucial discipline for the success of the project. He is responsible for the results achieved by the team. In this matrix structure, however, a major organizational power is assigned to the department structure. These organizational differences also influence the

managerial style that is adopted within the two units; a more paternalistic and participative one is necessary in the discovery team, so that an environment conducive to creativity and innovation is created. On the other hand, the need to control and monitor the projects' advance within the development team calls for the adoption of more bureaucratic mechanisms of management and control.

BIO's top management clearly realized that the measurement and control of researchers' performance should have very different purposes when applied to the discovery and development teams because of the differences in their activities and goals. Within a discovery environment, it is important that the measurement of performance is aimed primarily at motivating researchers towards the identification of novel leads. Moreover, they should be equally stimulated at scanning the external environment and identifying opportunities that can be acquired through licensing-in contracts. On the other hand, since the development team activities are mainly organized on a project basis, the PMS should have first of all the purpose of controlling the projects' advance in terms of respect of scheduled time, costs and quality levels. This makes sense also because the degree of creativity required in typical development tasks is much lower than the one needed in a pure discovery environment.

This analysis of the contextual factors introduced the problem of designing an effective PMS for the discovery and development units that is capable of reflecting the discussed differences between the two. The resources dedicated to the design of the PMS, anyway, were very scarce; the manager of business development, together with the heads of the discovery and the R&D teams, were given the responsibility for this effort, but they could dedicate to it only a small percentage of their time. This is another reason why the PMS was designed to be applied to the discovery and development teams that represent only a part of the overall organization.

4.2. The PMS Design

Since the supply of scientific service accounts for a small percentage of BIO's turnover – that will moreover diminish in the future – it can be stated that the biotech company operates in a single business area, i.e., in the discovery and development of new therapeutic compounds against diseases like cancer and AIDS, where it acts according to a drug agent firm business model. The strategic goal that pervades the company's efforts in the therapeutic fields of cancer and AIDS, i.e., becoming the leading scientific institution in the

worldwide scenario and effectively contributing to improve healthcare and quality of life, translates into specific dimensions of performance that the PMS being developed should carefully take into account. The most important dimensions are the quality of new developed drugs and their limited costs, so that they can be economically afforded by patients. Anyway, the commercial success of the new drug significantly depends on the timing of its launch, which is influenced mainly by the time length of the development process. Moreover, it is critical to monitor the level of external reputation of the company, considering the importance this performance has on the possibility to sign contracts with big pharmaceutical firms for the latest stages of clinical trials and the new drug's market launch and distribution. Finally, a critical competitive factor in BIO's business area is the capability to proactively scout the external environment in order to identify promising technological opportunities to be exploited through different forms of collaborations or license agreements. Therefore, critical performance dimensions turn out to be the capability of externally acquiring new compounds to be internally developed and to collaborate with external partners. What is interesting to highlight is that these performance dimensions refer to the company's R&D activities as a whole, but the discovery and development teams contribute to their achievement in different ways and with different competencies. It is thus necessary to translate these aggregate dimensions, which directly mirror the critical success factors for the company's competitive strategy, into performance indicators that should be applied specifically to the discovery or development unit.

BIO's top management thought that the indicators used to translate into practice and measure the critical performance dimensions previously discussed should allow for a simple and direct measurement and should be collectively discussed, even if not questionable. This implied that quantitative indicators were preferred; anyway, the characteristics of uncertainty, risk and un-measurability of R&D, that are particularly stressed in a research environment, make it necessary to integrate quantitative indicators with non numeric and qualitative ones. This is clear in the case of BIO, where both types of measures are applied. The interesting point in the design of the performance indicators is that particular attention was paid to differentiate them along two dimensions: the type of organizational unit they are applied to (discovery or development team) and the orientation of the research activities whose performances are measured (internal research or external scouting and acquisition of novel leads). The designed indicators are summarized in Fig. 3. Since each operative indicator can be matched to the more general performance dimension it directly measures, it is thus

		ORGANIZATIONAL UNIT	
		DISCOVERY	DEVELOPMENT
TYPE OF ACTIVITY	INTERNAL RESEARCH	<ul style="list-style-type: none"> • Percentage of novel identified leads with the required degree of target binding; • Percentage of novel optimized leads with the required pharmacokinetic properties; • Number of scientific publications per year; • Number of citations of company's researchers publication in scientific literature. 	<ul style="list-style-type: none"> • Project lateness with respect to the scheduled milestones; • Average costs for the development of a new drug; • Number of citations of company's researchers publication in scientific literature.
	EXTERNAL ACQUISITION	<ul style="list-style-type: none"> • Number of stipulated licensing-in contracts; • Number of compounds externally acquired / Number of external compounds identified; • Percentage of externally acquired compounds with the required target binding and pharmacokinetic properties. 	<ul style="list-style-type: none"> • Number of collaborations stipulated / Number of collaboration opportunities identified; • Percentage of collaboration objectives fully satisfied; • Frequency of meetings with partners.

Fig. 3. The Applied Performance Indicators.

possible to identify how the discovery team and the development one specifically contribute to the company's results in terms of critical performance dimensions (see Fig. 2 for more details).

The structure of a PMS defines which are the organizational objects that are subject to measurement. This choice is mainly driven by the basic purpose of the PMS (i.e., motivating people, stimulating coordination and information flows or controlling projects' advance) and by the organizational structure of the unit where research tasks are carried out. Since BIO's PMS objectives vary from the development to the discovery team, choices in terms of PMS structure differ too. In the case of the discovery unit, the PMS aims primarily at motivating people and stimulating creativity and innovation; moreover, no structured organization is in place. As a consequence, indicators are applied to individual researchers or to the discovery group as a whole. In the latter case, the group is represented by its director who is made responsible for the scientific results of its team. Anyway, the assignment of performance indicators to individuals or to the whole organizational unit is driven by the necessity to make the measured subject responsible only for those performance measures it can directly and completely influence. The

development team's work, on the other hand, is organized by projects, that are activated when a novel optimized lead is delivered by the discovery group. These projects lead to the development of the processes and methods that are necessary to produce the novel drug on a large scale. Within this context, the PMS has basically the purpose of controlling the projects' advance in terms of respect of scheduled milestones and target cost and quality levels; as a consequence, the organizational object that is subject to the measurement is the project itself and, for particular types of indicators, the development team as a whole.

With respect to the designed process aspects, it is necessary to note that researchers and technicians, because of their high level of education, need a significant degree of autonomy to work effectively. This autonomy is typical of both the discovery and the development group and requires that the measurement system is not too strict and constraining. This influenced the choices in terms of designed norms. Subjective standards are prevalent in order to encourage people initiative and risk taking also in case the actual results differ from those established. For example, an actual number of patented ideas that is lower than the designed standard can be anyway evaluated as a good result in case of particular contingency variables; if subjective evaluations by superiors and peers are used that can be less severe and constraining than a quantitative approach. The timing of the measurement system and the evaluation procedures radically differ from the discovery to the development team. In the former case, individual and group objectives are assigned at the beginning of the year while the evaluation of the objectives progressive achievement occurs every 6 months. Besides, in the case of the development team objectives are defined at the beginning of the project, within the kick-off meeting to which the directors of all the company's functions participate in order to assure a high level of intra-organizational coordination. Then, weekly progress reports are scheduled, where intermediate results are presented to the director of the development team and an evaluation of the project performance is carried out. These milestones are similarly applied to the performance evaluation of collaborations undertaken with external partners for the development of production processes and methods.

5. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The paper aims at making a step further in the understanding of the problems to be faced when defining a system for R&D activities performance

measurement. According to this aim, a reference framework is adopted and discussed that represents a systematization of literature contributions in the field and describes the logical steps for a proper definition of the PMS for R&D, thus giving a “practical” guide that should help managers facing this challenge. The scheme here suggested explicitly establishes relationships between contextual factors (i.e., dimensions of the R&D “environment” – R&D strategy, R&D organization and management – R&D activities, measurement of system objectives and resources available for the system design and implementation) and PMS’s elements that are reciprocally interrelated, coherently with the systemic nature of the PMS.

Then, the paper studies the application of the framework within a real context, i.e., a small biotech Italian company that operates according to a drug agent business model. The aim of this empirical investigation was to study how the reference framework, that should help managers design the PMS for their R&D activities, actually works in a real context, so that unpredictable limitations, application difficulties and operative solutions can be highlighted. The studied company represents an ideal context for the analysis of R&D performance measurement problems, since the output of its discovery efforts are critical for its competitive advantage.

Generally speaking, the case study has shown that the framework is a valuable tool for supporting the design of the R&D PMS because it forces managers to reflect on the contextual factors that should drive their choice in terms of PMS elements design. Moreover, it introduces a systemic view of the measurement system that clearly enlightens the importance of designing coherently the different elements it is composed of. The applied research methodology does not allow to statistically generalize the reference framework to firms belonging to any industrial sector; anyway, it is possible to analytically extend it to other research-intensive organizations operating in the field of pharmaceutical research, considering also previously application of the framework that can be found in literature (Chiesa et al., 2005).

A previous study by the authors (Chiesa et al., 2005) has discussed the case of a company operating in multiple business areas, each characterized by specific critical success factors and competitive strategies, that necessarily translate into different R&D strategies, R&D organizational and managerial principles and PMS objectives. As a consequence, the elements of the PMS (i.e., dimensions of performance, indicators and structure) should reflect this duality in the firm’s business model, so that the contributions of R&D activities to the company’s success in both business areas are monitored and evaluated. The present paper, on the other hand, shows the case of a firm that operates in a single business area, but whose research activities

are separated into two different organizational units that have different objectives and require specific organizational and managerial principles. The design of the PMS is radically influenced by this separation of the company's R&D tasks into two organizational units. In fact, even if the overall competitive strategy is unitary, many other contextual factors (i.e., R&D objectives, R&D activities and R&D organization and management) differ from one organizational environment to the other. This explains the necessity to design a PMS whose elements reflect this duality. From a managerial point of view, these insights show the importance of exploring the possibility to articulate the PMS into two or more sub-systems that have specifically designed elements and fit the performance measurement necessities of different organizational research units or business areas. In this case, the internal coherence has to be assured among the elements of the same part of the PMS. The decision to divide the PMS into more parts should be justified by the existence of different contextual factors in different research organizational units or company's business areas; these differences should be proactively identified by managers in the design phase of the PMS.

Moreover, the case study has enlightened another interesting aspect in the application of the reference framework directly descending from the "open" structure of the R&D process that is common to many industrial sectors and has largely been acknowledged in literature (Chesbrough, 2003). In the last few years, firms have been increasingly relying upon external sources of scientific and technical inputs capable of supporting their R&D efforts. This is true also in the pharmaceutical sector, where companies engaged in the discovery and development of new drugs are accustomed to look for external partners from which they can acquire high-level scientific services (e.g., high-throughput screening) or candidate compounds to be licensed-in and exploited within the proprietary innovation process. As a consequence, internal R&D has to proactively scout the external environment in order to identify innovation opportunities that reside outside the firm's boundaries, define the appropriate mode for their acquisition and integrate them within the proprietary competence base. The case of BIO shows that the modified strategic purposes of internal R&D organizations impacts on the design of the PMS for research activities. This is due to the necessity to evaluate researchers and technicians not only on the basis of their capability to internally generate new leads or to develop effective production processes and methods, but also with respect to their capacity to externally identify and acquire them. The elements of the PMS that are mainly influenced by this necessity are the evaluated performance dimensions and the indicators used to measure them.

Because of the applied research methodology, the synthetic framework discussed and actually applied in the paper represents an important empirical basis for future analysis. First of all, it would be interesting to investigate if it can be usefully applied to other Contract Research Organizations (CROs) working in the field of pharmaceutical research, conducting further case studies on the matter. This will give us the opportunity to improve and correct the proposed scheme and, probably, generalize it, considering the similarities between (CROs) in terms of type of activities and strategy. Moreover, it would be interesting to study, by means of surveys and other case studies, the possibility to adapt the framework to innovative companies working in other industries. This will probably require a deep change in the selected dimensions of performance (and related indicators), due to completely different types of activities and business models and, therefore, critical long-term objectives.

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ENHANCING THE MEASUREMENT BALANCE: GENERATING BUSINESS MEASURES FOR A PERFORMANCE APPRAISAL SYSTEM

Zvi E. Josman

ABSTRACT

Performance appraisals (PA) are a critical component of any performance management system. This action research study focused on generating reliable and valid organizational business measures for multi-level line and staff functional workgroups in a major multi-national service corporation in Asia-Pacific. These objective measures were needed to complement personnel performance measures, to optimize the balance between measures.

The methodological approach described includes sampling procedures, data collection methods and data analyzes. Measures for respective target functions were derived based upon specific criteria: outcome measures in functional activity areas; organizational value-creation measures; and process measures of functioning.

Findings and rankings of functional importance for workgroups and differentiated roles are presented. A four-level factor conceptual model, linking value and evaluative measures, is proposed for interpreting findings

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and recommending applications of the business measures. Recommendations for implementing business measures at group and individual functional levels, as well as implications for performance evaluation are discussed; suggestions for further study are proposed.

INTRODUCTION

The corporate Performance Appraisal (PA) constitutes a strategically critical HR system, and represents an essential component of any overall corporate performance management initiative. This study describes an action research study conducted with the specific purpose of generating reliable and valid organizational business measures (BMs) for corporate-wide functional groups. The purpose of deriving and validating these objective measures was to provide and complement PA system measures for all respective employee levels throughout the corporation. The method for conducting this focused study is described in full, based upon the specific methodological approach. Likewise, procedures for sampling groups, data collection, analyzes of findings, and final recommendations for deployment of valid new BMs are detailed.

THE PERFORMANCE APPRAISAL SYSTEM

During the past 3 years, a new customized PA management system was designed, developed and trial-tested at a major multi-national corporation (MNC) in the service industry, based in the Asia-pacific region. This PA system was initiated organization-wide and implemented formally during the past year. In the design of the new PA system, specific issues were addressed and a methodology incorporating a number of key concepts was implemented, with the goal of substantially advancing the existing framework and practice of PA. The key guiding issues were:

- (1) The linking of assessment of performance to the enhancement of performance. The design of the current PA process and instruments provided a structured method for managers to pinpoint performance problems and thereby address both performance improvement as well as personnel development issues.
- (2) A mandatory link between *personnel performance* and *actual business performance*.
- (3) A method and process for all managers to:
 - (i) diagnose, intervene and manage employee performance;

- (ii) address personnel development in a comprehensive and systematic manner;
- (iii) enhance functional–organizational performance and support business decisions.
- (4) Maximizing the reliability and utility of generated ratings for evaluating performance and enhancing employee and group-level work performance.
- (5) Ensuring user-friendliness of all tools, instruments and procedures, as well as comprehensive, yet straightforward guidebooks and supporting documents.
- (6) Ensuring validity of all rating components and items for employee evaluation, while also incorporating the relevant behavioral competencies (CPDs – Critical Performance Dimensions), as identified and developed in a previous company study (prior to the development of the new PA system).
- (7) Maintaining the highest technical proficiency standards and best PA practices regarding the instruments and rating forms, and meeting psychometric properties for effective differentiation of performance levels.
- (8) Ensuring alignment with ethical and propriety standards within corporate policy and practices, while incorporating issues of fairness and equal opportunity among minorities.
- (9) Integrating and automating the obtained data within existing organizational databases and computer platforms.

GENERATING BUSINESS MEASURES FOR CORPORATE FUNCTIONAL GROUPS

The subjective nature of most PAs has led many to conclude that such appraisals are frequently error-prone. Therefore, it seems plausible to support a preference for using objective performance data (such as financial and productivity figures), whenever available, rather than subjective supervisory ratings to assess employee performance.

This assertion, however, may be superficial and in fact misleading: it is highly likely that objective data may, in fact, produce less effective performance measures than subjective ratings, because outcome measures may not accurately represent employee contributions which validate performance. For example, an employee who does an outstanding job of dealing with and compensating for defective materials received, while overall production itself may be reduced due to these materials. If not for the employee's efforts, production would have been even lower. In addition, objective measures can

narrow the focus of an employee’s attention on particular outcomes, with a negative effect on other performance facets. For example, concentrating on quantity may neglect quality and follow-up service, to the long-term detriment of the organization.

While objective indicators are considered the most reliable and inherently valid indicators of performance, however such data can be difficult and expensive to collect. In addition, there are substantial reservations regarding the claim that objective data archived in organizational records, if available, constitute a “gold standard” metric. Thus, it is vital that a good balance between the two types of subjective and objective measures be found (Gomez-Mejia, Balkin, & Cardy, 2000).

The new PA system, as clarified above, emphasized a linking of employee performance to business performance. Thus by design, a combination of subjective evaluation measures with objective, verifiable BMs was mandated, with the goal of producing an optimally balanced system for evaluating overall employee performance.

At the outset, a number of key BMs were pinpointed for incorporation within the new PA system. It became readily apparent that such objective measures served primarily operation-level functional groups, where clear performance measures, relevant to all hierarchical organizational levels, were in place. The following Table 1 illustrates some of the measures developed and endorsed.

Measures were derived, based upon quantifiable measures, such as customer satisfaction (survey based), financial indicators (e.g. market share), and profitability goal measures. A process study of the new PA system revealed that the majority of measures developed were considered adequate and comprehensive, however not entirely flawless (Internal Pilot Study, April, 2003).

Table 1. Business Measures and Organizational Levels.

Organizational Level	Business Measures
Director	Industry comparative customer satisfaction, market share, group contribution and quality indicators
Senior manager	Customer satisfaction, customer retention/satisfaction, local contribution, quality indicators & operational costs
First-level manager	Customer complaints, productivity and process output (actions/time), overtime (% hours), customized manager metrics
Frontline employee	Specific output and productivity elements (e.g. actions/time) and quality indicators (e.g. defects, rejects)

Organizational managers endorsed recommendations to proceed with these measures with the aim of making formative improvements and subsequent adjustments after organization-wide PA system implementation.

These measures however, fell alarmingly short of adequately accounting for non-functional groups, where valid, quantifiable measures were neither available nor developed. Thus the need for valid BMs for functional groups whose activities were not readily demonstrable in terms of business outcomes or tangible contributions (e.g. ROI, market share, volume) became clearly evident.

This current study aimed at generating a set of valid and reliable measures for all non-operational groups, whose BMs have yet to be determined. The overall driving criterion for generating these measures was represented by a criterion of value creation for the overall organization. The measures derived from the present study incorporated:

- (1) outcome and result-based measures, representing the specific functional area of activity;
- (2) value-creation measures for the MNC;
- (3) process measures of functioning – an approach adapting a value-driver tree concept.

METHOD

An action research approach was employed for deriving appropriate BMs for all corporate non-operative functional groups. The study employed a field-based, “bottom-up” method and procedure for data collection and subsequent analysis. Specifically, a qualitative method was required for eliciting and gathering data from key organizational informants at each respective functional level. The data essentially was derived from statements and viewpoints representing each functional level, regarding the type and nature of value created for the company by their respective function. The data were generated from both managers as well as employees from all functional groups. Four key functional groups, constituting the major corporate non-operative functions, were selected for inclusion in the study: Finance, Information Technology (IT), Human Resources (HR), and Planning and Engineering (P&E). The main study efforts toward generating the current BMs included:

- (1) Identification of BMs through interviews with managers. The interviews were conducted by the principal researcher (an external consultant) and

three additional corporate psychologists. Interview assignments were based upon geographical dictates.

- (2) Conducting of separate focus group meetings with managers and employees from each functional group. Both the interviews and focus groups facilitated the construction of relevant, valid and appropriate business outcome measures.
- (3) Analysis of all collected data and subsequent development of a conceptual model for the integration of all derived measures.

SAMPLE

The MNC employs over 22,000 people throughout a wide geographically dispersed region. The study focused on manager and employee representatives from five countries within the overall region. All interactions for data collection were conducted at the Hong Kong and Singapore corporate headquarters. The implicit assumption of this current study was that each functional non-operational group of managers and employees comprises key informants regarding their respective job-functions and value contributions. As such, they were viewed as an essential link to generating the required measures. Moreover, it was assumed that all understood and the (a) essential competencies involved in conducting their functional activities, (b) appreciate and share a tacit knowledge of value-creating performance factors.

All participants had at least 5 years work experience within the company, as well as a minimal 2 years experience in their present functional group. In addition, the managers were selected for interviews and focus group meetings based upon their formal responsibility for specific functional group employees. Their functional groups were characterized as high, average or low performers, based upon existing performance review scores. Employees from each functional group, ranked likewise at either of the three performance levels, participated in function-specific focus groups. As Table 2 shows, 20 focus groups and 35 interviews were conducted, and 88 managers and 103 employees participated in the data collection sample.

PROCEDURE AND DATA COLLECTION

Sample Construction

- (i) Identification and determination of designated non-operations sample group requirements.

Table 2. A Summary of the Data Sample.

Non-Op Function Group	Location	Date	Sample Group Employees	Sample Group Managers	Interviews	Focus Groups
Finance	HK & SG	19/2/04	7	9	4	2 (1-Employee/1-Manager)
Finance	HK	20/2/04	16	17	5	3 (2-Employee/1-Manager)
P&E	SG	21/2/04	9	9	4	2 (1-Employee/1-Manager)
P&E	HK & SG	22/2/04	12	8	3	2 (1-Employee/1-Manager)
		26/2/04				
HR	SG	22/2/04	15	10	5	3 (2-Employee/1-Manager)
HR	SG	22/2/04	5	9	3	2 (1-Employee/1-Manager)
		26/2/04				
IT	HK & SG	1/3/04	20	14	6	3 (2-Employee/1-Manager)
IT	HK & SG	2/3/04	19	12	5	3 (2-Employee/1-Manager)
TOTAL			103	88	35	20

Note: IT = Information Technology; HR = Human Resources; P&E = Planning and Engineering; HK = Hong Kong; SG = Singapore.

- (ii) Identification of designated non-op sample participants. A sample of employees rated, overall, as high, average and low performers were identified for each functional group.
- (iii) Identification and assignment of chosen samples of managers for interviews or focus groups.
- (iv) All interviews and focus groups were arranged and conducted within a two-week period. Seven interviews involving managers from distant locations were phone-based. All other interviews were structured, and conducted in a one-hour, one-on-one session. Focus groups were conducted within a 1.5–2 hour session, with two facilitators.

Conducting of Interviews and Focus Group Meetings

- (i) A series of individual interviews with managers from each functional group was conducted (in-person or by phone), focusing on the range and nature of work performance and the group contribution of value to the company. In addition, the interview also aimed at identifying the BMs by characterizing the high, average and low performers in these groups.
- (ii) A series of focus group meetings were convened, with approximately 8–10 selected participants per group. Focus groups were conducted separately with either managers or employees representing each functional non-op group.

- (iii) At the outset of both interviews and focus groups, a general outline of the intended purpose of the meeting and the overall initiative to generate BMs was provided. In the focus group meeting, all initial value statements were gathered and displayed on flip charts and served as a basis for the group interaction, the clarification discussion, and the subsequent ranking of relative item importance.
- (iv) The following questions were posed in both the manager interviews and focus groups:
 - (1) What value does your functional group provide and contribute to the company?
 - (2) What business measures (BMs) best represent your contribution to the company?
 - (3) What BMs do not represent your contribution to the company?
 - (4) What are the relative advantages and/or disadvantages of each value statement?
 - (5) What relative weights would you propose for each value statement?

Objective Data from Performance Appraisals

The study also called for identifying ‘hard’ data measures characterizing and differentiating between high, average and low performers – based upon their respective hard data records. The purpose of this effort was to include representative behaviors (of each level of performance), the organizational responses (e.g., awards and bonuses), and also attained outcomes. However, a closer examination of this data-collection option revealed a lack of substantial data available from previous performance reviews for corroborating with other aspects of this study. Thus this option was not utilized.

DATA ANALYSIS

Focus Groups

After completion of all focus groups, a preliminary sorting of all the collected data were performed. A descriptive statistical analysis was performed (using SPSS V.11) for all value statements gathered from the various focus groups. All group-level data were initially individually analyzed and then subsequently synthesized for commonalities, respectively for each functional group. Subsequently, all value statements were ranked in terms of their relative importance (Means and Standard Deviations) as rated by the group

participants. There were two Finance groups of managers and their results are tabulated in separate tables.

Interviews

After all interviews were conducted and completed, based upon the standardized interview questions, transcripts of the written material were summarized and then analyzed for essential value statements. Thereafter, the main points from each interview per functional group were synthesized into specific statements, and then collated with value statements from other interviews.

RESULTS

The main study findings from all respective functional non-operational groups, based upon the focus groups and interviews are presented in summary tables in Appendix A. These tables are differentiated according to manager or employee role. Specific rankings of perceived importance of each value item, and Means and SDs are presented (note tied rankings).

DISCUSSION

This section deals with the analysis and interpretation of the study findings. The various sources from which the study data were obtained, produced a number of important, yet sometimes disparate findings which had to be reconciled and understood.

FINANCE

Data obtained for this functional group emanated from two managerial focus groups and three employee focus groups, as well as from nine personal interviews. The managerial groups differed from the employee groups in terms of the level of detail and their articulation of specific values. One managerial group tended to view value in terms of the extent to which finance viewed as vital the provision of proactive information and financial analysis for business decision making and strategic positioning. This appears to be a more consulting orientation than that of the second manager group, which viewed value in terms of ensuring company-wide adherence to rules and regulations

and compliance, and subsequently reducing thereby financial risk as well as the economic allocation of resources for increased profitability.

These differences were probably attributable to the respective experiences of some managers working in more control and monitoring functional subdivisions, while others deal with more profitability and information-providing issue functions. All managers concurred, however, on creating value by streamlining internal administrative processes to ensure customer relations and satisfaction.

The employee finance group underlined the informational view of value creation, yet in general, also concurred with both manager groups by ranking as important both the regulatory and administrative functions. A close examination of their preferences reveals a valuable and constructive synthesis of both managerial stances from both interviews and focus group materials.

PLANNING AND ENGINEERING

The P&E managers emphasized the supportive functions, such as customer relations via improving the strategic points of contact at call-centers, by improved processes and technological innovations. They also viewed the process of implementing projects and the resolving of internal process problems as major value-creating functions.

The P&E employees tended to articulate a similar orientation, focusing though on more specific improvements in products and services, via technologies, control mechanisms and responsiveness.

HUMAN RESOURCES

The data obtained from interviews and focus groups with all HR participants reveals a tendency on the part of managers to emphasize the importance of systems and applications, workplace training, and productivity. Overall, their perception of HR value-contributing functions seems to be based upon a more systemic perspective for providing HR services to the organization. In contrast, the HR employee perspective views value in terms of the more traditional functional areas of HR, such as training, compensation, selection, motivation and people management, career promotion, and safety. The employees, however, tend to underemphasize issues of information for decision making, control mechanisms for performance and overall worker development. Most interestingly though, the employee group were able to generate a number of relevant HR measures – a feat with which their managers experienced much difficulty.

INFORMATION TECHNOLOGY

Data obtained from interviews and focus groups show a fairly close overlap and level of consensus between both manager and employee groups. Both groups emphasize the vital contribution in providing systems for the purpose of generating better information for purposes of control and decision making. In addition, they both demonstrate a strong customer awareness and orientation, striving to reinforce relations and customize products for mutual gains. However, employees stressed the more technical aspects of the systems, with innovativeness representing a significant yardstick of value contributed. Managers, by contrast, viewed these technical capabilities as a means for achieving a competitive business advantage.

The Data Collection Process

It is worth noting that the data collection phase proved highly challenging in terms of obtaining relevant value statements from the participants in the interviews and focus groups. These people were asked to focus not on their individual functions within a group, but rather on the overall value and contribution provided to the organization. In fact, at the outset of the focus groups, an attempt to pinpoint the relevant BMs was perceived as incoherent to the participants and perceived as ultimately futile. It was thus evident that a significant cognitive effort to generate substantial input was required on their part – both in terms of the ability to reflect upon their work as well as thinking abstractly about their work value and contributions. As a consequence, time had to be allocated to clarifying the nature of data required and the subsequent demand to generate value statements in a communicable, yet operationally definitive form.

This effort was inevitably at the expense of generating tangible BMs within the course of each data collection session. As a consequence, the data presented above reflect perceived value contributions of the participants, in terms of their ranked importance. This is, however, one step removed from the ultimate stage of recommending specific measures. An explanation of this step is provided below.

A Conceptual Model for Business Measures

It is important to clarify the overall conceptual model underlying the conducting of this study and more specifically, the analysis and interpretation of the results. This model was based upon an underlying action theory of the

link between value and evaluative measures, and the subsequent operationally defined mapping of the obtained value statements. In terms of this organizing model, the following stages were enacted.

1. Initially, it was necessary to start out by *collecting relevant operationally defined data* on the issue at hand, within each of the four functional groups.
2. The next stage of data analysis required ranking the findings in terms of perceived importance and the synthesis of multiple-source data.
3. The following stage constituted essentially a content analysis of the dominant factors, based upon a four-factor model taxonomy.
4. The four-factor taxonomy model proposed consisted of
 - (i) *Level of service offered* (e.g., quality of information, volume, frequency, breadth, etc);
 - (ii) *Outcomes and products* (e.g., training, support, systems, applications, etc);
 - (iii) *Cost and cost-effectiveness* (e.g., R&D, support, planning versus realization, etc);
 - (iv) *Contribution to future goals and needs* – i.e. a prospective orientation.

Criteria for Selecting Business Measures

The four-factor model constitutes a “categorizing template” for generating specific BMs. To illustrate the model, examples are offered for each functional group. It should be noted that these examples are based upon a number of *criteria* for selection and inclusion of specific measures, discussed during the course of the study. The driving criteria were:

-
- | | |
|------------------------------------|---|
| 1. Communicable and clear | 5. Reliable |
| 2. Relevant and valid to functions | 6. Comprehensive and inclusive |
| 3. Accessible and available | 7. Quantifiable and precise |
| 4. Impacting on the business | 8. Appropriate and ethically acceptable |
-

While this list of criteria is not exhaustive, it serves to illustrate a valid method for producing relevant and useful measures, based upon the study findings. In addition, attention should be drawn to the types of proposed measures, with a specific delineation being made between *Process* and *Outcome Measures*.

Owing to the nature of the non-operational groups, it is indeed essential to pinpoint measures which evaluate the level and quality of the specific value-creating process being addressed. This is inevitably unlike the purely outcome-based measures which are more easily applicable to operational group functioning with definitive objective measures. The proposed conceptual model and dimensions representing each respective workgroup, are presented in summary form in Appendix B.

Translating Measures to the Individual Functional Level

The model presented above, with the accompanying tabulated measures for the four functional groups, represents a group-level measure. This level represents those measures which best reflect both functional performance and contribution of value to the company, based upon the empirical study.

These measures thus constitute a specific profile for assessing performance at all managerial levels. A vital component of implementing the BMs, however, is the translating of this model to the individual employee level within any given functional group. Such specific measures require an additional refinement that needs to be included.

The study recommends that the corresponding individual-level measures be consistent with and derive from the functional group measures to reflect specific, operational levels of individual task function, responsibility and accountability. This, in essence, is the purpose of introducing the BMs framework within the PA management system.

THE TRANSLATION PROCESS

In order to facilitate the implementation of the change and also enhance support for the successful implementation of the system and identification with the overall process, managers (director and senior management levels) were entrusted with the task of transforming and adapting the derived measures to all their line-level employees. It should be noted, however, that while many measures have been definitively measurable, others have proved more elusive to translation. Therefore, some measures have been purposefully left in solely descriptive terms as part of the evaluation process.

The following process and procedure was enacted to ensure an expedient transforming of the measures to the individual employee level.

- (1) The tabulated measures were presented to the respective functional group managers for their review and comments. Most managers provided comments and refinements to the recommended measures.
- (2) Managers refined or added measures as needed, according to the dimensions identified in the present study and the accompanying conceptual model.
- (3) Managers also provided their definitions of those measures not easily measurable or definable (usually in descriptive terms).
- (4) Each manager subsequently convened at least a single-session meeting with his subordinate managers to refine the specific measures to be used for evaluating individual all line-level employees.

CONCLUSIONS

Measuring organizational performance is a highly challenging issue, which requires designing methods and criteria to evaluate individual and company-level performance. The challenge is critical as it determines how a company adds and generates value, with important implications for its operating bottom line, as well as perceptions and attributed reputation, both internally and by stakeholders. Many companies encounter difficulties with quantifying measures, especially in those gray areas usually attributed to staff-based operations. The focal task is to facilitate transfer of derived measures into meaningful and measurable achievements. It is vital that performance measurement and process improvement go hand in hand in order to enhance a real competitive advantage.

This study described an action-based approach to develop and implement a method and process for deriving key performance-related measures for non-operational functional groups within a major MNC in the service industry. Essentially, the study aimed at constructing operationally defined, valid BMs, which both accurately represent as well as impact upon company performance. The method adopted focused on those value-adding functional processes and key outcomes.

A conceptual model was proposed for integrating the findings and providing a coherent method for generating additional measures as needed or refining the newly defined measures. It is proposed that the four-factor model may serve as a heuristic platform for developing future business-related performance measures in other organizations.

The main products of the process were the new BMs generated by this methodological approach, which incorporated the participation of numerous manager and employee groups from all the respective functions.

A most welcome outcome of the process was the high level of manager and employee participation which has served to facilitate the acceptability and perceived fairness of the overall PA system and enhance its subsequent deployment. This finding has in fact been borne out and validated by two recent internal organizational surveys attesting to a significant ‘buy-in’ to the new PA system on the part of many constituent groups of employees especially at front-line levels and in many countries throughout the company’s operating region.

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APPENDIX A

Table 1A. Finance Workgroup – Employee Ratings.

Value Issue	Mean	SD	Rank
Provide info to management to develop strategic business plan per request	8.75	0.50	1
Financial analysis & evaluation for decision makers on business opportunity	8.50	1.00	2
Timely and accurate reports for management decision-making – includes trends, forecasts, variance	8.00	1.83	3
Control and Policy compliance	7.75	2.06	4
Ensure adherence to all tax regulations & financial reporting – including consulting for good planning	7.75	1.50	4
Fair allocation of expenses as info for managers	7.50	1.00	5
Improve cash flow – juggling receivables; balancing act	7.25	0.96	6
Managing ROI & shareholder value (gatekeeper and advisory role)	7.25	1.71	6
Financial statements reducing credit risk: ageing & bad debt	7.00	0.82	7
Provide “guesstimation” to managers of both revenue and local expense using yield, volume, etc. to manage financial performance	6.75	1.71	8
Satisfy internal and external customers – timely and accurate info on billing, invoicing	6.75	1.50	8
Streamline work process for increased productivity and reduced transaction costs	6.50	1.00	9
TOTAL (<i>N</i> = 23)			

Table 1B. Finance Workgroup – Manager Ratings (1).

Value Issue	Mean	SD	Rank
Meet tax compliance	10.00	0.00	1
Legal compliance – provide all billing documentation in accordance with legal requirements	9.50	1.00	2
Profitability (short & long term) – ROI/MPV/Margin Sales; evaluate likelihood of financial returns (profit/loss) of products, new markets, projects etc.	9.50	1.00	2
Ensure policy and legal compliance	9.50	0.57	2
Decide on allocation resources in an efficient and systematic manner (e.g., business planning)	9.25	1.50	3
Diagnose/advise process efficiency improvement of financial process	9.00	1.00	4
Increase return to shareholders	9.00	1.73	4
Provide accurate and timely financial statements for management decision making	9.00	1.41	4
Monitor & estimate in/out cash-flow ensuring smooth operations	8.75	1.26	5
Provide financial analysis info to guide business development	8.40	1.67	6
Ensure ROI/profits by providing financial analysis for a wide range of products and services	8.40	0.55	6
Provide measurement to track performance with business metrics	8.25	1.26	7
Provide tax planning strategies at corporate level	8.20	0.84	8
Reduce likelihood of tax audit	7.50	1.73	9
Customer satisfaction – planning; analyzing projects and monitoring components of projects; budgeting	7.25	2.22	10
Provide timely disbursement to internal & external customers	7.25	1.50	10
Set direction and goals by long-term planning – provide recommendations, analysis, forecasts, insights for long-term business planning	7.20	1.79	11

Table 1B. (Continued)

Value Issue	Mean	SD	Rank
Cost savings – projects resulting in cost savings (e.g., FTE, automation)	7.00	3.67	12
Increase tax savings planning & leveraging on tax savings opportunities	7.00	1.41	12
Help groups manage budgets	5.75	2.99	13
TOTAL (N = 9)			

Table 1C. Finance Workgroup – Manager Ratings (2).

Value Issue	Mean	SD	Rank
Manage all revenue-generating processes and resolve disputes to satisfaction of customers & reinforce customer-company relationships	9.60	0.89	1
Provide financial data, information and recommendations in a timely and accurate manner	9.20	0.84	2
Ensure that timely, effective and functional information is made available to organization for informed strategic & operational business decisions	8.80	1.79	3
Ensure timely and accurate payment to all vendors and company employees	8.60	1.34	4
Ensure internal compliance for safeguarding company assets	7.60	1.67	5
Ensure maintaining of policies and processes, informing & communicating updates & changes in policies	7.20	1.92	6
Inform company on potential financial risk with specific customers	7.20	1.30	6
Provide control policies & implementation procedures; ensure company adherence and reduced risk	6.40	1.14	7
Provide information and develop ways/methods for enhanced financial processes to secure a competitive advantage	5.80	1.79	8
TOTAL (N = 17)			

Table 2A. Planning and Engineering Workgroup – Employee Ratings.

Value Issue	Mean	SD	Rank
ROI on projects – pre-project analysis (business case) & ROI outcome evaluation (of P&E-related areas)	9.00	0.82	1
Timeliness of projects – maintain, control & determine optimal timelines for internal projects & external vendors	9.00	0.58	2
Speedy response to crisis and adequate contingency plans by designing at regional level and developing plan	8.71	1.38	3
Volume of shipment – accurate planning capacity for service/manpower; optimization based on expected demand/strategy for output volume	8.57	1.62	4
Acceptance of new technology – user needs and info on potential products	8.57	1.62	5
Improve front-line productivity by introducing new technology, facilitating automation	8.00	1.41	6
Using money wisely on projects – budgeting and cost control of projects	8.00	1.73	7
Reduce claims – diagnosing reasons for service failure, analyze and recommend improvement	7.86	1.95	8
Provide safe environment by designing safe work environment/facility (structural and process)	7.43	1.90	9
Service ratio process: pre-empting problems via simplifying SOPs & comprehensive understanding of process	7.29	1.25	10
ISO compliance – design, support, maintain & monitor ISO compliance	7.29	1.98	10
Customer satisfaction via timely and accurate information to operations for customers	7.14	1.46	11
Timely updates of job aids – optimal training of job aid updates by country	7.14	1.95	11
Trace performance – consolidate user requirements for service process trace (e.g., X system)	6.86	1.77	12
Call/Trace monitoring – ensure uniform and consistent use of call and trace to maintain service quality	6.86	1.68	12
Service level measure – effective allocation of products to parties	6.43	1.72	13

Table 2A. (Continued)

Value Issue	Mean	SD	Rank
Bigger product variety – providing appropriate data and advisory input for marketing/business decisions on productivity and service variety	6.29	2.75	14
TOTAL (N = 17)			

Table 2B. Planning and Engineering Workgroup – Manager Ratings.

Value Issue	Mean	SD	Rank
Service enhancements at call centers – analyze data & process by service metrics	9.33	1.15	1
Successful project implementation (field expected benefits; efficiency, productivity, cost saved, revenue increase, int & ext CS service level improvement, automation regulatory compliance; resources for operations; market leadership)	9.00	1.00	2
Optimization of resources for customer point of contact & internal processing & resources	8.67	2.31	3
Keeping up and scouting for technology (for call centers) and identify customer expectations/needs & behaviors	8.67	1.15	3
Analysis & reporting timely/relevant yields; management root causes; recommend action plan	8.33	2.08	4
Monitor and analyze standard service performance	8.00	2.00	5
Improve problem resolutions for customers by diagnosing and analyzing problems	8.00	0.00	5
Training & support to call center management – provide guidance, training, support communications to call center management	7.33	2.31	6
TOTAL (N = 21)			

Table 3A. Human Resources Workgroup – Employee Ratings.

Value Issue	Mean	SD	Rank
Training and development	9.00	0.82	1
Recruitment	8.86	1.21	2
Compensation & benefits	8.71	1.11	3
Safety	8.57	1.39	4
Motivation	8.57	0.98	4
People management	8.43	0.98	5
Career development	8.14	1.21	6
Equal opportunity compliance (EOC)	8.14	2.34	6
Communication of organizational policies	8.00	1.91	7
Consulting	7.57	1.51	8
TOTAL (N = 20)			

Table 3B. Human Resources Workgroup – Manager Ratings.

Value Issue	Mean	SD	Rank
Provide users (managers/employees) with systems applications with critical HR-related information for enhanced control by managers	9.00	1.00	1
Initiate, study, test and propose solutions to automate HR processes (lower costs; provide improved service)	8.33	1.53	2
Consult to improve work processes/skill deficiencies	7.67	1.53	3
Provide support to HR department’s users	7.00	2.65	4
Creating a workforce that is knowledgeable and skilled according to people-priority philosophy	7.00	2.65	4
Ensure HR Administration maintains business and workplace productivity & performance	7.00	2.00	4
Enable managers to receive accurate and accessible information to help manage Human Capital	6.67	2.89	5
Provide skill-based/knowledge-based support to managers to enhance safety company-wide	6.50	4.36	6
Facilitate implementation of division-wide projects	5.33	3.79	7

Table 3B. (Continued)

Value Issue	Mean	SD	Rank
Consult and provide updated HR policy adherence	5.33	4.51	7
Provide progressive solutions and practice continual renewal for business success	5.33	4.51	7
Facilitates and supports implementation of projects (to provide business edge on projects)	5.00	4.00	8
Enhancing company-wide compliance awareness via safety & timely info (inspection, audits communiqués)	4.33	3.06	9
TOTAL (N = 19)			

Table 4A. Information Technology Workgroup – Employee Ratings.

Value Issue	Mean	SD	Rank
Help company achieve competitive advantage by building superior and innovative info	9.75	0.50	1
Consult and recommend to business managers to achieve business goals via technological solutions	9.75	0.50	1
Providing new ways to provide business and products via IT advances & solutions	9.25	0.96	2
Contributing to support of new ways of providing company business services	8.75	1.50	3
Help to automate customers' process by designing automated software & systems meeting customer's needs (to "lock-in customers")	8.50	1.91	4
Provide methods & technology to support other functional groups' needs	7.50	2.52	5
Improve process by linking all related services and by linking all related service change via technological structure solutions for business strategy	7.25	4.27	6
Providing customized service & updates, thus reinforcing mutually beneficial customer relations	6.75	2.99	7
Provide timely & valuable info to customer during entire service process	6.75	1.71	7
Provide methods & tools for internal analysis of marketing trends, thereby enhancing business DM	5.75	2.63	8
TOTAL (N = 39)			

Table 4B. Information Technology Workgroup – Manager Ratings.

Value Issue	Mean	SD	Rank
Design, develop applications to help/support company reduce cost, generate revenue, ensure legal compliance & improve operational efficiency (e.g. quality implementation; customer feedback, project management costs)	9.67	0.58	1
Provide project management for improved on-time and on-budget delivery of project & meeting of user expectations	9.33	1.15	2
Enable front-line personnel to better support customers via data-base consultation on IT issues	8.00	1.00	3
Provide post-implementation support & monitoring process (up & running/up-time/user perceptions & satisfaction)	7.67	1.15	4
Division wide coordination for project-wide implementation	7.67	0.58	4
Deliver system or projects to meet customer requirements & needs to enhance and reinforce service experience (experience = feedback/customer use)	7.67	2.08	4
Promote and maintain technology for business	7.33	0.58	5
Provide field-level end-to-end support of existing and new business opportunities	5.33	3.79	6
Personnel involved in CT solutions are aligned/well-informed and provide customer-based help	4.33	3.06	7
TOTAL (N = 26)			

APPENDIX B

Table 5. Proposed Business Measures – The Finance Functional Group.

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<p><i>Provide financial data info & business recommendations</i></p> <ul style="list-style-type: none"> • Planning for business operations • Quality of information • Accessibility of information • Proactive communication of info to managers 	<ul style="list-style-type: none"> • Timely, accurate & reliable info to managers • Effective, functional information available • Improved operational & administrative control • Enhanced financial analysis • Evaluability of issues • Superior managerial decision-making capability • Managerial confidence & satisfaction 	<ul style="list-style-type: none"> • Improved administrative efficiency • Improved business planning efficiency • Improved profitability (short & long term; ROI/MPV/ Margin Sales) • Valid evaluations & estimations of financial returns and profit/loss • Feasibility analyses of products, new markets, projects, etc. 	<ul style="list-style-type: none"> • Informed strategic & operational business decisions • Info for developing & evaluating future strategic business plans & operations • Achieve competitive advantage (via superior information capabilities)
<p><i>Providing financial analyses for business planning</i></p> <ul style="list-style-type: none"> • Advice on tax planning strategies at corporate level • Provide financial planning by advising functional groups & individual employees 	<ul style="list-style-type: none"> • Improved project & service delivery planning • Timely & reliable information re financial implications • Optimized financial planning for functional groups 	<ul style="list-style-type: none"> • Planned tax savings • Competitive advantage • Savings in service delivery processes 	<ul style="list-style-type: none"> • Planning for business development & opportunities • Guides business development via financial analysis & info

Manage all revenue-generating processes & in/out cash flow

- Monitoring & analysis of cash flow
- Juggling & balancing of receivables

- Resolve disputes to the satisfaction of customers & managers
- Reinforcing of customer–company relationships
- Smooth administrative revenue processes
- Superior financial monitoring & control of cash flow
- Set business metrics & standards for measuring business performance

- Improved cash flow & revenue generation
- Increase return to shareholders
- Increased savings (due to superior cash flow control)

- Financial forecasting for new business services/opportunities

Disbursement to all vendors & payment to employees

- Timely & accurate payments to all vendors & employees

- Smooth administrative processes
- Resolves disputes to the satisfaction of customers & managers
- Reinforcing of customer & supplier–company relationships
- High customer satisfaction
- Perceptions of fairness & higher worker commitment

- Reduced delay penalties & fines
- Improved image of corp. reliability & EOC
- Higher equity & financial-soundness rating

- Innovativeness enabling new business services/opportunities
- Achieve competitive advantage via superior pay procedures

Ensuring internal compliance with laws & regulations

- Billing documentation according to legal requirements
- Administrative processes conducted according to laws
- Ensuring all functional groups adhere to laws & regulations

- Safeguarding company assets
- Company-wide legal & tax compliance
- Policy & legal compliance
- Reduced risk of no-collection of revenues
- Reduced likelihood of tax audit

- Reduced financial risks
- Reduced payment defaults (write-offs) from customers
- Zero penalties for process errors
- Reinforced company ethical image & stance

- Strategic business planning

Table 5. (Continued)

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<p><i>Risk-management information</i></p> <ul style="list-style-type: none"> • Provide vital information on potential financially risky customers • Advise managers proactively of potential risks & problems 	<ul style="list-style-type: none"> • Improved protection against financial risk • Uniform compliance with laws & SOPs of functional groups • Timely info for decision-making on delivery of client services • Improved financial profiling of customers (current & new) 	<ul style="list-style-type: none"> • Reduced payment defaults (write-offs) from customers • Reduced company financial risks 	<ul style="list-style-type: none"> • Support for new business opportunities
<p><i>Uphold company financial policies & processes</i></p> <ul style="list-style-type: none"> • Inform & communicate on policy updates or changes • Advise company managers on required processes 	<ul style="list-style-type: none"> • Informed financial decision-making by managers • Uniformity & clarity of company administrative/ financial processes 	<ul style="list-style-type: none"> • Reduced financial risks • Reduced payment defaults (write-offs) from customers • Zero penalties for process errors • Reinforces company ethical image 	
<p><i>Improving the financial process</i></p> <ul style="list-style-type: none"> • ID & diagnose process problems • Method improvement recommendations for superior financial processes • Advise on allocation of resources & projects 	<ul style="list-style-type: none"> • Superior decision making on resource allocation • Improved budget management by functional groups • Financial analyses of projects • Better monitoring of projects & component stages 	<ul style="list-style-type: none"> • Efficient business planning • Savings in service delivery processes • Improved resource allocation efficiency • Efficiencies in project budgeting & cost savings (e.g., FTE, automation) 	<ul style="list-style-type: none"> • Provide financial analysis & info to guide business development

Table 6. Proposed Business Measures – The Planning & Engineering Functional Group.

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<p><i>Provide service enhancements at call centers</i></p> <ul style="list-style-type: none"> • Apply service metrics to analyze data & processes • Plan for optimizing service delivery processes • Gather info on potential products • Conduct potential product testing 	<ul style="list-style-type: none"> • Effective, functional info on call-center performance • Improved service operations • Improved operational & administrative control • Enhanced call-center service delivery • Recommendations for potential products & innovations • Enhanced management ability to provide superior customer service 	<ul style="list-style-type: none"> • Improved administrative efficiency • Improved business planning efficiency • Improved profitability of call-centers (ROI/MPV/Margin Sales, etc.) • High level of automation • Regulatory compliance • ISO compliance 	<ul style="list-style-type: none"> • Enhanced strategic capabilities to innovate, design & provide new services • Informs the developing of future strategic business plans & operations • Competitive advantage via superior enhancements & new capabilities
<p><i>Ensure successful project implementation</i></p> <ul style="list-style-type: none"> • Design of project phases • Coordination of planning & implementation with all parties • Monitoring of all component phases 	<ul style="list-style-type: none"> • Better design & implementation of projects • Superior monitoring & control of project implementation process • Timely & smooth implementation of projects & stages (internal projects and external vendors) • Improved coordination among all functional departments & groups 	<ul style="list-style-type: none"> • Project efficiency • Productivity increase • Cost savings • Revenue increase • Improvement in Int & Ext C.S service levels • ROI on projects analyses • ROI on project outcome • Resource utilization efficiencies • Resource allocation savings (within budget) 	<ul style="list-style-type: none"> • Enhanced ability to adapt to new business services & changed customer needs
<p><i>Maintaining technology for call centers</i></p> <ul style="list-style-type: none"> • ID of customer needs & expectations • Up-to-date & abreast of technological developments 	<ul style="list-style-type: none"> • Introduction of supporting technologies & methods • Rate of technological enhancements 	<ul style="list-style-type: none"> • High level of automation • Process efficiency savings • Cost savings • Revenue increase 	<ul style="list-style-type: none"> • Information for introducing new services & innovations

Table 6. (Continued)

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<ul style="list-style-type: none"> Scout & locate new technologies for continuous improvement Optimize resources for customer point of contact 	<ul style="list-style-type: none"> Higher customer satisfaction Enhanced customer point-of-contact relations Better meeting customer expectations of service 	<ul style="list-style-type: none"> Improvement in Int & Ext C.S service levels Market leadership in service level 	
<p><i>Monitoring & analyzing standard service performance</i></p> <ul style="list-style-type: none"> ID, diagnose & resolve problems for customer benefit Analyze & report on call-center service processes Resolve root problems 	<ul style="list-style-type: none"> Improved operational & administrative control On-line monitoring of service performance & problems Recommended corrective actions & amendments Accurate planning capacity for shipments & manpower Optimize call volume (based on demand analysis) Customer satisfaction (info operations to customers) 	<ul style="list-style-type: none"> Level of automation Process efficiency savings Cost savings Revenue increase Improvement in internal service levels Reduces claims/MBG Reduction in number of service failures 	<ul style="list-style-type: none"> Information for decision-making on new service options & innovations
<p><i>Supporting call center management</i></p> <ul style="list-style-type: none"> Provide guidance, training & communications for involved personnel Enhance a safe work environment (both work-design & process) 	<ul style="list-style-type: none"> Enhanced knowledge, skill & ability of call-center personnel Available data for management on performance issues Timely, accurate & reliable info communicated to management Training sessions provided 	<ul style="list-style-type: none"> High level of automation Savings due to enhanced process efficiency Cost savings Revenue increase Improvement in service levels Learned & applied skills Number of safety breaches Number of service failures 	

Table 7. Proposed Business Measures – The Human Resources Functional Group.

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<p><i>Introduction of systems & applications</i></p> <ul style="list-style-type: none"> • System quality • Hours up/down-time • User-friendliness & utility • Efficiency of internal processes • Innovative features 	<ul style="list-style-type: none"> • Enhanced managerial control (via systems) • Enhanced info for decisions • Availability of HR info (for managing workforce) 		
<p><i>Automated HR solutions</i></p> <ul style="list-style-type: none"> • Compares favorably with competitor systems • Responds to & meets current & arising needs 	<ul style="list-style-type: none"> • Quality solutions for HR related processes • Lowered costs • Improved service • Availability of HR info (for managing workforce) 	<ul style="list-style-type: none"> • Reduced costs & savings • Improved service yields 	<ul style="list-style-type: none"> • Planning human capital for new business opportunities
<p><i>Training & Development</i></p> <ul style="list-style-type: none"> • Educates workforce via enhancing knowledge & skills • Key populations identified & served • Evaluates training outcomes 	<ul style="list-style-type: none"> • Training courses implemented • Course grades and course achievements • Knowledge gained & skills obtained • Training satisfaction • Applied work skills • Improvements in work processes 	<ul style="list-style-type: none"> • Volume & breadth of training • Generalization of learning & training • Incurred training costs • Efficiency of training methods & procedures 	<ul style="list-style-type: none"> • Planning for jobs, roles & careers • I/D & priming of potential candidates for jobs & management roles
<p><i>Support for work-place productivity & performance</i></p> <ul style="list-style-type: none"> • Introduce quality systems & initiatives • Provide consulting & diagnostic services (surveys, studies, evaluations, etc) 	<ul style="list-style-type: none"> • Support & control systems • Management performance initiatives • Support initiatives & change processes 	<ul style="list-style-type: none"> • Enhanced management control of performance • Increased productivity 	<ul style="list-style-type: none"> • Suggests new methods for superior operational processes
<p><i>Compensation & Benefits (C&B)</i></p> <ul style="list-style-type: none"> • Fair & equitable benefits & compensation disbursement 	<ul style="list-style-type: none"> • Pay linked to performance • Perception of Pay for P link • Employee Pay satisfaction 	<ul style="list-style-type: none"> • Productivity yields demonstrable • C&B costs offset by productivity yields 	<ul style="list-style-type: none"> • Linked to business strategy • Reinforces business strategy

Table 7. (Continued)

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<ul style="list-style-type: none"> • Competes favorably with (C&Bs) of other companies 	<ul style="list-style-type: none"> • Motivation level 	<ul style="list-style-type: none"> • EOC and employee commitment • Reduced turnover 	
<p><i>Info for people management</i></p> <ul style="list-style-type: none"> • Quality of info • Timeliness of info • Accuracy of info • Accessibility of info 	<ul style="list-style-type: none"> • Enhanced management monitoring & control • Management awareness of HR issues • Data-driven management of people • Transparency of HR issues • Alignment with PSP • Proactive management interventions 	<ul style="list-style-type: none"> • Reduced employee grievance processes • Reduced consulting vendor costs 	<ul style="list-style-type: none"> • Linked to future business human capital demands & needs
<p><i>Enhancing region-wide safety</i></p> <ul style="list-style-type: none"> • Awareness of safety policies • Knowledge of safety compliance demands 	<ul style="list-style-type: none"> • Timely safety inspections • Safety-practice audits • Info & communiqués dissemination • Safety-promoting company stance (internal perception) • Employee perceptions of “caring company” • Safety-promoting industry-wide image 	<ul style="list-style-type: none"> • Safer work procedures & processes • Reduction in work-related accidents • Insurance premium reductions • Reduced litigation costs • Reduced disablement benefits costs 	<ul style="list-style-type: none"> • Linked to business strategy • Linked to business/industry image
<p><i>Recruitment & placement processes</i></p> <ul style="list-style-type: none"> • ID of company job requirements • ID of suitable job candidates • Quality selection processes 	<ul style="list-style-type: none"> • Retention rates • Time to fill positions • Number of positions filled • Number of qualified candidates inducted 	<ul style="list-style-type: none"> • Reduction in overall & specific induction costs • Reduced turnover • Vacant/filled favorable ratio • ROI – induction process 	<ul style="list-style-type: none"> • Linked to future business’ human capital demands

Table 8. Proposed Business Measures – The IT Functional Group.

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<p><i>Design & introduction of applications</i></p> <ul style="list-style-type: none"> • Quality of systems • Hours up/down-time • User-friendliness • Efficient internal processes • Innovative system features • Install customer feedback loop & mechanism 	<ul style="list-style-type: none"> • Achieving of business goals by business managers (via tech-based solutions) • Improved operational efficiency • Reinforced customer relations & meeting of needs • Technological structured solutions support business • High customer satisfaction • Optimal legal compliance 	<ul style="list-style-type: none"> • Reduced project management costs • Reduced management costs • Improved revenue generation • Smooth implementation of applications & solutions 	<ul style="list-style-type: none"> • Innovativeness enables & reinforces new business services & opportunities • Maintain competitive advantage (via superior information capabilities)
<p><i>Project management</i></p> <ul style="list-style-type: none"> • Quality of applications/systems • Planning within budget & resources • Quality solutions – customers • Quality solutions for operational processes 	<ul style="list-style-type: none"> • Retention rate of customers • Improved operational process • Innovative processes • On-time delivery of projects • On-budget delivery of projects • Meets customer expectations & needs 	<ul style="list-style-type: none"> • Reduced project design costs • Efficiencies in resource allocation • Reduced implementation costs • Improved service yields 	<ul style="list-style-type: none"> • Enables & supports new business opportunities
<p><i>Database consultation to customers & other functional groups' needs</i></p> <ul style="list-style-type: none"> • Improved service supports front-liners • Links all related services (via tech structure & solutions) • Automates customer service process and service needs 	<ul style="list-style-type: none"> • Customized service solutions • Improved info on customer needs • Positive customer feedback re experiences with company • Well-informed & committed 	<ul style="list-style-type: none"> • Retention of existing customers • Increased volume/business with existing customers • Expansion of new customer base • Increased marketing 	<ul style="list-style-type: none"> • Facilitates design of new methods for providing best services • Promote new business technologies

Table 8. (Continued)

Level of Service	Outcomes	Costs & Effectiveness	Contribution to Future Goals & Needs
<ul style="list-style-type: none"> • Provides consultation to internal & external customers on IT 	<p>personnel in CT solutions</p> <ul style="list-style-type: none"> • Improved service processes 	<p>capabilities of services:current & new customers</p> <ul style="list-style-type: none"> • Improved service yields 	<ul style="list-style-type: none"> • Supports & enhances strategic business decision making • Reinforces competitive advantage via superior service capabilities
<p><i>Provide post-implementation support & monitoring process</i></p> <ul style="list-style-type: none"> • Projects up-&-running • Up-time improvement • Consulting to & customizing for customer needs • Provide customer-based help & solutions • Generate feedback on problems & service improvements 	<ul style="list-style-type: none"> • Optimized management control • Optimized services monitoring • Optimized coordination among divisions • Solves problems & improves level of services • Reinforced mutual customer-company relations • Timely & valuable info to customers (service process) • Favorable customer-user perceptions & satisfaction • Improvements in operations work processes • Methods & tools for internal analysis of marketing trends 	<ul style="list-style-type: none"> • Customer retention • Customer base growth • Cost savings via automated operational processes • Savings on operational work processes 	<ul style="list-style-type: none"> • Supports & enhances strategic business decision making • Reinforces competitive advantage via superior service capabilities

STRATEGY AND INTEGRATED FINANCIAL RATIO PERFORMANCE MEASURES: FURTHER EVIDENCE OF THE FINANCIAL PERFORMANCE SCORECARD AND HIGH-PERFORMANCE COMPANIES

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ABSTRACT

This study continues our exploration of the links between strategy, execution, and financial performance. Most recently, we investigated empirically U.S. companies in the S&P 500 and companies that have displayed specific characteristics of high-performance companies (HPCs): sustained and superior cash flow returns, asset growth, and total shareholder returns.

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In this new study, we empirically investigate HPC and integrated financial ratio analysis based on the following components: (1) replication of previous study with certain modifications, (2) sustainability of performance in HPCs, (3) operating asset management characteristics, especially as they relate to the cash cycle, and (4) anomalies identified in the measures of cash flow yield.

INTRODUCTION

This study continues our exploration of the links between strategy, execution, and financial performance. Our prior research (Frigo, Needles, & Powers, 2002; Needles, Frigo, & Powers, 2002, 2004) examined these links by emphasizing the underlying performance drivers that describe how a company executes strategy to create financial value. Most recently, we investigated empirically U.S. companies in the S&P 500 and companies that have displayed specific characteristics of high-performance companies (HPCs): sustained and superior cash flow returns, asset growth, and total shareholder returns. In the prior study, we found support for the hypothesized relationships between integrated financial ratio performance measures as represented by the Financial Performance ScorecardTM (FPS) and also of above-mean performance by HPCs across all performance measures when compared with the companies in the S&P 500 (Needles et al., 2004).

In this new study, we empirically investigate HPCs and integrated financial ratio analysis based on the following components: (1) replication of previous study with certain modifications, (2) sustainability of performance in HPCs, (3) operating asset management characteristics, especially as they relate to the cash cycle, and (4) anomalies identified in the measures of cash flow yield.

PREVIOUS RESEARCH

As noted, the new research extends previous research, which investigated the relationship between strategy and financial ratio analysis (Frigo et al., 2002; Needles et al., 2004). Further, it is related to previous research by, among others, Nissim and Penman (1999, 2001). We also referenced Brief and Lawson (1992), Fairfield and Yohn (1999), Feltham and Olsson

(1995), Fera (1997), Jansen and Yohn (2002), Lev and Thiagarajan (1993), Ohlson (1995), Penman (1991), Piotroski (2000), and Selling and Stickney (1989).

Frigo and Litman (2002) and Frigo (2002) have emphasized a “Return Driven Strategy” under which business activities are ethically aligned with achieving maximum financial performance and shareholder wealth. Financial statements provide important information about a company’s ability to achieve the strategic objective of creating value for its owners. The intelligent user of financial statements will be able to discern how well the company has performed in achieving this objective. Financial analysis provides the techniques to assist the user in this task. In short, the financial statements reflect how well a company’s management has carried out the strategic and operating plans of the business. The marketplace, in turn, evaluates this performance, and a value is placed on the company.

Analysts have traditionally conducted ratio analysis by examining ratios related to various aspects of a business’s operations. Our previous research (Needles et al., 2004) has shown empirically how ratios interact in integrated financial ratio analysis, which we call the FPS, to show whether a company is creating or destroying value. The FPS is a structure or framework for considering the interaction of financial ratios, with particular emphasis on the drivers of performance and their relationship to performance measures. These performance measures are reflected ultimately in a return that is compared with a benchmark cost of capital. If the return exceeds cost of capital, value has been created. If the return is less than cost of capital, value has been destroyed. The “spread” between return on investment and the cost of capital was used as a criterion for selecting the leading companies; however, for purposes of evaluating the FPS in this study, we will assume that the cost of capital is determinable and given (Adman & Haight, 2002; Gebhardt, Lee, & Swaminathan, 2001).

The FPS is based on the premise that management must achieve certain financial objectives in order to create value and that these financial objectives are interrelated. Further, underlying the performance measures that analysts and the financial press commonly use to assess a company’s financial performance are certain financial ratios, called performance drivers, that are critical to achieving the performance measures. We found that while HPCs uniformly excel on the basis of performance measures, they will not display uniform characteristics when it comes to performance drivers, because these measures are more a function of the various strategies that the companies may employ to achieve high performance (Needles et al., 2004).

Profitability and liquidity are traditionally the two most prominent financial objectives. An expanded view of these objectives includes the following (Needles et al., 2004):

Financial Objectives	Links to Financial Performance
Total asset management	Ability to utilize all the assets of a company in a way that maximizes revenue while minimizing investment
Profitability	Ability to earn a satisfactory net income
Financial risk	Ability to use debt effectively without jeopardizing the future of the company
Liquidity	Ability to generate sufficient cash to pay bills when they're due and to meet unexpected needs for cash
Operating asset management	Ability to utilize current assets and liabilities to support growth in revenues with minimum investment

The components of the FPS are summarized as follows (Needles et al., 2004):

Financial Objective	Performance Drivers	Performance Measures
Total asset management	Asset turnover	Growth in revenues
Profitability	Profit margin	Return on assets
Financial risk	Debt to equity	Return on equity
Liquidity	Cash flow yield	Cash flow returns
Operating asset management	Turnover ratios	Free cash flows Cash cycle

The formulas for the ratios appear in Appendix A. Specifically, our previous research investigated (1) evidence with regard to the components of the FPS – in particular, the relationships between the performance drivers and the performance measures and (2) the relationships between the performance of the HPCs and that of their respective industries. Our analysis focused on two groups of companies: companies in the S&P 500 and “high-performance” companies as determined by Frigo in the Return Driven

Strategy Initiative (Frigo, 2003a, 2003b), according to the following three criteria during the period 1990–2000:

- Cash flow return on investment at twice or more the cost of capital (Madden, 1999).
- Growth rates in assets exceeding average gross domestic product growth.
- Relative total shareholder returns above the S&P 500 average.

Also included among the HPC group were 10 additional companies identified by Collins (2001), for a total of 48 companies that demonstrate superior performance in returns and growth over a sustained period. According to Return Driven Strategy (Frigo & Litman, 2002; Frigo, 2003a, 2003b; Litman & Frigo, 2004), the pathway to superior financial value creation is through the customer, by fulfilling unmet needs in increasing market segments.

The empirical results confirmed the basic propositions of the FPS and the criteria for choosing HPCs. These results are summarized as follows:

1. The performance drivers and performance measures are independent of each other, as shown by low correlation among each other or low-rank correlation. This proposition held true for all companies, for selected industries, and for industry leaders, all of which show independence among the ratios, with low correlations among performance drivers (except asset turnover and profit margin) and performance measures.
2. The criteria for choosing HPCs were validated by the performance measures in the FPS model. The HPCs exceed the industry averages across all performance measures and across all industries.
3. The HPCs show mixed results with regard to performance drivers when compared with industry drivers. HPCs excel on profit margin, are lower on cash flow yield, have lower financial risk, and have variable results for asset turnover. We believe these results are due in part to the different strategies that companies may employ.

The prior study had certain limitations that we address in this study. Specifically, we limited our ratio analysis in the prior study to the items from the database without adjustment. For instance, we did not adjust for negatives or outliers. If we were to adjust for these items, we believe we would achieve stronger results. We also need to explore more closely the effects of negatives on the ratios and their relationships, especially in the area of cash flow yield. Further, we did not study one component of the FPS: the operating asset objective, the related operating ratios, and the cash cycle. Finally, we felt the role and importance of the cash flow yield as a measure of financial performance needed further investigation.

EMPIRICAL OBJECTIVES

In this study, we continue our investigation of HPC and integrated financial ratio analysis by replicating our previous study with a modified sample and empirically investigating in HPC the following:

1. Sustainability of performance of HPCs.
2. Operating asset management characteristics, especially as they relate to the cash cycle.
3. Characteristics of cash flow yield.

EMPIRICAL SAMPLE

As it was in our prior study, the source of the data for this study was the CompuStat database. In the benchmark group, we included companies in the S&P 500 index for which data exist consecutively from 1996 to 2001. Based on this condition, data for 349 companies existed and were used in the prior study. For the present study, we made several changes in the benchmark group of S&P 500 companies:

- We excluded several industries whose financial structures typically depart from industrial, retail, and service businesses. These industries are utilities, insurance companies, financial institutions including banks and broker/dealers, hospitals, and educational services. This adjustment improved the comparability of the benchmark group with the HPCs.
- We expanded the number of companies to include those that were in the S&P 500 at any time during the period and for which data existed for the entire period (1997–2003). This adjustment lessened the variability of the benchmark group due to the previously smaller sample size.

After these screens, our sample expanded to 579 S&P companies.

We also made adjustments in the HPC group. In the prior study, as noted, the 48 companies in the group included 10 companies that were identified in the book *Good to Great* (Collins, 2001) but that did not appear in the Frigo screen. In the current study, we eliminated the 10 companies from the Collins study because they did not meet the criteria of the companies in the Frigo study. Thus, we were left with 38 companies identified by Frigo. These companies are listed in Appendix B.

In the analyses, companies were grouped by the first two digits of the standard industrial classification (SIC) code. Forty-eight industries were identified based on this grouping. For many industries, use of the first three

digits of the SIC code did not provide enough companies to derive reliable industry averages.

We provide test data for industries in which we had at least three HPCs, which were as follows (with two-digit SIC indicator):

- 28 Chemicals and allied products
- 35 Miscellaneous industrial, commercial, machinery and equipment (including computers)
- 38 Measuring and control devices
- 73 Business services

TEST PERIODS

Fig. 1 shows the period covered by each study, as well as the 10-year selection period, and the related price performance of the S&P 500. HPCs were selected based on their performance over the 10-year selection period of 1990–1999,

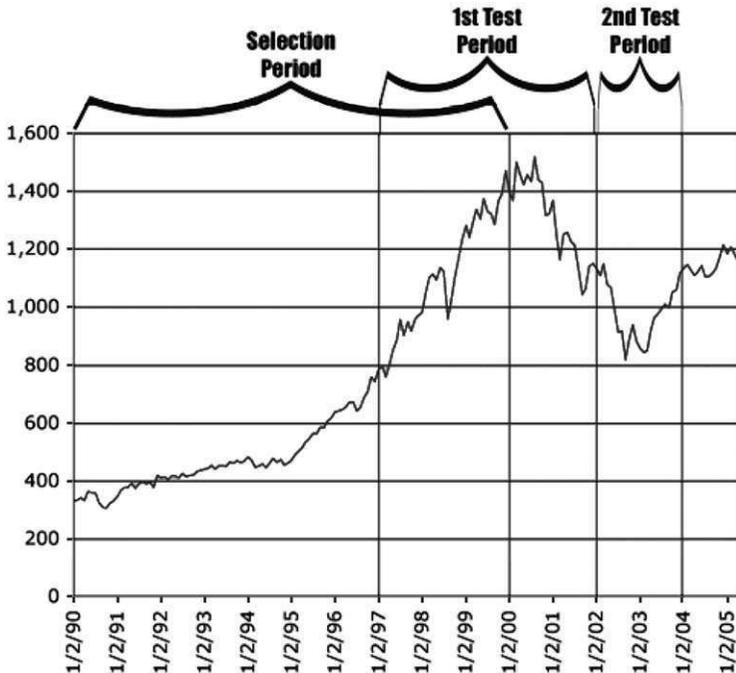


Fig. 1. Selection and Test Period with Market Price of S&P 500: 1990–2004.

according to the criteria listed previously. This period was characterized by generally higher prices and ended with the so-called bubble of the late 1990s. The first test period was the five-year period, 1997–2001. This period included the sharp run-up in the market to the peak of the bubble in 2000 and a steep decline thereafter. The second test period was the two-year period of 2002 and 2003, which was characterized by a volatile market at the bottom of the decline but generally ended where it begun. Thus, the two test periods were quite different from the selection period, and each in its own way provides a test of the durability of the HPCs. The periods are alike in that they both include significant downturns. They are good determinants of whether the HPCs can sustain superior performance in uncertain markets.

REPLICATION OF THE 1997–2001 TESTS – TOTAL ASSET MANAGEMENT, PROFITABILITY, FINANCIAL RISK, AND CASH FLOW EFFICIENCY DRIVERS AND MEASURES

As a first step, we replicated the tests in the prior study with the following differences:

1. We included the companies from the resulting samples described above.
2. We added operating asset performance drivers and measures.

Tables 1a and b compare the HPCs with the S&P companies on performance drivers and performance measures related to the objectives of total asset management, profitability, financial risk, and cash flow efficiency for the period 1997–2001. These tables show the percentage differences and the absolute measures, respectively, of HPCs versus S&P companies. Tables 1c and d show the same measures for HPCs and S&P companies for 2002–2003. The results are summarized as follows:

1. The four selected industry analyses for 1997–2001 (Tables 1a and b) show consistent results across all drivers and measures, with the one exception of growth in revenues for industry 73. HPCs have better utilization of assets (asset turnover), are more profitable (profit margin and return on assets), and have lower financial risk (debt to equity and return on equity), except for industries 35 and 73. Cash flow yield is lower across the four industries, but cash flow returns are consistently higher for the HPCs across the four industries. Using the *t*-test, 33 of the 44 cells are significant at least at the 0.05 level or better, including all cells related to profit margin, return on assets, return on equity, and cash flow return on assets, with two exceptions.

Table 1c. Difference between HPCs and S&P Companies – 2002–2003.

Industry	Performance Drivers				Performance Measures						
	Asset Turnover (%)	Profit Margin (%)	Debt to Equity (%)	Cash Flow Yield (%)	Growth in Revenues (%)	Return on Assets (%)	Return on Equity (%)	Cash Flow Return on Sales (%)	Cash Flow Returns on Total Assets (%)	Cash Flow Returns on Stockholders' Equity (%)	Free Cash Flow (%)
28	-11.80	89.71	-30.65	-63.87	-20.11	61.68	52.74	44.22	30.37	10.68	22.65
<i>t</i> -test	0.082233	0.003682	0.349526	0.116866	0.452722	0.002273	0.144857	0.011705	0.011166	0.393080	0.040535
35	43.16	106.01	-33.23	-201.60	129.76	101.70	63.85	9.79	51.01	7.39	44.87
<i>t</i> -test	0.096303	0.000042	0.283873	0.168484	0.009168	0.001339	0.101387	0.242547	0.026812	0.434478	0.059492
38	13.35	46.91	-42.01	-48.97	60.55	44.62	35.89	21.10	27.27	17.89	21.27
<i>t</i> -test	0.154524	0.049331	0.031923	0.241137	0.000044	0.033875	0.066032	0.077117	0.025491	0.085375	0.088373
73	16.04	82.16	30.94	57.27	114.65	53.94	107.42	16.18	7.47	33.54	-0.72
<i>t</i> -test	0.276234	0.014507	0.257995	0.155843	0.307810	0.084708	0.003579	0.269515	0.356806	0.047642	0.486428
All	14.00	106.32	-269.14	-9.15	146.19	68.87	62.15	34.51	39.74	8.53	30.08
<i>t</i> -test	0.071080	0.000000	0.020083	0.254492	0.002445	0.000000	0.000050	0.000011	0.000000	0.274603	0.000000

Table 1d. HPCs and S&P Companies Compared – 2002–2003.

	Performance Drivers				Performance Measures						
	Asset Turnover	Profit Margin	Debt to Equity	Cash Flow Yield	Growth in Revenues	Return on Assets	Return on Equity	Cash Flow Return on Sales	Cash Flow Returns on Total Assets	Cash Flow Returns on Stockholders' Equity	Free Cash Flow
HPCs	1.13	0.13	1.27	3.06	0.06	0.11	0.23	0.21	0.17	0.35	0.19
S&P	0.97	-0.01	4.69	3.34	-0.03	0.03	0.09	0.14	0.10	0.32	0.14
Difference	0.16	0.14	-3.42	-0.28	0.08	0.08	0.14	0.07	0.07	0.03	0.06
% Difference	14.00	106.32	-269.14	-9.15	146.19	68.87	62.15	34.51	39.74	8.53	30.08
<i>t</i> -test	0.071080	0.000000	0.020083	0.254492	0.002445	0.000000	0.000050	0.000011	0.000000	0.274603	0.000000

2. In the period 1997–2001 (Tables 1a and b), HPCs exceeded S&P 500 companies on an overall basis on the performance drivers of asset turnover (by 18.23%) and profit margin (by 83.71%). These drivers produced growth in revenues for the HPC group that exceeded the S&P average by 44.38% and that exceeded the S&P return on assets by 62.79%. All differences overall were significant at the 0.0001 level or better.
3. As in the previous study, financial risk as measured by debt to equity was much less for HPCs than for S&P companies. This result was expected due to the HPCs' lower need for debt financing. The result of this reduced debt to equity was that return on equity, while still greater for HPCs by 54.32%, differed less than return on assets. The difference in debt to equity was significant at the 0.05 level, and all other differences were significant at the 0.0001 level or better.
4. Cash flow yield was also lower for HPCs than for S&P companies, as in the previous study. This period produced lower relative performance measures for HPCs for cash returns on total assets and cash flow returns on stockholders' equity, but the measures were still significantly above those of the S&P companies. All cash flow returns differences were significant at the 0.0001 level or better.

In summary, HPCs were shown to maintain superior asset management, performance profitability, lower financial risk, and stronger cash flow returns over an economic period that contained a market peak. These findings, based on the refinement of the sample as explained previously, fully confirmed the conclusions of our earlier work.

EXTENSION OF TESTS TO 2002–2003: TOTAL ASSET MANAGEMENT, PROFITABILITY, FINANCIAL RISK, AND CASH FLOW EFFICIENCY DRIVERS AND MEASURES

This study addressed a second issue: whether the HPCs could sustain their superior performance three to four years beyond the selection period. The period 2002–2003 is a good test period for the sustainability of superior performance by HPCs because it represents a contrasting trough in the market cycle from the 1997–2001 cycle. Our expectation was that the HPCs would continue to outperform the S&P companies in this period, which is three to four years after the bull market that characterized the selection period. Tables 1c and d show the measures for 2002–2003 for total asset

management, profitability, financial risk, and cash flow efficiency drivers and measures. The following observations may be made:

1. For this period, the four-industry analysis shows similar results in favor of the HPCs, especially in the profit margin driver and the return on assets measure. Overall, 18 of the 44 cells have differences that are significant at least at the 0.05 level or better. These results would seem to indicate that HPCs in these industries are maintaining their position, although with more variation, relative to their respective industries on the objectives of profitability.
2. HPCs in the four industries continue to have lower debt to equity ratios and thus lower financial risk but continue to have superior return on equity. They also have mixed results with regard to cash flow yield, but do generate superior cash flow returns.
3. When all HPCs are compared with the S&P companies, the HPCs demonstrate strongly superior results, with the exception of cash flow yield (consistent with the 1997–2001 period). All differences are significant at the 0.0001 level or better, with the exception of asset turnover (0.07) and debt to equity (0.02).

These results strongly support the proposition that HPCs maintain superior performance with regard to total asset management, profitability, financial risk, and cash flow efficiency drivers.

EFFECT OF OUTLIERS

As a further test of the model, we examined the effect of outliers on the results by repeating the tests described above but excluding outliers that were more than one standard deviation from the mean. The elimination of outliers did not change the conclusions reached in examining the full set of data. This test established the same patterns in 1997–2001 as shown in [Tables 1a and b](#), except for asset turnover, which showed a non-significant difference of 2.90% in favor of the HPCs. All other differences are significant at the 0.0001 level or better, with the exception of cash flow yield at 0.02. The period 2002–2003 showed the same strong sustainable performance of the HPCs over the S&P companies as presented in [Tables 1c and d](#). As for the 1997–2001 period, the difference in asset turnover, although favoring the HPCs by 14%, is not significant. However, all other differences are significant at the 0.0001 level or better, except for cash flow yield at 0.002.

OPERATING ASSET MANAGEMENT: 1997–2001

As previously explained, our prior study did not address operating asset management. The goal of liquidity is closely related to the goal of operating asset management. Operating asset management is a measure of management control of the cash conversion cycle, which is the time required to make or buy products, finance the products, and sell and collect for them. Operating asset management is the ability to utilize current assets and liabilities in a way that supports growth in revenues with minimum investment. The drivers of operating asset management are the turnover ratios, and the performance measures are the days represented by each turnover measure, as follows:

Performance Driver	Performance Measure
Receivables turnover	Days' sales uncollectible
Inventory turnover	Days' inventory on hand
Payables turnover	Days' payable

Taken together, the performance measures give an indication of the financing period, as shown by the following formula:

$$\text{Financing period} = \text{days' receivable} + \text{days' inventory on hand} \\ - \text{days' payable}$$

The financing period represents the amount of time during which a company must provide financing for its operating activities.

Tables 2a and b compare HPCs with S&P companies for the period 1997–2001. Tables 2c and d provide the same comparisons for the 2002–2003 period. Our expectation was that HPCs would have a shorter financing period than S&P companies because their superior financial performance would be a reflection of their operating efficiency. The results may be summarized as follows:

1. The financing period for HPCs was shorter in three of the four industries for both periods. Industry 28 was the only exception. Table 2b shows that the financing period for the HPC group was shorter by 46.45% for the 1997–2001 period, which equates to almost 28 fewer days that need financing, thus lowering the financing costs for HPCs relative to S&P companies. Table 2d shows HPCs, overall, maintaining this favorable positioning, with a financing period for 2002–2003 that was 67.05%, or 30.0 days, better than that for the S&P companies.

Table 2a. Operating Assets Management – 1997–2001.

Industry	Performance Drivers			Performance Measures			
	Receivables Turnover (%)	Inventory Turnover (%)	Payables Turnover (%)	Days' Sales Uncollected (%)	Days' Inventory on Hand (%)	Days' Payable (%)	Financing Period (%)
28	218.64	-27.67	-97.55	184.29	21.67	49.38	76.55
<i>t</i> -test	0.114721	0.008543	0.000003				
35	24.29	84.64	15.53	-32.09	-550.96	-18.39	-402.70
<i>t</i> -test	0.015240	0.007717	0.128120				
38	14.08	6.24	-4.29	-16.39	-6.65	4.11	-15.02
<i>t</i> -test	0.015517	0.355498	0.300986				
73	-31.63	68.47	-20.44	24.03	-217.16	16.97	-48.65
<i>t</i> -test	0.037704	0.000000	0.312053				
All	2.32	31.61	-6.06	-2.37	-46.21	5.72	-46.45
<i>t</i> -test	0.451464	0.006391	0.258015				

Table 2b. Operating Assets Management – 1997–2001.

	Performance Drivers			Performance Measures			
	Receivables Turnover	Inventory Turnover	Payables Turnover	Days' Sales Uncollected	Days' Inventory on Hand	Days' Payable	Financing Period
HPCs	8.20	6.90	9.64	44.52	52.90	37.85	59.57
S&P	8.01	4.72	10.23	45.57	77.35	35.69	87.24
Difference	0.19	2.18	-0.58	-1.06	-24.45	2.16	-27.67
% Difference	2.32	31.61	-6.06	-2.37	-46.21	5.72	-46.45
<i>t</i> -test	0.451464	0.006391	0.258015				

Table 2c. Operating Assets Management – 2002–2003.

Industry	Performance Drivers			Performance Measures			
	Receivables Turnover (%)	Inventory Turnover (%)	Payables Turnover (%)	Days' Sales Uncollected (%)	Days' Inventory on Hand (%)	Days' Payable (%)	Financing Period (%)
28	-11.55	-55.39	-101.76	10.36	35.65	50.44	10.36
<i>t</i> -test	0.315060	0.005728	0.000016				
35	25.22	81.95	18.77	-33.73	-454.07	-23.10	-590.54
<i>t</i> -test	0.164705	0.086579	0.271519				
38	8.03	12.59	-8.27	-8.73	-14.40	7.63	-20.00
<i>t</i> -test	0.291031	0.317617	0.228576				
73	-33.31	62.92	-10.99	24.99	-169.66	9.90	-43.87
<i>t</i> -test	0.143875	0.019459	0.373657				
All	-14.18	32.15	-25.15	12.42	-47.39	20.10	-67.05
<i>t</i> -test	0.134794	0.040869	0.008278				

Table 2d. Operating Assets Management – 2002–2003.

	Performance Drivers			Performance Measures			
	Receivables Turnover	Inventory Turnover	Payables Turnover	Days' Sales Uncollected	Days' Inventory on Hand	Days' Payable	Financing Period
HPCs	9.66	6.83	7.85	37.78	53.47	46.51	44.73
S&P	11.03	4.63	9.82	33.09	78.81	37.17	74.73
Difference	-1.37	2.19	-1.97	4.69	-25.34	9.35	-30.00
% Difference	-14.18	32.15	-25.15	12.42	-47.39	20.10	-67.05
<i>t</i> -test	0.134794	0.040869	0.008278				

- The operating asset turnover ratios, however, show more variability among industries and between HPCs and S&P companies. We expected HPCs to outperform S&P companies on receivables turnover, and this was the case generally for the 1997–2001 period, as shown in Table 4a, for each of the selected industries except industry 73; however, overall, the HPCs advantage was a nonsignificant 2.32%. This result could be accounted for by the fact that HPCs have less need to sell receivables and take advantage of off-balance-sheet financing than S&P companies. Further, as seen below, HPCs are better able to take advantage of trade creditors.
- The 2002–2003 period shows more variability in the turnover ratios, but overall, the HPCs improved their performance in relation to the S&P companies. The HPCs declined in receivables turnover relative to the S&P companies, but the differences are not significant. Except for industry 28, the inventory turnover ratios for both periods are in line with our expectations that the HPCs would outperform the S&P companies. Inventory turnover for HPCs in the 1997–2001 period exceeded that of S&P companies by 31.61% (significant at the 0.007 level), which represents 24.45 fewer days of financing needed, more than offsetting the shortfall from receivables. These results are in line with our expectations.
- For the 1997–2001 period, HPCs have a payable turnover that is only 6.06% (not a significant difference) lower than that of S&P companies. However, the HPCs were able to increase their performance in the 2002–2003 period to an advantage of 25.25%, or 9.35 days. Strong operating results and low debt loads of HPCs enable these companies to obtain longer terms than average from their trade creditors, which accounts for most of the difference. The HPCs in industry 28 have the strongest payables turnover among the four industries relative to the S&P companies, with a difference that is significant at the 0.0001 level or better. Thus, the

HPCs' deficiencies noted above in receivables and inventory are overcome, so that these companies outperform their industry on the financing period.

In summary, HPCs excel at inventory management, push their creditors to the limit, and are willing to accept a higher level of receivables. Overall, the result of their superior operating asset management is a financing period that is 28–30 days shorter than that of S&P companies.

CASH FLOW YIELD AND FREE CASH FLOWS

We have posited cash flow yield as a driver of cash flow performance measures. We have done this on the basis that cash flow yield expresses the relationship of profitability to liquidity, as shown in the following equations:

Cash flow yield = cash flows from operating activities/net income

Cash flow return on sales = cash flow yield \times profit margin

Cash flow return on assets = cash flow yield \times return on assets

Cash flow return on equity = cash flow yield \times return on equity

In contrast, free cash flows, as measured by cash flows from operating activities less net capital expenditures, is probably the most popular cash flow performance measure used by financial analysts. For these analysts, a positive figure for free cash flows shows that the company is able to maintain its capital base and thus have funds for other purposes. However, in our previous paper (Needles et al., 2004) we identified four deficiencies in the cash flows measure, as follows:

1. No accepted definition exists as to what free cash flows are.
2. Free cash flows are not a ratio; they represent an absolute amount. Thus, interpretation is difficult because relative size is not taken into account.
3. It is not even clear that large free cash flows are good and that small or negative ones are bad. Large free cash flows may mean that the company is not investing sufficiently. Negative free cash flow may mean the company is making large capital expenditures that are expected to produce increased future cash flows. No benchmark exists to compare or judge free cash flows.
4. The only truly “free” cash flows are cash flows from operations, because management is “free” to use them in a variety of ways:
 - a. Invest for future cash flows: net capital expenditures or acquisitions
 - b. Save for future use: investments in securities

- c. Reduce financial risk: paying down short-term or long-term debt
- d. Reduce the size of the business: paying dividends or buying back stock

How management chooses to use the cash flows from operating activities will affect the future cash flows from operating activities and hence the value of the company. Free cash flows in the traditional sense do not give information about the value of the company. It is cash flows from operating activities that represent the cash flow stream that should be discounted. Since cash flows from operating activities stem from profitable operations, the cash flow yield is the fulcrum or leverage that a company uses to create value.

Our research has not supported the proposition that the HPCs will have cash flow yields superior to those of S&P companies. Cash flow yield shows inconsistent results for the 1997–2001 and 2002–2003 periods, but, overall, for both periods the yields of S&P companies exceed those of the HPCs by amounts that are significant at the 0.05 level. We believe that one reason for this anomaly is that the income for S&P companies is low compared with income for the HPCs. In Table 1b, for instance, profit margin in 1997–2001 for S&P companies is only 2%, versus 14% for HPCs. In the 2002–2003 period (Table 1d), the S&P companies on average actually had a loss of 1%, versus a profit margin of 13% for the HPC group. Since the denominator of the cash flow yield is net income, a low number would tend to produce high cash flow yield results.

A second reason for this anomaly is that the ratio is sensitive to changes in a company’s ability to generate cash from its operations. When net income is low due to non-operating items such as impairment and restructuring charges, which is often the case for non-HPCs, the cash flow yield can give a false positive signal. To test the extent of nonoperating items in S&P companies versus HPCs, we computed the following ratio for companies where net income is positive:

$$\text{Net income} - \text{operating income after taxes} / \text{net income}$$

Table 3. Effect of Nonoperating Items (Negative Incomes Excluded).

Industry	(Net Income – Operating Income After Taxes)/Net Income					
	1997–2001			2002–2003		
	<i>t</i> -test	HPCs	S&P 500	<i>t</i> -test	HPCs	S&P 500
28	0.005279	–0.05	–0.57	0.025624	–0.24	–0.75
35	0.004386	–0.06	–0.67	0.035620	–0.11	–1.60
38	0.223838	–1.53	–3.98	0.106425	–0.21	–0.75
73	0.049680	0.05	–0.10	0.052732	0.26	–0.27
All	0.000036	–0.19	–1.79	0.000000	–0.10	–0.93

Table 4. Analysis of Cash Flow Yield.

Industry	1997–2001				2002–2003			
	<i>t</i> -test	Cash Flow Yield Difference (%)	HPCs	S&P	<i>t</i> -test	Cash Flow Yield Difference (%)	HPCs	S&P
<i>(a) Cash flow yield with no negative incomes</i>								
28	0.000862	−71.08	1.28	2.19	0.009536	−63.87	1.44	2.36
35	0.008832	−66.40	1.70	2.82	0.020294	−201.60	1.55	4.68
38	0.175060	−150.22	2.44	6.11	0.121938	−48.97	1.65	2.45
73	0.000065	−47.39	1.47	2.17	0.221872	57.27	11.84	5.06
All	0.000000	−149.53	1.57	3.91	0.411044	−9.15	3.06	3.34
<i>(b) Cash flow yield with no outliers</i>								
28	0.001486	−79.16	0.95	1.71	0.110784	−64.77	0.91	1.51
35	0.069470	30.30	1.70	1.18	0.491507	0.46	1.55	1.54
38	0.403189	4.51	1.57	1.50	0.342690	7.00	1.65	1.53
73	0.197858	14.75	1.47	1.26	0.073595	−21.93	1.54	1.88
All	0.017745	−15.35	1.38	1.59	0.033630	−22.19	1.41	1.72
<i>(c) Cash flow yield with no negative incomes and no outliers</i>								
28	0.000066	−59.79	1.24	1.98	0.024796	−34.93	1.44	1.94
35	0.002612	−49.69	1.55	2.31	0.000020	−86.30	1.55	2.89
38	0.025395	−32.53	1.57	2.08	0.259873	−10.74	1.65	1.82
73	0.000065	−47.39	1.47	2.17	0.000062	−54.72	1.54	2.38
All	0.000000	−71.26	1.42	2.43	0.000000	−52.86	1.59	2.43

Our analysis excluded cases in which a net loss (negative net income) existed. The findings, which are provided in [Table 3](#), show that the S&P companies have large amounts of negative nonoperating items relative to HPC companies. In the 1997–2001 period, these items for S&P companies were 179% of net income, whereas they were only 19% of net income for the HPCs. When, as is often the case, these negatives are “added back” to net income in determining cash flows from operating activities, they will sway the cash flow yield in the direction of the S&P companies. The 2002–2003 period shows similar results. The nonoperating items are 93% of net income for S&P companies and only 10% of net income for HPCs. We also performed this analysis without excluding negative incomes, with the result that the same relationships held, but the *t*-tests were not as significant.

Finally, we tested the sensitivity of the cash flow yields to outliers and negative incomes by comparing HPCs with S&P companies under three conditions. First, cash flow yield is calculated without negative incomes ([Table 4a](#)). This test produced consistent results except for industry 73 in 2002–2003, which is the only cell in which cash flow yield for HPCs exceeded that of S&P companies. Second, cash flow yield is calculated without outliers ([Table 4b](#)). This test produced inconsistent results. Third, cash flow yield is calculated without negative incomes and outliers ([Table 4c](#)). This test produced the most consistent results. In all cases, S&P companies produced higher cash flow yields than HPCs, and, except for industry 38 the differences are significant. Overall, the S&P companies exceeded HPCs on cash flow yield by 71.26% for 1997–2001 and by 52.86% for 2002–2003. The differences are significant at the 0.0001 level or better.

These results, while not consistent with our original expectations, are understandable in light of low incomes and nonoperating items such as losses that cause non-HPCs generally to have higher cash flow yields than higher-performing HPC. However, as shown in [Tables 1 and 2](#), HPCs’ superior profitability when combined with their lower cash flow yields produces significantly superior cash flow performance measures. These results also support the premise that it is always important to examine the details of the operating section when interpreting the cash flow yield.

CONCLUSION

We began this research with four objectives: (1) replicate the previous study with certain modifications, (2) determine the sustainability of performance by HPCs, (3) identify operating asset management characteristics, especially

as they relate to the cash cycle, and (4) explain anomalies in the measures of cash flow yield. We have observed the following:

1. The results of our previous research were confirmed through a replication of the previous study with modifications of the sample and tests.
2. HPCs are able to sustain superior performance beyond the selection period and through differing market conditions.
3. HPCs display superior operating asset management as measured by the length of the financing period, although their performance across the three components of the measure is variable.
4. With lower net income and higher proportions of nonoperating negatives in relation to net income versus HPCs, S&P companies can be expected to have higher cash flow yields.
5. HPCs produce superior cash flow returns through superior asset management and profitability, but they also have lower financial risk as represented by lower debt to equity ratios, which tend to moderate the returns on equity and cash flows returns on equity.

This study, which is a part of ongoing research in the area of strategy and financial performance measurement, has several limitations, some of which we expect to study in future research. First, we were restricted to two SIC codes because of the small sample size. This was due to our confining our sample to S&P 500 companies. If we expand our sample size sufficiently to analyze at the three-digit SIC level, we expect to find similar results. Second, our individual industry studies included only four industries. That's because no industry other than these four had more than three HPC members. Third, we limited our ratio analysis to the items from the database without adjustment. For example, we did not adjust cash flow from operating activities for one-time operating or nonoperating items.

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APPENDIX A. FORMULAS FOR RATIO COMPUTATIONS

Performance Drivers

Asset turnover: $\text{Net sales}/\text{average total assets}$

Profit margin: $\text{Net income}/\text{net sales}$

Debt to equity: $(\text{Total assets} - \text{stockholders' equity})/\text{stockholders' equity}$

Cash flow yield: $\text{Cash flows from operating activities}/\text{net income}$

(In the analysis, if either the numerator or denominator of the cash flow yield was negative, the ratio was excluded.)

Valuation Performance Measures

Growth in revenues: $\text{Change in net sales}/\text{net sales}$

Return on assets: $\text{Net income}/\text{average total assets}$

Return on equity: $\text{Net income}/\text{average stockholders' equity}$

Cash flow returns: $\text{Cash flows from operating activities}/\text{average total assets and Cash flows from operating activities}/\text{average stockholders' equity}$

Free cash flow: $\text{Cash flows from operating activities} - \text{dividends} + \text{sales of capital assets} - \text{purchases of capital asset}$. (In the analysis, to adjust for size of company, free cash flow was divided by average total assets.)

Operating Asset and Financing Ratios

Receivables turnover: $\text{Net sales}/\text{average accounts receivable}$

Average days' uncollected: $365/\text{receivables turnover}$

Inventory turnover: $\text{Cost of sales}/\text{average accounts inventory}$

Average days' inventory on hand: $365/\text{inventory turnover}$

Payables turnover: $(\text{Cost of sales} \pm \text{change in inventory})/\text{average accounts payable}$

Average days' payable: $365/\text{payables turnover}$

Financing period: $\text{Average days' sales uncollected} + \text{average days' inventory on hand} - \text{average days' payable}$

APPENDIX B. HIGH-PERFORMANCE COMPANIES

Company Symbol	SIC Code	Description
ABT	2834	<i>Abbott Laboratories.</i> This company is a leading maker of drugs, nutritionals, and hospital and laboratory products
ADP	7374	<i>Automatic Data Processing, Inc.</i> ADP, one of the world's largest independent computing services companies, provides a broad range of data-processing services
AMGN	2836	<i>Amgen Inc.</i> The world's leading biotech company, Amgen has major treatments for anemia, neutropenia, rheumatoid arthritis, and psoriatic arthritis
AXP	6199	<i>American Express Company.</i> This company, a leader in travel-related services, is also active in investment services, expense management services, and international banking
AZN	2834	<i>AstraZeneca PLC.</i> Formed through the April 1999 merger of Zeneca Group PLC, of the UK, and Astra AB, of Sweden, AZN ranks among the world's leading drug companies
BBBY	5700	<i>Bed Bath & Beyond Inc.</i> BBBY operates a nationwide chain of nearly 400 superstores selling better-quality domestics merchandise and home furnishings at prices below those offered by department stores
BVF	2834	<i>Biovail Corporation.</i> This company is engaged in formulation, clinical testing, registration, and manufacturing of drug products using advanced drug-delivery technologies
CTAS	2320	<i>Cintas Corporation.</i> This leader in the corporate identity uniform business also provides ancillary services including entrance mats, sanitation supplies, and first-aid products and services

APPENDIX B. (Continued)

Company Symbol	SIC Code	Description
DELL	3571	<i>Dell Computer Corporation.</i> Dell is the leading direct marketer and one of the world's 10 leading manufacturers of PCs compatible with industry standards established by IBM
DHR	3823	<i>Danaher Corporation.</i> This company is a leading maker of tools, including Sears Craftsman hand tools, and of process/environmental controls and telecommunications equipment
ESRX	6411	<i>Express Scripts, Inc.</i> This company offers prescription benefits, vision care, and disease management services
FNM	6111	<i>Fannie Mae.</i> FNM, a U.S. government-sponsored enterprise (GSE), uses mostly borrowed funds to buy a variety of mortgages, thereby creating a secondary market for mortgage lenders
FRX	2834	<i>Forest Laboratories, Inc.</i> This company develops and makes branded and generic ethical drug products, sold primarily in the U.S., Puerto Rico, and western and eastern Europe.
GE	9997	<i>General Electric Company.</i> This industrial and media behemoth is also one of the world's largest providers of financing and insurance
GPS	5651	<i>The Gap, Inc.</i> This specialty apparel retailer operates The Gap Stores, Banana Republic, and Old Navy Clothing Company, offering casual clothing to upper-level, moderate-level, and value-oriented market segments
HD	5211	<i>The Home Depot, Inc.</i> HD operates a chain of more than 1,400 retail warehouse-type stores, selling a wide variety of home improvement products for the do-it-yourself and home remodeling markets
HDI	3751	<i>Harley-Davidson, Inc.</i> This leading maker of heavyweight motorcycles also produces a line of motorcycle parts and accessories

APPENDIX B. (Continued)

Company Symbol	SIC Code	Description
INTC	3674	<i>Intel Corporation.</i> Intel is the world's largest manufacturer of microprocessors, the central processing units of PCs, and also produces other products that enhance PC capabilities
ITW	3540	<i>Illinois Tool Works Inc.</i> ITW operates a portfolio of more than 600 industrial and consumer businesses
JNJ	2834	<i>Johnson & Johnson.</i> The world's largest and most comprehensive health care company, JNJ offers a broad line of drugs, consumer products, and other medical and dental items
JNY	2330	<i>Jones Apparel Group, Inc.</i> This company is the world's largest manufacturer of women's apparel, footwear, and accessories, with brands such as Jones New York, Nine West, Rena Rowan, and Evan-Picone
KO	2080	<i>The Coca-Cola Company.</i> Coca-Cola is the world's largest soft-drink company and has a sizable fruit juice business. Its bottling interests include a 40% stake in NYSE-listed Coca-Cola Enterprises
LLY	2834	<i>Eli Lilly and Company.</i> This major worldwide maker of prescription drugs produces Prozac antidepressant, Zyprexa antipsychotic, diabetic care items, antibiotics, and animal health products
MDT	3845	<i>Medtronic, Inc.</i> This global medical-device manufacturer has leadership positions in the pacemaker, defibrillator, orthopedic, diabetes management, and other medical markets
MRK	2834	<i>Merck & Co., Inc.</i> Merck is one of the world's largest prescription pharmaceuticals concerns. The company plans to spin off its Medco PBM subsidiary
MSFT	7372	<i>Microsoft Corporation.</i> Microsoft, the world's largest software company, develops PC software, including the Windows operating system and Office application suite

APPENDIX B. (Continued)

Company Symbol	SIC Code	Description
MXIM	3674	<i>Maxim Integrated Products, Inc.</i> This company is a worldwide leader in the design, development, and manufacture of linear and mixed-signal integrated circuits
OMC	7311	<i>Omnicom Group Inc.</i> OMC owns the DDB , BBDO , and TBWA worldwide advertising agency networks; it also owns more than 100 marketing and specialty services firms.
ORCL	7372	<i>Oracle Corporation.</i> This company is the world's largest supplier of information-management software
PAYX	8721	<i>Paychex, Inc.</i> This company provides computerized payroll accounting services to small- and medium-size concerns throughout the U.S.
PFE	2834	<i>Pfizer Inc.</i> PFE, the world's largest drug company, with about 11% of the global market, acquired Pharmacia in April 2003, in exchange for 1.8 billion PFE shares
PII	3790	<i>Polaris Industries Inc.</i> This company manufactures snowmobiles, all-terrain vehicles, personal watercraft, motorcycles, and related accessories for recreational and/or utility use
RHI	7363	<i>Robert Half International Inc.</i> RHI is the world's largest specialized provider of temporary and permanent personnel in the fields of accounting and finance
SGP	2834	<i>Schering-Plough Corporation.</i> This company is a leading producer of prescription and over-the-counter pharmaceuticals and has important interests in sun-care, animal-health, and foot-care products
SYK	3842	<i>Stryker Corporation.</i> Stryker makes specialty surgical and medical products such as orthopedic implants, endoscopic items, and hospital beds and operates a chain of physical therapy clinics

APPENDIX B. (Continued)

Company Symbol	SIC Code	Description
SYY	5140	<i>Sysco Corporation.</i> Sysco is the largest U.S. marketer and distributor of food-service products, serving about 415,000 customers
WMT	5331	<i>Wal-Mart Stores, Inc.</i> Wal-Mart is the largest retailer in North America, operating a chain of discount department stores, wholesale clubs, and combination discount stores and supermarkets
WYE	2834	<i>Wyeth.</i> This company (formerly American Home Products Corporation) is a leading maker of prescription drugs and over-the-counter medications

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MANAGEMENT CONTROL AND VALUE-BASED MANAGEMENT: COMPATIBLE OR NOT?

Paul C. M. Claes

ABSTRACT

This paper elaborates on the effects of Value-based Management (VBM) on the Management Control System in three Dutch (multinational) organizations.

The cases show that communication about the rationale of VBM and how it affects activities and decisions are more relevant for acceptance, than a metric-approach in which the calculations are explained into detail. In that view, other tools are used, such as Balanced Scorecards, value trees, or Activity-based Costing, while involving all functions throughout the entire organization, such as strategy, human resources, and production.

What seems to be most important is that target setting, remuneration and rewarding are aligned with the value drivers, holding people accountable for the activities they control.

1. INTRODUCTION

Lots of literature about Value-based Management (VBM) has been published in the last decade. Much of this relates to VBM-metrics and its

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assumed correlation with share price, as contributing to Shareholder Value Creation (e.g., Stewart, 1991; Biddle, Bowen, & Wallace, 1997, 1999). Other substantial research has been devoted to implementation of VBM and its effects on the corporate level (Armitage & Jog, 1999; Wallace, 1997; Haspeslagh, Boulos, & Noda, 2001). A third stream that can be distinguished is about the assumed conflict between the shareholder and stakeholder view on the firm (Jensen, 2001; Wallace, 2003).

However, only little research has been conducted on how the organization is affected with the implementation of VBM (Malmi & Ikäheimo, 2003). Especially, how VBM is implemented at lower hierarchical levels and how it specifically affects the management Control System, seems to be an unexplored field (Young & Selto, 1991; Langfield-Smith, 1997; Ittner & Larcker, 2001; Marginson, 2002). This paper will therefore elaborate on these issues, by means of describing the adoption and implementation of VBM in three Dutch organizations and how it affected their existing Management Control Systems. For these three organizations, the following issues will be addressed:

1. Why did the organization implement VBM?
2. How was VBM implemented?
3. How did VBM affect management control?
4. What were the effects of managing for value?

First it is necessary to have a clear description of what VBM is, and what definition will be used when talking about VBM in this paper. Rappaport (1986), Stewart (1991), McTaggart, Kontes, and Mankins (1994), Weissenrieder (1997), Arnold (1998), Copeland, Koller, and Murrin (2000), and Young and O'Byrne (2001), among many others, provide descriptions and definitions of VBM. When looking at these, four important aspects relating to VBM can be distilled:

- The first aspect of VBM, and basically the distinguishing characteristic of VBM compared to traditional performance management, is the cost of capital. Where net profits only include the cost of debt (interest), value is created when both costs for debt as well as for equity are covered.
- Second, the purpose is to create economic value (rather than maximizing accounting profits), based on the notion of residual income, which states that wealth is created only when a company covers all operating costs and the cost of capital (Hicks, 1946).
- Third, VBM is a managerial approach, meaning that applying VBM is not restricted to calculating the created value. It is an approach where many

techniques, concepts, and tools are used to meet the firm's objectives, relating to all organizational functional areas (e.g., production, logistics, strategy, finance, accounting, and human resources) and levels.

- Fourth, the VBM system is built around value drivers. This stresses the fact again that it is not about the calculation (e.g., [Haspeslagh et al., 2001](#)), but about the activities that are related to the variables of the calculation. These activities can be expressed in both financial and non-financial terms, and involve all organizational levels. Ways to operationalize this 'break-down' is by using for example the Balanced Scorecard or a 'value tree.'¹

Based on these aspects, I will define VBM as:

Value-based Management is a managerial approach to manage a company by focusing on the key value drivers in order to create value by investing in projects exceeding the cost of capital.

Regarding management control, I will use [Anthony and Govindarajan's \(2001\)](#) definition, as this definition best follows the aspects to consider as mentioned above regarding VBM. They describe the activities that are involved with management control as follows ([Anthony & Govindarajan, 2001, pp. 6–7](#)): (1) planning what the organization should do, (2) coordinating the activities of several parts of the organization, (3) communicating information, (4) evaluating information, (5) deciding what, if any, action should be taken, and (6) influencing people to change their behavior. Moreover, they state that 'management controls are only one of the tools managers use in implementing desired strategies,' besides organization structure, human resources management, and culture (p. 8). This leads to Anthony and Govindarajan's definition of management control: 'the process by which managers influence other members of the organization to implement the organization's strategies' ([Anthony & Govindarajan, 2004, p. 7](#)). This definition emphasizes that Management Control is largely about influencing behavior, which is exactly what needs to be focused on upon implementing VBM (e.g., [Haspeslagh et al., 2001](#); [Wallace, 1997](#)).

In order to obtain the necessary information for the three case studies, I interviewed corporate executives who were involved with the introduction and implementation of VBM from a corporate perspective, and in addition lower-level executives, whose activities should have been affected as a result of managing for value. This way, a comprehensive picture was obtained of the purposes and effects when firms decided to apply VBM, in order to learn how VBM was implemented to lower hierarchical levels and how it specifically affected the Management Control Systems.

This paper is organized as follows. In the next section, I will introduce the three case companies, followed by the reasons why they implemented VBM. In the subsequent sections, I will respectively focus on the implementation, management control systems, and the effects of managing for value on behavior, decision making and performance, by comparing the three organizations. The paper ends with conclusions and directions for future research.

2. INTRODUCTION TO CASE COMPANIES

This section introduces the three organization that are subject of this study.

2.1. Akzo Nobel N.V. (from now on: Akzo Nobel)

Akzo Nobel is a diversified multicultural group of companies with activities in pharmaceuticals, coatings, and chemicals. They develop a competitive advantage by combining the focus and entrepreneurial spirit of a decentralized business unit organization with the scale and power of a corporate center that provides access to global capital markets, managerial talent, and best practice management processes. In 2004, total net sales amounted EUR 12.7 billion. The three groups contributed to the realization of these sales as follows: Pharma 25%, Coatings 41%, Chemicals 34%.

In 1993 the organizational structure of Akzo Nobel was changed, resulting in new corporate staff departments and the adaptation of the employee participation structure in the Netherlands. Former division offices and corporate offices were integrated in order to effect a higher level of decentralization. At that point, the two-layer organization model turned more visible. Applying this structure effectively, Akzo Nobel's widespread activities were attributed to business units that report directly to the Board of Management. The business units had such delegated authorities that they could adequately and quickly respond to market developments. In turn, the business units were clustered into so-called Groups (i.e., Chemicals, Coatings, and Pharma). The General Managers were responsible for the performance of their business units. To safeguard consistency and coherence for the total organization, corporate directives had been established by the board of management. At the corporate level, certain functions were centralized in order to execute a coherent policy, e.g., regarding administration and control, finance, human resources, legal affairs, strategy and technology.

In the 1999 annual report, Akzo Nobel made its value-driven management explicit for the first time (p. 21):

Our ambition in the year 2000 is to make a further shift to value creation as the driving force for our businesses.

2.2. Heijmans N.V. (from now on: Heijmans)

Heijmans is a leading Dutch construction and property development company. Aspiring to operate as a full-service construction and property development company, Heijmans focuses on all of the activities in the value chain, from consultancy services and design to maintenance and management. By 2008, Heijmans aims to realize approximately 35% of its income from operations concerned with the preliminary stages (consultancy services, design and development), approximately 45% in the construction phase and approximately 20% in the follow-up phase (service, maintenance and management).

In 1972, the company changed its legal structure from a public company into a holding company with operating companies, which were part of product/market-based divisions. Upon this reorganization, all fixed assets were centralized in a Central Facility Company. When needed, the operating companies could rent the necessary equipment and machinery. This way, operating companies effectively had no capital, besides occasionally buildings.

In September 1993 Heijmans entered the capital market when their shares were listed on the Amsterdam Exchanges (Midkap funds). The listing was necessary to raise funds for financing acquisitions, and maintaining a sound solvency in order to secure independency (avoiding a hostile takeover or strict supervision by banks).

On January 1st, 1995, Joop Janssen took office as Chairman of the Board of Management. In the 1996 Annual Report he mentioned in the paragraph on risks and risk control, that (p. 14):

growth should again be accompanied with an increase in profitability per share and an increase in the economic value added. That way, the objective of increasing the value of the company for the shareholders can be achieved.

2.3. Schiphol Group N.V. (from now on: Schiphol)

Schiphol is an airport operator. The company's mission is to create sustainable value for its stakeholders by creating and developing AirportCities² and by positioning Amsterdam Airport Schiphol as the leading AirportCity.

Since 1958 Schiphol is a privately owned company, although shares are distributed among the Dutch state (75.8%), the municipality of Amsterdam (21.8%), and the municipality of Rotterdam (2.4%). Over half of Schiphol's turnover (EUR 888 million over 2004) is derived from airport fees. Other revenues are generated by concessions, parking fees and real estate as well as participating interests. These sources of revenue are based on the company's four Business Areas of Aviation, Consumers, Real Estate and Alliances and Participations.

In 1997 Schiphol set out new corporate objectives. Core of this new, *market*-based strategy was to develop Schiphol into a customer-focused and innovating airport, where various means of transportation come together and which is attractive for transfers. For that reason, responsibilities and authority were decentralized to business units.

At that time, Schiphol also explicitly articulated that privatization would be most desirable in order to achieve their new organizational objectives. They felt, as stated in the 1997 annual report, that 'privatization allows us opportunities to operate in a different way financially' (p. 11). A smaller state's stake would give the organization better access to capital markets to raise funds for future activities. Besides, opportunities would arise for alliances and participations by means of exchanging shares. Therefore, Schiphol started an Investor Relations program as of 1998 to strengthen the ties with their financial stakeholders and potential investors.³

After the new structure went into effect as of January 1, 1998, the newly appointed CFO and corporate controller both wanted the financial management of the business units to show what was effectively earned in economic terms.

3. REASONS FOR IMPLEMENTING VALUE-BASED MANAGEMENT

After the brief introductions to the companies in the previous section, I now continue with the reasons why these organizations implemented VBM. In analyzing these reasons, a distinction will be made between external and internal reasons.

3.1. External Reasons

From an external point of view, capital markets had an important stake in deciding to manage for value. As a result of increased pressure, mainly due

to acquisitions, Akzo Nobel and Heijmans realized they needed to obtain a sharper focus on capital use. Akzo Nobel described this as follows in their 2000 annual report (p. 6):

We measure value creation today in terms of Economic Value Added (EVA), a concept we are currently introducing throughout the Company. It should improve capital productivity, have a positive effect on shareholder value, and better reflect today's thinking on value creation.

Heijmans' Finance Director told in this respect: 'An important part of invested capital is working capital. Reduction of working capital has a number of positive advantages, among others, lower costs of capital. A strong focus on EVA will be necessary in order to securely stay in the drivers' seat, rather than the banks taking over control.'

One of the main reasons for Heijmans to adopt VBM was for communication toward the stock exchange. The corporate executives interviewed, though, were aware of the fact that the link between EVA and share price is questioned. Heijmans had been renowned for its external communication, ever since its initial listing on the Dutch Stock Exchange (in 1993).⁴ However, the listing introduced the capital market as a serious stakeholder in the company. The 1997 annual report, covering the year in which VBM was implemented, stated in that respect (p. 13):

Recent discussions, among others resulting from the investigation of the commission corporate governance, focus the attention of Dutch companies mainly towards capital providers. Starting point in that view is that managing for shareholder value will guarantee that in the long run, besides shareholders, also other stakeholders will maximize their value.

The impact of the capital market on Schiphol's decision to implement VBM related to the potential initial public offering. Since Schiphol reasoned that the capital market also required a rate of return on the money the shareholders put in the organization, according to management VBM was a logical consequence. Consequent stakeholders to a privatization, such as investment banking analysts, were in management's opinion increasingly interested in how value is created. Schiphol's management perceived to have an adequate answer to value-related questions in VBM.

A more specific external reason for implementing VBM at Schiphol was based on the pricing mechanism for airport tariffs that exists as imposed by the government and the Dutch Competition Authority (*Nederlandse Mededingingsautoriteit* – NMa). This mechanism implies that Schiphol needs to discuss their tariffs with the government and the NMa, who allow Schiphol to make a certain rate of return on their aviation-activities, which

is included in the Dutch Aviation Act (*‘Luchtvaartwet’*). The NMa requires therefore that the accounting systems are able to identify *Aviation* activities and transactions. A former corporate controller states that ‘VBM is a necessary tool to confront the authorities, NMa, and airlines, in order to defend proposed tariffs.’

Regarding the stock market, Akzo Nobel noticed that their share price lagged the market index. This was a sign that the firm might become a target for a (hostile) takeover, fueling the urge to keep a closer eye on corporate performance. From that perspective, a sub-business unit controller was of the opinion that the most important reason to implement EVA was to link Capital with the Profit & Loss account. As he stated, ‘EVA is a logical link between these two blocks, therefore making it easier to explain why there was such pressure on working capital and investments.’

3.2. *Internal Reasons*

This last external reason links to the reasons of implementing VBM from an internal perspective. By means of VBM, Akzo Nobel encouraged entrepreneurial behavior, since all business units have a very high level of autonomy. Managing for value was, according to Akzo Nobel, a solid push in the back to accomplish a change of mindset among management and employees to behave like owners, and manage the company at the lowest possible costs, including the cost of capital.

This thought was reinstated by Heijmans, who pursued to create awareness for working capital, more specifically accounts receivable, inventory, and accounts payable. Since Heijmans emphasized working capital when talking about VBM, it was often referred to as ‘working capital management’ rather than EVA.

Schiphol’s activities require high investments, resulting in questions of how much returns these investments actually yield. VBM provided the required insight into the true profitability of investments, given the fact it takes considerations into account that the traditional investment analyses did not, while having a significant impact on these investments, such as asset allocations and its methods and the capital charge.

Besides, Schiphol felt the desire for implementing one single management system that would align external and internal reporting and control, instead of having different systems providing different information. This way, everybody who contributed to VBM and was held accountable for (parts of) it could see that a consistent system was used with one single ‘database’ feeding the reporting and performance management system. The Oracle

system that replaced SAP in 1997 provided the necessary data warehousing function, while the new information architecture allowed reporting on different dimensions.

In order to meet the NMA's requirement to explicitly distinguish aviation activities (costs) from the other activities, the 2000 annual report described a new organizational structure as follows (p. 19):

Schiphol Group's strategy is increasingly directed at commercial services for end-consumers.

To manage such diversification, Schiphol Group uses a matrix structure with operational business units and a division into product-market combinations (PMCs). These PMCs are categorized according to four Business areas: Aviation, Consumers, Real Estate and Alliances & Participations. In 2000, the necessary basis was established to bring the accountability structure in line with the adapted business model.

Appendix 1 summarizes the reasons for implementation.

4. IMPLEMENTATION OF VALUE-BASED MANAGEMENT

This section describes the key characteristics in the implementation of VBM.

Table 1 first provides a brief overview of the metrics the organizations applied when implementing VBM in expressing economic value creation.

4.1. Akzo Nobel

Regarding implementation, Akzo Nobel put in considerable time and effort to train management, who were subsequently responsible for implementing VBM in their unit. After initially given complete own responsibility, it soon became apparent that such freedom did not contribute to a successful implementation. In order to have more effective communication throughout the company and have one office for all EVA matters to help and support the business units, the position of 'EVA coordinator' was introduced in 2001. This EVA coordinator, among other things, set up an intranet site where all employees can post questions or look for information, developed a 'drivers game' to gain insight into the effects of different kinds of decisions on EVA, organized 'value seminars' where people from different business units meet and hear and discuss about issues relating to EVA, and drew up a brochure for all employees in plain, non-technical, language.

Table 1. VBM Metrics.

	Akzo Nobel	Heijmans	Schiphol
As of year	2000	1997	1999
Metric	EVA	EVA	Return on Net Assets/Economic Profit
Adjustments	<ul style="list-style-type: none"> • Taxes • Major Investment Relief^a • Exceptionals • Off-balance sheet items • Cash • Pensions 	<ul style="list-style-type: none"> • Goodwill • Taxes • Leasing Differences in EVA definitions exist between divisions.	None
Cost of capital	One corporate WACC	Initially WACC per division; per 2002 one corporate WACC	Initially WACC per business area; per 2002 one corporate WACC; as of 2005 WACC per business area for internal purposes

^aThe Major Investment Relief (MIR) is introduced to avoid rejection of capital-intensive investments, that in the first years yield negative EVAs, and as a consequence would discourage managers to invest in such projects. With the MIR, the negative EVAs of maximally the first three years are capitalized into the future. Hence, managers are basically ‘exempted’ from the first three years of negative EVAs in their performance.

From the start in 2001, Akzo Nobel linked remuneration incentives with value creation, initially for higher management. As of 2003, the EVA performance was linked to the bonuses of all Dutch employees, while the impact of the bonus ranged in percentage with respect to the hierarchical level. This variable percentage related only to executives, and increased with the level of executive (links to area of responsibility, or function). The widespread link ensured a change in mindset to use capital efficiently among all employees, instead of restricting this understanding only to higher managerial levels. Since the new incentive plan involved all employees, unions were informed about the system and agreed to its implementation.

4.2. Heijmans

Heijmans also contributed considerable time and effort in implementing VBM. In training programs, VBM was included in the Finance part of such

programs as last module. That way, it was shown that VBM was an all-encompassing instrument that involved all other disciplines, like human resources, strategy, and marketing. Or, as a division executive tells: ‘Eventually, all the pieces of the program fit together in EVA.’

Similar to the early implementation of EVA at Akzo Nobel, no effective communication between business units existed. For instance, one of the divisions developed a value tree. The division executive said: ‘This is a sheet that is shown at courses and which is understandable, compared to talking about Stern Stewart’s 160 possible adjustments. Discussions should not be centered around the calculations, but around the concepts. That way, employees know that they need to create value, rather than have to pay investors. With a value tree, this awareness is immediately born.’

However, a problem that Heijmans experienced, was that different definitions were used between corporate EVA reporting (like in the annual report) and the divisions. Reason behind these differences were that the divisions were of the opinion that the ‘standard’ (corporate) EVA model required some adjustments in order to be better applicable given the division’s specific circumstances in which it operates. According to all executives interviewed, though, it should be both possible and desirable to have a uniform system.

Nevertheless, EVA never really gained foothold at lower levels in the organization since no consequences were linked to EVA-performances (neither in financial nor non-financial gains, such as bonuses or promotions).

4.3. Schiphol

Main point when implementing VBM at Schiphol was to stress that it not only provided shareholder value creation, but also took notice of other aspects, as included in the so-called Diamond (to be discussed in the next section, about control). In the early years, VBM was extensively used in the areas of investment decisions as well as operational management. However, as a result of the mandatory restructuring due to the NMA’s requirement of distinction in costs for aviation activities and others, the organizational responsibilities became rather complex and attention for VBM deteriorated. The organization was restructured to administrative business *areas* and physical business *units*, compared to only having business units before. A business unit controller told: ‘This construction is more aimed at making the calculations, rather than control the organization.’ Schiphol’s managing board made this distinction even more profound: the Chief Financial Officer (CFO) was more focused on (the administrative) Business Areas, which need

to create value, while the Chief Operating Officer (COO) was more aimed at (the physical) Business Units for organizational planning and control.

However, by 2003–2004 VBM regained attention. One of the reasons for this ‘resurrection’ was that Schiphol was redesigning its business processes to bridge the gap between business *areas* and business *units*. This enabled management (at all levels) to catch the concepts or refurbish its understanding of VBM by means of a new training schedule aimed at explaining the thoughts behind the system and the eventual effects on economic value when acting alike. That way, a former corporate controller claimed, business processes throughout the organization would be better aligned, while it also improved internalization of VBM in the mindsets of people and procedures to be followed. Or, as the former corporate controller put it: ‘If you want people being held accountable for RONA, you should also manage on RONA, hence see to it that everybody understands the system to improve that measure.’

The highest management levels (Managing Board and Business Unit management) had targets defined in VBM terms, whereas other performance criteria differed between individuals (such as customer satisfaction and improving the purchasing procedure).

Appendix 2 summarizes the key characteristics of the implementation at the three organizations.

5. VALUE-BASED MANAGEMENT AND THE MANAGEMENT CONTROL SYSTEM

This section describes the characteristics of the management control systems of the companies when managing for value.

5.1. Akzo Nobel

Akzo Nobel is aware of the fact that EVA is a historical measure, and for that reason managing is based on the change in EVA rather than absolute EVAs. Although the Corporate center is informed monthly about the business units’ performances, formal presentations of results take place once every quarter. These are based on EVA and grounded on the performance of the last quarter, and the expected performance for the next three quarters. Next to EVA, the presentations contain other ratios, since these can be more or less considered as value drivers, as suggested by the EVA coordinator. In the last quarter of each year, a three-year strategic plan needs to be submitted.

On sub-business unit level, application of traditional budgets are common practice. Starting point in these budgeting processes is not that the EVA must improve and subsequently plans are made to realize that, but that BU management has a plan in mind, and the impact on EVA is considered. Therefore, sales and profits are starting point, in a bottom-up process within the organization.

Since EVA targets are determined top-down, from a corporate target, down to group target, and subsequently to business unit target, the sub-business units budgets do need to be aligned with the BU's EVA target. Despite the tight corporate financial control, business units have their own responsibility to develop strategies in meeting their targets, as outlined in the three-year strategic plan.

In realizing working capital reduction, Akzo Nobel started using 'consignment stocks' around 2003. These are inventory that are physically present at Akzo Nobel's production sites, although they are still the supplier's possession. Although no part of Akzo Nobel's working capital, they are at their direct disposal. This system is used in the Netherlands and Italy, and will be introduced in Spain and Sweden. The moment Akzo Nobel uses the materials, it is booked and invoiced. Just-in-time delivery appeared to be too risky, for example as a result of traffic. With this system, Akzo Nobel faces less risks, since the supplier looks after the inventory, the inventory levels, guarantees availability, and invoices when used, while the same terms for payment apply.

In the case of the Coatings sub-business unit Italy, financial overviews have a uniform format for all areas, including figures from the previous quarter and 'year-to-date' figures, comprising budgeted amounts, amounts of the previous year, and actuals for this year. This overview also gives, for example, the average net price per liter paint. This way, an internal benchmark is created resulting in exceptions to be noticed immediately, for which the managers are expected to give an explanation. Advantage of this system is that two flows come together: area operating income, where taxes are subtracted, and capital (specifically total working capital: inventory and accounts receivable with a separation between paid/not to be paid). The overviews are not the result of the implementation of EVA, but the fact that the amounts on the overviews can now be traced back to details is specifically added for EVA purposes.

5.2. Heijmans

Heijmans' growth targets have for many years been communicated in terms of turnover and profits, and are therefore the two prime financial indicators.

As a consequence, focus within the organization is on the Profit and Loss accounts. According to the corporate executives interviewed, another reason for the remaining focus on P/L is that employees are not held accountable for EVA, albeit that the calculations are made for each division. This lack of EVA accountability, the corporate executives think, may be partly due to a missing link in alignment between value creation and remuneration.

In executing the strategy, Heijmans leaves the divisions and operating companies full autonomy in using instruments and tools like the Balanced Scorecard. A division director says: 'You can see that with EVA in conjunction with the BSC a few things come together. What counts to reach a final financial result are the indicators in the BSC, and those are the key value drivers. You see the financial results by means of the EVA and the indicators in the BSC jointly developing. This is how the operating companies are managed and it starts to pay off.' The division director realizes that EVA is a historical measure, and that is some problem. In his view, companies therefore need to look at other parameters/measures where EVA is grounded on. According to the Finance Director, the use of instruments depend on the people who are in charge and their interests.

Division management tries to pick the best pieces from operational management to share these with other operating companies. For example, if an operating company has a good time schedule or system for controlling their accounts receivable, this is communicated to the other operating companies. Besides, companies do help each other if they find out someone has a problem. As a division director said: 'First they laugh with each other if an operating company has high accounts receivable outstanding, but now it gradually grows to solve such problems in a joint effort.'

As a result of internal discussions, the assets of the Central Facility Company (CFC) are not allocated to the divisions/operating companies effectively using the assets. CFC remains therefore regarded as a separate entity with their own EVA responsibility. The rent is expensed on the operating companies' profit and loss accounts using the assets, while reported as revenues on CFC's profit and loss account.

Although the ambitions are present, other priorities (e.g., implementation of a new company-wide consolidation software package and IFRS) did not allow corporate management gaining a stronger internal focus on EVA by means of a uniform outlay for EVA with uniform definitions. Besides, the corporate executives expect discussions about the allocated costs from the Holding to the divisions, and the calculations of the weighted average cost of capital (WACC). They wonder what value such discussions add to the application of VBM in the divisions.

Focusing on EVA/VBM has not been on its name as such, but more on working capital, an important value driver in the construction industry. Targets are aimed at underlying value drivers, e.g., invested capital and accounts receivable outstanding.

5.3. Schiphol

For control purposes Schiphol developed its ‘Diamond.’⁵ This tool includes both financial and non-financial measures on a fourfold perspectives: ‘Financial,’ ‘Quality,’ ‘Sustainability and Innovation,’ and ‘Employees and Organization.’

‘Cutting’ the Diamond is based on responsibilities and accountability. First, the financial indicators for the Diamond are determined by the executive board on corporate level, and subsequently derived to business *area* (BA) and business *unit* (BU) level. The operational indicators in the Diamond are developed the other way round, starting at the business *unit*-level. The business units set their operational indicators and targets, in order to meet the financial targets. The business units’ indicators are based on its operational departments, with performance indicators like for example occupancy rate in letting office property square meters, revenues of parkings, concessions for shops in the terminals, and on-time departures of airplanes. The business units’ Diamonds are subsequently used to build the Diamond on business *area* level, and the corporate Diamond. Financial indicators therefore follow a top-down approach, whereas operational indicators flow bottom-up. Appendix 3 includes an adapted example of the Diamond.⁶

On operational level, neither a separate Diamond is implemented, nor EP/RONA is calculated. As a business unit controller told: ‘due to insufficient controllability on assets, and thus its accountability on the capital charge.’ These operational departments’ indicators are focused on their specific operational activities that are within their control, but are not formalized in a management control system. A business unit controller stated that she ‘does not feel that the management control system should be organized that way, since these detailed schemes are not used anyway.’ In this same fashion, she ‘does not consider it to be important to have a value tree, once you know the business.’ She continued: ‘A project has started to improve Schiphol’s planning and control cycle. In this new cycle, strategy must qualitatively be improved to make it more activity-directed, where in turn these activities are translated into the financial model, because that is currently no more than a separate calculus exercise. Subsequently, a clear link must be established between strategy and budgets.’

Until 2005, BU Management Teams were held responsible for P/L, although BU directors were also held responsible and accountable for RONA. This system ascertained that interests at managerial levels were aligned on creating economic profit, but that managers were held accountable for the activities they carry responsibility for. Only the BU director could be held directly accountable for a RONA, while the other members of the management teams were only responsible for their part of the BU, was the reasoning.

The consequence of the fact that control was based on two grounds (BAs, only administrative, without management, and BUs), resulted in a model that was in place to be used for the five-year planning, built upon a VBM analysis, but which was considered to be a black box to everybody, said a business unit controller. The Schiphol organization was based on processes, which did not by definition need to equal how Schiphol approached the market. Therefore, external and internal control were not aligned. For instance, the terminals are primarily built for passenger transfers, but also house shops, stores and other concessionaires. Since these activities related to different PMCs and BAs, allocation (both costs and assets) was a very complex exercise. As of 2004, however, allocations are effected directly by the information system (Oracle), which was also required by the NMa. Since these allocations take place by means of journal entries in the book-keeping system, it also forced Schiphol to describe clear and transparent procedures.

To solve the misalignment in control, as of 2005 business *units* are abandoned, and departments are directly linked to business *areas*, whose entire management is EP/RONA responsible.

Appendix 4 shows the key control characteristics how these organizations manage for value.

6. EFFECTS ON BEHAVIOR, DECISION MAKING AND PERFORMANCE

This section will look into the effects on behavior, decision making and performance, now these companies manage for value.

6.1. Akzo Nobel

With introducing EVA, Akzo Nobel also introduced a consistent focus and common language over all business units, compared to a range of

different measures that were used in the pre-VBM era (e.g., ROI, ROS). As a consequence, more attention is paid to (working) capital, in order to achieve 'profitable growth and sustainable profits.'⁷

Regarding allocation of resources, the effects are best described in the 2004 annual report (p. 10):

We regularly evaluate the added value of the composition of our portfolio in a pragmatic way, driven by our value creation principle. As in the past, we will not shy away from bold moves.

The sub-business unit director experienced that EVA resulted in a higher awareness for the balance sheet, with the consequence that decisions are often scrutinized for its effects on the EVA. However, he never saw the statement again which was called when rolling out EVA, that 'Capital is plenty available, but it is expensive.' In his view, even a good project is hard to be approved.

In this similar light, the EVA coordinator told that production and site rationalization also became common practice, especially at the Coatings-Group where equipment is easy to move. This is also illustrated by one of the 'priorities' that caused the delay in including the EVA calculation in the regular information system in Italy, where three production sites were added together to one.

Lately, a couple of units at Akzo have started a pilot by introducing activity-based costing in conjunction with EVA. To each activity a capital charge is included, to gain insight in the profitability of products and customers. However, at this stage it is more for their own information than that it is already used in decision making.

6.2. Heijmans

Although Heijmans introduced and adopted EVA, the drive adheres to growth and grow bigger, where economic value creation is only of secondary concern. Acquisitions are assessed in terms of payback period, development in price/earnings ratio, discounted cash flows, Goodwill/Intrinsic Value-ratio, and debt ratio (equity/debt). Foremost, the division executives told that the strategic value of the acquisition is probably most important.⁸

A former corporate controller said: 'Behavior does not really need to change, since the companies know very well how to make money.' He could imagine that the focus of an entrepreneur would shift from, for example, profits to working capital, but he stresses that it is certainly not the case that

the companies are currently doing a bad job, and would only start making money once managing on EVA. Besides, the former corporate controller stated that ‘decisions regarding purchasing of equipment are not taken differently from before EVA was implemented, despite that as a result of EVA the costs of capital should be taken into account. Awareness is not yet that deeply rooted in the organization.’ In that view, he added an important issue that operational management needs to be aware of the fact that the corporate shareholders also require a return, and that making a profit takes more than just earning the interest on debt. This is also illustrated by the fact that operating companies are not very willing and cooperating in sacrificing their autonomy, for example in favor of joint purchasing to cut costs.

It is remarkable, told the business unit director, that technically educated people who understand EVA are more aimed at finding solutions and being more proactive, compared to business-educated people who are more backward looking and can perfectly tell why something went wrong. Or, in his words: ‘Business-educated people can tell you why a company went bankrupt, while technically schooled people try to avoid going bankrupt.’

Since the implementation of EVA in 1997, considerable time and effort was dedicated to make management aware of EVA and its drivers, said the Finance Director. However, throughout the years enthusiasm gradually declined since operational management considered it to be too complicated and as a consequence did not understand the model. The EVA calculations often resulted in discussions about the calculations, but not about setting EVA targets for next year and manage the drivers to realize that target. The focus remained on profits, and the capital base has not been reduced after the implementation of EVA.

The IFRS have had an enormous impact in fiscal year 2004, and this seriously delayed further developments in EVA. EVA has not yet been abandoned, but as a result of other priorities, like for instance the IFRS, only very little emphasis was put on this system.

The Finance Director is, however, personally inclined to put EVA back on the corporate agenda, though in a simplified form, related to management’s requirements and depicting the system by means of a DuPont-chart. With EVA, he told, ‘one language is spoken throughout the organization, which is crucial in having the model accepted.’ Preferably, he feels that this simplified EVA should also be added to the 2008 targets. If it gets this far, quarterly reporting on EVA is within reach, contrary to the current situation of ‘annual calculations without-questions-asked.’

6.3. Schiphol

At Schiphol, managing for value did not reduce investments, but ‘did absolutely have an impact on investments, in the sense that motivation and discussions became much more profound,’ as the corporate controller stated.

Unfortunately, at lower levels, the old culture of: ‘it has always been possible, it is still possible, we need it, so let’s buy it!’ had been vivid for some years after implementation. However, ‘even at levels where one would not expect it anymore decisions are made which not fully comply with VBM-principles, because certain aspects are overemphasized that are not supported by VBM,’ told the former corporate controller. Both the former corporate controller as well as a business unit controller acknowledge that this change in culture needed time, certainly since it concerned a change due to the transition of a public body to a private company, and eventually listed company.

The cultural change that is effected is attributable to a combination of factors playing at the same time (e.g., rejuvenated attention for VBM, organizational restructuring, business process redesign, and a renewal/rejuvenation of management, who have been given the specific duty of effecting a cultural change). The business unit controller stated in this respect that ‘although it cannot be solely attributed to VBM, but it probably will have helped, is that the organization became more businesslike and professional in its attitude. It turned into more target driven, more transparent (although still subject for improvement), and results driven.’

In business planning and budgeting neither the system nor periodicity have changed upon implementing VBM, but the contents of both business letters and budget letters are now based on VBM. Target setting is based on VBM, and control is aimed at meeting these (RONA) targets by means of the Diamond.⁹

VBM provides management with a complete management system, compared to a more pragmatic system that was used before. This increased view on management created a better awareness for RONA, and how activities and decisions have impact on the results. For example, for the Business Area Aviation it is clear that the focus must be on costs and investments, while for Consumers the focus is more aimed at the revenues side, like selling concessions, generate turnover (e.g., from parking fees), penetration degrees, and that Real Estate should focus on its unique location, and generate cash by letting the office buildings.

According to a former corporate controller, ‘financial performance has certainly improved due to VBM.’ However, the controller admits this is just a personal conviction, since ‘it can never be proved because you will never know how it would have been without VBM.’

The effects are summarized in Appendix 5.

7. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

When comparing the three organizations, some interesting differences appear. In this concluding section, I will focus on these differences and try to relate these to the differences in successful application of VBM.

7.1. Reasons

First, when looking at the reasons why these companies implemented VBM, although all three companies do mention that the capital markets had an important stake in deciding for managing for value, Akzo Nobel and Schiphol also considered non-financial aspects.

Akzo Nobel, for instance, intended to encourage entrepreneurial behavior as a result of the high level of autonomy of the business units. Having employees behave like owners, accomplishes the necessary change in mindset. Schiphol, on the other hand, was looking for a single management system to align internal and external reporting and control, instead of having different systems providing different information, that was until that time common practice in the various business units.

7.2. Implementation

With respect to the implementation, differences can, among others, be found in light of the calculations. Akzo Nobel uses EVA, with a uniform definition throughout the organization, and with a limited number of adjustments to operating profit and capital. Besides, they apply one corporate WACC. In addition, EVA is directly calculated from the information systems in place.

Heijmans has a corporate definition, but divisions adjusted this definition to their own situation, making figures incomparable. In addition, WACCs were initially calculated for each division, taking the different risk profiles into account. However, later it was decided, for reasons of simplicity, that these different WACCs were replaced with one corporate. Throughout the

organization, different information systems are in place as a result of the high number of acquisitions. These systems do not directly provide EVA information. Albeit that at corporate level the calculations were initially and intentionally held simple, the system evolved with an increasing complexity as a result of the fact that the divisions felt they needed to adjust the definitions to their own situation.

Schiphol followed a similar pattern like Heijmans regarding the WACC. Initially, the four business areas all had their own cost of capital, but later one corporate WACC was applied, with the exception of aviation as a result of legal requirements. Differences between the other BAs seemed to be too small, that it was decided to release these separate WACCs. As of 2005, due to the restructuring, the BAs were assigned specific WACCs again for internal purposes. Besides, the calculation of RONA/EP is directly linked with the information system in place.

7.3. Impact on Management Control System

Differences regarding implementation and control also appear in the extent to which the use of VBM stretches into the organization. At Akzo Nobel, VBM is a 'way of life' for all employees. All employees are familiar with EVA, although they are only held accountable for aspects they control. In that view, both financial and non-financial measures are used (e.g., by means of the Balanced Scorecard). Focus is not on managing EVA, but on how to manage the business to increase EVA (thus, on value drivers). In order to use EVA as a corporate language, Akzo Nobel created the position of EVA coordinator as 'one-stop-shop' to coordinate communication and initiate supporting tools throughout the organization. That way, implementation of VBM was streamlined compared to the initial efforts which resulted in a lack in communication between the BUs.

At Heijmans, implementation of VBM was also left to the divisions' management. However, the divisions were left full autonomy, e.g., in applicability of tools like the Balanced Scorecard or value trees. No inter-divisional coordination was at hand. Focus was on working capital, in addition to turnover and profit, and the extent to which VBM was used is restricted to higher and middle management. No one was actually held accountable for EVA performances; it was considered to be nothing more but a calculus exercise. Recently, operational measures are included in the control of divisions, albeit that EVA is not considered in these measures (based on net profit margin and ROI).

Schiphol implemented VBM centrally, and only a very limited number of managers was involved. Due to a legally required restructuring, resulting in a complex organizational structure with unclear responsibilities, use of VBM drifted away to a mere calculation for controllers. The Balanced Scorecard is used to express that managing for value reaches beyond financial metrics. Financial targets/indicators are set top-down in the organization, while operational targets/indicators are set bottom-up, ensuring they are in conjunction with each other. That way, all members in the organization are actually involved in and eventually contribute to creating value. Employees are only held accountable for the activities they control, which are included in the target setting. To align internal and external control, business units are abandoned as of 2005, and operational departments are univocally related to business areas.

7.4. Remuneration

Remuneration is another aspect on which the three companies differ. Akzo Nobel implemented EVA gradually throughout the organization, allowing people time to get accustomed to the managing for value principles. Remuneration followed a similar path: first the link with EVA performance was restricted to top management, while as of 2003 all Dutch employees have a link with EVA.

Heijmans had no remuneration policy based on performance, except for the board of management. However, no link was established with EVA or value creation.

Schiphol is extending its remuneration policy. Initially, only the Board of Management and business unit directors were held accountable for RONA/EP targets, which were subsequently linked to remuneration. As of 2004, the entire business unit management is held accountable for EP, and as of 2005 business areas, making it more profound that the entire management is responsible for achieving EP targets. This policy will in the next years be extended to lower levels.

7.5. Effects on Behavior, Decision Making and Performance

When looking at the effects, Akzo Nobel seems to have achieved the most. EVA introduced a consistent focus and common language, leading to a higher capital consciousness and consequently higher awareness for the balance sheet, e.g., in the effected site rationalizations and allocation of

resources, although the extent to which this is possible depends on a group's activities and legal requirements.¹⁰

Noting the executives interviewed, Heijmans achieved probably the least. EVA is not considered in investment proposals, and discussions often focus on the calculation rather than the drivers of value. Operational management considered EVA to be too complicated, which resulted in a gradually declining enthusiasm for using EVA. In addition, implementation of the IFRS also distracted attention of EVA. In the year 2005, the decision will be made to revitalize EVA, or abandon it.

Schiphol stands in between. After a good start, applying VBM in, for instance, investment proposals and introducing the Diamond to link non-financial measures (and lower-level employees) to value creation, the legal requirement of changing the organizational structure resulted in a hazy structure of responsibilities. Control was aimed at business units, while the business areas were the entities to create value, although these business areas were not formally managed. With the revitalization in 2003, as a result of the business process redesign to bridge the gap between business areas and business units, VBM again provides management with a complete management system, compared to the fragmental view as previously was the case. The effects of the 2005 abandoning of BUs are not clear yet, albeit that awareness grew of how activities and decisions have impact on RONA/EP in order to focus attention in managing the business.

Based on the cases described in this paper, it can be concluded that in applying an effective and efficient VBM system, the management control system needs alignment in setting targets, rewards and communication with value drivers, avoiding too much focus on VBM-calculations. The cases also show that VBM is not a style by itself, but comprises different tools to make it a system. In the case of Akzo Nobel, this is clearly illustrated by enhancing an entrepreneurial spirit. Employees are held accountable for the activities they control (e.g., using the Balanced Scorecard), they are encouraged to look forward by means of using rolling forecasts, and they are rewarded for achieving targets, all based on the drivers behind EVA as common nominator (using a value tree). Heijmans, on the other hand, still holds a strategic focus on traditional measures like turnover and profit, not holding people accountable for EVA. Focus is on working capital, as most important driver, but other drivers are basically neglected. Higher management admits that EVA never really gained foothold in the organization. For that reason, VBM can be considered to have failed. Schiphol, eventually, is with its revitalization of VBM back on track of making its management control

system ‘compatible’ with VBM, rather than manage for value without adapting the organization and control system, thus making the two ‘not compatible.’

These cases provide some characteristics of how companies differ in implementing and applying VBM, and how they (failed to) adapt their management control system. Future research could be aimed at a more extensive sample of companies that manage for value, in order to confirm the findings from this study, since observations from three cases can by no means be generalized. Besides, another interesting subject to extend research to is how the entire supply chain can be involved in creating value on a larger scale, since current research is restricted to ‘within-firm’ capital-awareness and profit and loss account/balance sheet improvements.

NOTES

1. A ‘value tree’ is a system to depict the variables of economic profit into new variables that have impact on the former variable. It is comparable with the ‘Dupont chart’ for ROI. This way the variables can be broken down to the lowest level in the organization and can include both financial and non-financial variables. Rappaport (1998) speaks about ‘macro’ and ‘micro’ value drivers for referring to generic and operational value drivers.

2. AirportCity is a registered trademark by Schiphol Group.

3. Until today, the Dutch government still has not decided about a date for the privatization.

4. Heijmans won several awards for the strength of its investor relations policy, including the Sijthoff Award for its annual reports for 1996 and 2001. In 2003 Heijmans was awarded the Rematch Investor Relations Award in the AMX-stocks (Midkap) category.

5. The Diamond is, as of January 1, 2005, renamed to Balanced Scorecard.

6. Adapted in the sense that three separate Diamonds are aggregated to a single one, for comparative purposes.

7. However, a reduction in working capital is for a Group like Pharma hard to accomplish. The EVA coordinator told: ‘First, this group is still very sales oriented, meaning that they accept high inventories to fulfill orders. Second, the cost of capital is too low compared to their returns. Their after-tax return is about 25%. Compared to a WACC of 9% this is very high, and as such the WACC provides less incentives to save on working capital than the fear of losing sales from out-of-stock situation, even though both drivers could be perfectly combined. Third, which is probably most evident, is that this industry is highly regulated. They cannot easily change their working environment, since everything (like e.g., the general manufacturing processes and general purchasing processes) is subject to strict guidelines. New production facilities/equipment and workflows are scrutinized by the US Food and Drug Administration (FDA), and for that reason it gives less opportunities to bring down inventories or working capital in general.’

8. The strategic value is a verbal essay that explains what the acquisition adds to the activity portfolio of a division.

9. See previous section on ‘Value-based Management and the Management Control System.’

10. For example, Pharma is subject to requirements of the US Food and Drug Administration regarding production of pharmaceuticals.

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APPENDIX 1. REASONS FOR IMPLEMENTING VALUE-BASED MANAGEMENT

Akzo Nobel	<ul style="list-style-type: none"> • Pressure from capital markets • Encourage entrepreneurial behavior • Lagging share price compared to index
Heijmans	<ul style="list-style-type: none"> • Communication with stock market • Attention for working capital • Pressure from capital markets
Schiphol	<ul style="list-style-type: none"> • Decentralization and target setting • Privatization and consequent attention for shareholders' return • Desire for a single management system • Legal requirements by Dutch Competition Authority

APPENDIX 2. IMPLEMENTATION OF VALUE-BASED MANAGEMENT

Company (Year of Effective Implementation; Metric)	Characteristics
Akzo Nobel (2000; EVA – corporate WACC, about 4 adjustments)	<ul style="list-style-type: none"> • 1998: attention for capital • Jan 1, 2000: half-year pilot in one BU at each of three Groups • Jan 1, 2001: EVA up and running in all BUs • Training: 700–800 top managers • Objectives: change in mindset, create awareness for WACC, explain techniques (only financial management) • Initially: lack of communication between BUs as result of high level of autonomy • Due course 2001: introduction EVA coordinator • Supported by: Brochures, Intranet, EVA drivers game, value-seminars • Link with remuneration (initially senior management, as of 2003 all Dutch employees) • Focus: not EVA, but value drivers • ‘EVA-award’ for employee with most appealing EVA idea
Heijmans (1997; EVA – initially WACC per division, later corporate WACC, about 3 adjustments)	<ul style="list-style-type: none"> • Many acquisitions in 1996 – attention for capital • Company-wide implementation in 1997 • High level of decentralization; rolling out EVA to lower levels divisions’ responsibility • Initially specific training higher management; as of 2000 incorporated in various training programs • ‘EVA not an aim, but a means’ – mindset instead of calculation • No company-wide ERP system to calculate EVA, to avoid impression that holding is ‘owner’ of EVA; nevertheless EVA seen as calculus-exercise

APPENDIX 2. (Continued)

Company (Year of Effective Implementation; Metric)	Characteristics
	<ul style="list-style-type: none"> • Corporate EVA definition, but divisions apply own definitions; no EVA below division-level • No link with remuneration
Schiphol (1999; RONA/EP – initially WACC per business area, later corporate WACC, 2005: BA-specific WACC for internal purposes, no adjustments)	<ul style="list-style-type: none"> • Preliminary project to look into VBM concluded in 1998 • Workshops with BU management to trace value drivers and develop value tree (with external consultants) • Company-wide implementation in 1999 • VBM as business tool rather than ‘a calculation’ • No formal training, except for management game (only for management) • VBM used in holistic way • As of 2000 attention for VBM drifted away due to complex organizational structure – EP only used by corporate controllers • In 2003 revitalization RONA/EP as result of BPR to bridge gap between BA and BU and renewed discussion about IPO^a • Remuneration based on VBM-targets for Board of Management and BU management • No supportive materials provided; only discussed during courses (2005), sessions, management presentations, and ‘conversations with the Board of Management’ in case of lower management.

^aOn July 2, 2004, the Dutch government decided to sell a minority stake in the Schiphol group at a financially opportune time as long as public interest is adequately protected.

APPENDIX 3. ADAPTED DIAMOND FOR SCHIPHOL GROUP

Diamonds Group, BA and BU level	Schiphol Group	Business Area Consumers	Business Unit Passengers
<i>Financial</i>			
	Revenues	Primary revenues	
	Expenses	Revenues	Revenues
	EBITDA	Expenses	Expenses
	Operating result	EBITDA	
	Net result	Operating result	Operating result
	Average Fixed Assets	Average Fixed Assets	Average Fixed Assets
	RONA after tax	RONA after tax	RONA after tax
	WACC	WACC	
	Economic Profit	Economic Profit	
	Shareholders' equity		
	Total Assets		
	Development revenues (%)	Development revenues (%)	
	Development expenses (%)	Development expenses (%)	
(STB = Security duties civil aviation)	Development revenues excl. STB		
	Development expenses excl. STB		
	Interest Coverage Ratio		
	ROE		
	Leverage Book Value		
	Change in Working Capital		Change in Working Capital
	Cash Flow from Operations		
	Cash Flow from Investments	Cash flow from Investments	CF from Inv. Tangible Fixed Assets
(WLU = Workload unit)	Costs per WLU BA Aviation		
	Costs per WLU BA Aviation excl. STB		
(SBF = See Buy Fly)	Concession SBF per IDP	Concession SBF per IDP	
(IDP = Int'l Departing Passenger)		Parking per OD PAX	
(A/R = Accounts Receivable)			Average A/R days outstanding
			% accounts receivable > 60 days
			% accounts payable > 60 days

APPENDIX 3. (*Continued*)

Diamonds Group, BA and BU level	Schiphol Group	Business Area Consumers	Business Unit Passengers
<i>Quality</i>			
	Passengers (including transfer)	Passengers (including transfer)	Capacity leases
(OD = Origin Destination)	Departing OD passengers	Departing OD passengers	Availability flow installations terminal
	Departing Transfer passengers	Departing Transfer passengers	Flowspace Schengen
	Airplane movements		Flowspace Non-Schengen
(MTOW = Max Take-off Weight) (pax = passengers)	Average MTOW Cargo Mainport destination pax Mainport destination cargo Market share passengers Euro Top 5 Market share cargo Euro Top 5 Arrivals punctuality Departures punctuality		
(IR = Irregularity Rate) (CISS = Central Info Syst Schiphol)	Bagage IR rate Availability CISS		Bagage IR rate Oper. Availability bagage Central
	Satisfaction PAX airlines & handlers		Oper. Avail. bagage Mainlines D-pier
	Satisfaction arriving passengers	Satisfaction arriving passengers	Satisfaction arriving passengers
	Satisfaction departing passengers	Satisfaction departing passengers	Satisfaction departing passengers
	Price/Quality ratio SBF	Price/Quality ratio SBF	
	Buying penetration SBF	Buying penetration SBF	
		Shopping space per IDP	
		Price/Quality hotel/catering	
		Satisfaction # facilities waiting	
	Price/Quality parking	Price/Quality parking	
	Max. capacity utilization short parking	Max. capacity utilization short parking	
	Max. capacity utilization long parking	Max. capacity utilization long parking	

APPENDIX 3. (Continued)

Diamonds Group, BA and BU level	Schiphol Group	Business Area Consumers	Business Unit Passengers
(SRE = Schiphol Real Estate)	Customer satisfaction lessees SRE		
(VVO = floor area for rent)	SRE occupancy rate total SRE VVO total		Clientcontact CCC in time
(NS = Dutch Railways)			Pass. satisf'n waiting time filter NS-S
(S = Schiphol)			Pass. satisf'n waiting time filter S-NS
<i>Sustainability & Innovation</i>			
(Lden = Level day-evening-night)	Critical enforcement issues Lden		
(Lnight = Level night)	Critical enforcement issues Lnight		
	Personal safety perception		Personal safety perception
	Development new products	Development new products	Development new products
<i>Employees & Organization</i>			
	FTEs location Schiphol		FTEs
	Salaries and social security charges		Salaries and social security charges
	Outsourcing + ext. charges + consulting		Outsourcing + ext. charges + consulting
	Employee satisfaction		Employee satisfaction
	Annual evaluations		Annual evaluations
	Individual Development Plan (IOP)		Individual Development Plan (IOP)
	Absenteeism through illness		Absenteeism through illness

Note: NB with the restructuring of 2005, i.e., abandoning business units, BU indicators are included on BA level.

APPENDIX 4. CHARACTERISTICS OF VALUE-BASED MANAGEMENT AND MANAGEMENT CONTROL SYSTEM

Akzo Nobel	<ul style="list-style-type: none"> • Targets in EVA growth • BU apply quarterly rolling forecasts, 3 quarters ahead + 3-year strategic plan in October • Reporting focused on EVA, but supplemented with other ratios • Active management of product portfolio – if necessary divesting • Accountability and controllability to low levels • Investment proposals above EUR 80.000 subject to ‘Project EVAuator tool’ – positive EVA required, unless HSE^a is involved • Both financial and non-financial performance indicators • Increasing use of ‘Consignment Stocks’ • International definitions of EVA-related terms • Better detailed financial overviews to trace back amounts • Allocation keys for indirect costs straightforward, but good insight into cost management
Heijmans	<ul style="list-style-type: none"> • Turnover and profit two key financial indicators • Management and employees not held accountable for EVA • No link between EVA and remuneration • Control focused on ‘working capital’ (components) instead of ‘EVA’ • Divisions full autonomy in applying instruments like BSC for executing strategy
Schiphol	<ul style="list-style-type: none"> • Diamond – including financial and non-financial measures on four perspectives • Indicators and control related to responsibility, accountability, and controllability • Financial indicators top-down, operational indicators bottom-up • Quarterly forecasting, 1-year operational plan in Fall, 5-year business plan (including investments) in Spring • BU RONA responsible, but P/L driven, budgets based on cost control • Until 2005 external and internal control not aligned due to difference between BA (reported in annual report) and BU (internal organization, based on processes) • As of 2005: BAs run by management, BUs abandoned • High number of internal and external interests to meet, as result of organizational social responsibility, makes control complex

^aHSE: Health, Safety and Environment.

APPENDIX 5. EFFECTS OF VALUE-BASED MANAGEMENT

Akzo Nobel	<ul style="list-style-type: none">• Consistent focus and common language• More attention to working capital• Employees more entrepreneurial• Capital consciousness and mindset changed• Working capital reduced – not always equally easy as result of Group-industry's characteristics• Allocation of resources beneficially for better EVA performers• Higher awareness Balance sheet, investment proposals harder accepted• Production and Site rationalization common practice, although depending on Group's activities• Pilot started in few BUs to introduce ABC in conjunction with EVA
Heijmans	<ul style="list-style-type: none">• Investment proposals based on DCF, EPS and Payback period; not EVA• Frequent discussions on technical aspects EVA, instead of EVA targets and manage drivers• Changing focus from Profit to Capital took longer than expected• People take more initiatives and act more proactively• Operational management considers EVA to be too complicated, resulting in gradually declining enthusiasm• Despite attention EVA in annual reports, it never gained foothold in managing• 2005: New CEO set strategic targets in terms of net profit margin and ROI• Operational measures are included in control of divisions; divisions are managed more tightly and uniform by responsible member of Managing Board• Implementation of IFRS distracted attention from EVA
Schiphol	<ul style="list-style-type: none">• Discussions about investments in business planning and budgeting more profound• Cultural change (from public body to private company) took time, but organization is becoming more businesslike and professional in attitude• Decisions are not always made in full compliance with VBM principles• Acquisitions of airports have been rejected as a result of VBM principles (RONA)• VBM provides management with a complete management system, compared to fragmental previously• Costs became more transparent and comparable between BUs• Greater awareness of how activities and decisions have impact on RONA/EP in order to focus attention

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**PART IV:
ROLE OF PERFORMANCE
MEASUREMENT IN IMPROVING
ORGANIZATIONAL
PERFORMANCE II**

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THE CONTEMPORARY PERFORMANCE MEASUREMENT TECHNIQUES IN EGYPT: A CONTINGENCY APPROACH

Amr E. A. Youssef, Rob Dixon and
Mohamed A. Ragheb

ABSTRACT

This paper examines the role contingent factors play in the effectiveness and use of performance measurement techniques in Egypt. Egypt is selected as an example of a developing country and an emerging market. Little research has been carried out on this area in a developing country in general, and Egypt in particular. This article reviews key literature on contingency theory and work in the area of performance measurement techniques. The paper provides evidence that performance measurement techniques are not an imposition of the headquarters, but the result of the interest and consensus achieved within the organisation due to the contingent variables that affect its use and stem from the environment.

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1. INTRODUCTION

Performance measurement (PM) techniques historically developed as a means of monitoring and maintaining organisational control (Nanni, Dixon, & Vollmann, 1990), which is the process of ensuring that an organisation pursues strategies that lead to the achievement of overall goals and objectives. Wilson and Chua (1993) argue that an evaluation of performance, whether *ex ante* (as in feedforward control) or *ex post* (as in feedback control), is central to the issue of organisational control. Traditional models of PM largely evolved within the large industrial firms of the 1920s (Johnson & Kaplan, 1987), focusing on the achievement of a limited number of key financial measures (for example, earnings per share (EPS), and return on investment (ROI)). However, more recently, evidence from a selection of research disciplines including Management Accounting, Operations Management and Strategy has highlighted increasing dissatisfaction with traditional forms of PM (Govindarajan & Gupta, 1985; Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991; Lynch & Cross, 1991; Brignall, Fitzgerald, Johnston, Silvestro & Voss, 1992; Eccles & Pyburn, 1992; Govindarajan & Shank, 1992; Kaplan & Norton, 1992; Nanni, Dixon, & Vollmann, 1992; Shank & Govindarajan, 1992; Euske, Lebas, & McNair, 1993; Gregory, 1993; Neely, 1995).

Turney and Anderson (1989) argue that the financial measures have largely failed to adapt to the new competitive environment where continuous improvement in the design, manufacturing and marketing of a product/service is key to success. Additionally, Emmanuel and Otley (1985) stated that organisational success depends not only on the achievement of financial measures, but also on how well the organisation adapts to the environment within which it exists. Effective performance can be achieved if the organisation responds and adapts to its environmental demands appropriately. This appropriate response is crystallised in a 'fit' between structural characteristics and contextual and other environmental variables, which is supported by the contingency theory (Lawrence & Lorsch, 1967).

This study attempts to explore, understand and describe the contingent variables that affect the effectiveness and use of performance measurement techniques in the Egyptian organisations. The paper is organised as follows: The subsequent section discusses the contingency theory as the theoretical framework. Then, the second section reviews the performance measurement literature. The third section focuses on Egypt as an example of a developing country. The fourth section examines the methodology and discusses the analysis. Finally, the conclusion and results are summarised.

2. CONTINGENCY THEORY

2.1. Contingency Theory Background

Otley (1980) stated that during the 1960s organisation theory underwent a major upheaval, which led to the construction of a thorough-going contingency theory. He also argued that this initially stemmed from the pioneering work of Burns and Stalker (1961) and was reinforced by the work of Woodward (1965). This was also shaped by the work of corporate strategists, such as Chandler (1962), which emphasised the relationship between the strategy an organisation selected in order to achieve its goals and the organisational structure that was most appropriate for it to adopt. Covaleski and Dirsmith (1996) stated that these studies suggested that organisations' structures are contingent upon contextual factors. For example, dimensions of task environment (Burns & Stalker, 1961); technology (Woodward, 1965) and organisational size (Pugh et al., 1969; Blau, 1970). These contextual factors were hypothesised to influence dimensions of structure including the degree of formalization, specialisation, differentiation and bureaucratization. Discussions about management control and performance measurement were sometimes elicited to explain some of the observed relationships among structural properties, but were not of a central importance (see for example, Woodward, 1965; Aiken & Hage, 1966; Hickson, 1966; Hage & Aiken, 1967; Pugh, Hickson, Hinings, & Turner, 1968; Child, 1972; Blau, 1970, 1973).

Miller and O'Leary (1989) supported the assertion of many researchers (for example, Barnard, 1938; Simon, 1957; March & Simon, 1958; Cyert & March, 1963; March & Olsen, 1976) that the human relations perspective brought forth through contingency theory was the depiction of corporations existing in a tentative equilibrium which is inherently fragile, short lived and ever subject to personal, social, physical and biological destructive forces. They argued that it was axiomatic for the human relations perspective that all organisations are founded on self-interest and a contractual principle; this is the core reason that they are so fragile. In turn, contingency theory blended the insights on human behaviour and individual decision-making with the sociological functionalist concerns regarding the impact of such structural factors as environment, size, technology, etc., on organisational behaviour. Important in this lineage of work were issues of organisational control and coordination, which are germane to managerial accounting research.

By the early 1970s, contingency theory was firmly established as the dominant approach in organisation theory (Child, 1977). It was perhaps

influenced by the stream of work that emanated from the Aston School, which is summarised in the series edited by Pugh et al. (Pugh & Hickson, 1976; Pugh & Hinings, 1976; Pugh & Payne, 1977). Although, it subsequently became subject to increasing criticism (e.g. Wood, 1979). Otley (1980) argued that in the late 1960s and early 1970s accounting academics realised that the organisational context of an accounting system was of fundamental importance to its effectiveness. The field of accounting was tentatively developing contingency ideas and realising the importance of organisation structure.

Child (1974) and Luthans and Stewart (1977) stated that the contingency approach is situated between two extremes; the universal approach and the situation-specific approach. But according to contingency theory, the appropriateness of different control systems depends on the setting of the business. However, in contrast to the situation-specific model, control system generalisations can be made for major classes of business settings. Luthans and Stewart (1977) proposed that there is a need for a situational perspective to solve this problem, and that this situational approach argues that the most effective management concept or technique depends on the set of circumstances at a particular point in time. They also proposed that a contingency approach seems best able to accomplish this goal. The contingency approach is generically situational in orientation, but much more exacting and rigorous than both traditional approaches.

In the same vein, Clegg and Hardy (1999) argued that contingency theory began as a synthesis between the universalistic but opposed ideas of the classical management and the human relations schools. In its development it helped establish, and strongly pushed, the open systems approach of management. Closed systems approach was based on the idea that the environment is primarily an enemy or a source of pressures and problems for the organisation (Selznick, 1949). Contingency theory is aligned with the main themes of open systems approach, which depends on the importance of the organisation–environment relationship (Otley, 1984; Otley, Berry, & Broadbent, 1995). Donaldson (1996) and Alum (1997) point out contingency theory sees organisational effectiveness as dependant on the correctness of fit within the context in which the organisation works and the management form adopted. And the form of organisation that will be most efficient is contingent upon conditions relevant to the situation. Contingency theory offers specific advice as to which management form to adopt in relation to a range of contextual variables.

On the other hand, a number of cogent criticisms have been levelled at contingency theory, such as Gresov (1989), Fisher and Govindarajan (1993)

and Fisher (1998) who argued that a company might design a control system to be consistent with one (dominant) contingency factor and ignore the others. However, ignoring a contingency factor may result in lower business unit performance. Also, they have noted that when several contingency factors are entered simultaneously into the analysis, the demands placed on the control system may conflict. Designing the control system to simultaneously address several contingencies involves trade-offs that preclude a 'fit' to all contingencies. If all contingent factors demanded the same type of control for optimality, then designing the control system would be straightforward. Conflicting contingencies result in demands that are not consistent. The presence of conflicting contingencies implies that the control system design will deviate from the demands of at least one contingency, making optimal control difficult. The conflicting contingency framework recognises that some misfit, or design deviation, may occur as a functional response to multiple contingencies. Although, this given criticism amongst others, the argument of contingency theory that there is a best fit for each organisation depending on the contingent factors would seem to have sufficient validity and applicability to form the basis of giving clear guidance to reach the suitable performance measurement technique.

2.2. Researching Contingent Variables

In applying contingency theories to control systems design, researchers have articulated more subtle relationships and sought to uncover direct relationships between these contextual factors, organisations' accounting and information systems, structural characteristics and control system design. In this study, a number of key contingent variables, which have been derived from a wide range of research on contingency theory, are tested. The contingent variables addressed are organisational strategies, organisational structure, competition, technology, management style, reward systems and environmental uncertainty. These variables were chosen for their importance, which was highlighted in a wide range of contingency theory and management accounting literature.

Covaleski and Dirsmith (1996) stated that contingency theory is a theoretical perspective of organisational behaviour that emphasises how contingent factors, such as technology, structure and environment affected the design and use of management practices in organisations. Thompson (1967) attempted to link task environment and technological contingencies to various management practices, focusing particularly on the different mechanisms of coordination that were appropriate for more complex,

dynamic technologies and task environmental conditions. Perrow (1967) focused on the congruence between different types of technologies and management practices, emphasising that more flexible, loosely structured arrangements were more appropriate for organisations with non-routine technologies, while just the opposite type of organisational arrangements were more likely to fit routine technologies. Therefore, technology has also been introduced as a major explanatory variable of an effective accounting information system (e.g. Woodward, 1965; Perrow, 1967; Thompson, 1967; Child, 1975; Fisher, 1994). Hoskisson, Hitt, and Ireland (1990) defined firm structure as the arrangement of workflow, authority and communication relationships within a firm, and it has been dichotomized into several forms that, indeed, would affect all organisation's functions including control, which is the cornerstone of performance measurement techniques.

The accounting information system could be designed to cope with environmental uncertainty by incorporating more non-financial data, increasing reporting frequency and tailoring systems to local needs. Many researches focused on the design of formal control systems in complex organisations, being concerned with the question of appropriate contingency principles underlying the design of such systems (Khandwalla, 1972; Gordon & Miller, 1976; Ansari, 1977; Waterhouse & Tiessen, 1978; Macintosh, 1981; Daft & Macintosh, 1981; Dent, 1987; Covaleski & Dirsmith, 1996). Management and decision-making style has been examined in the control literature (Waterhouse & Tiessen, 1978; Rayburn & Rayburn, 1991). Joynt (1977) argued that there is no one best solution to the administrative and organisational issues managers face. Rather, questions of managerial behaviour and organisational design must be considered in the light of total environment.

Finally, Covin and Slevin (1994) stated that the concept of fit recognises that organisations are systems, and that system effectiveness is contingent upon the existence of internally consistent and mutually reinforcing elements. Since strategic mission is but one element in an organisational system, its content alone cannot guarantee organisational effectiveness. Rather, such effectiveness will result from the strategic mission being supported by other elements in the system stemmed from the previous categorisation. Complementary organisation structure, acquiring competitive advantages, supported technology, suitable management style, effective incentive and compensation system and, to somewhat, the predictability of the environmental uncertainty are examples of these elements.

3. PERFORMANCE MEASUREMENT LITERATURE

This study aims to explore the current use of performance measures in organisations in one of the developing countries, namely Egypt. In addition, it seeks to identify the variables influencing the use of performance measurement techniques in these organisations. The previous literature highlighted the contingent variables that affect the implementation and use of these performance measurement techniques. The following is a discussion on traditional and contemporary management control techniques.

3.1. Traditional Performance Measurement Techniques

One of the most established traditional techniques is ‘budgeting’. Budget systems enable management more effectively to plan, coordinate, control and evaluate the activities of the business. The control consequences are among the more important aspects of budgeting. Because a budget plan exists, decisions need relevant information to be provided to enable the decision-maker at the time he/she must choose between alternatives. Another control type, which can be derived from budgets, is the comparison of actual with budgeted performance that reveals to management the performance of the organisation as a whole and of the individual responsible members (Irvine, 1970). Therefore, budgets have long been advocated for carrying out a variety of functions for the firm: planning, evaluating performance, coordinating activities, implementing plans, communicating, motivating and authorizing actions. It was observed that by evaluating performance – through other management control systems – against a budget, managers could be shielded from some of the effects of random, non-controllable factors (Kaplan, 1982).

Despite these advantages, the problem remains of how to establish budgets that can both facilitate the planning process (including coordinating the activities of diverse but interacting organisational units), and permit a realistic appraisal of managerial performance (Kaplan, 1982). Binnarsley (1996) stated that budgets may have worked for the industrial era but are out of step as worldwide events have a more dynamic impact on companies, as product life – cycles have shortened, and as a high level of skills and competencies are required by companies. The business paradigm has changed with the increasing trend towards ‘*beyond budgeting*’, which fits with all types of businesses, such as manufacturing, service and non-profit organisations, that rely on relationships with customers, suppliers and employees, organised as processes rather than functions.

Bunce, Fraser, and Woodcock (1995) point out that the new feature of today's environment is turmoil. In contrast, traditional management tools were devised for relatively stable environments dominated by producers. Hopwood (1974) investigated the state of budget use depending on the environment. He points out that budgets, which are easy to formulate in stable and predictable environments, would be very useful in unstable environments in which there is a strong need for control. However, the more useful budgets are, the more difficult they are to formulate and so the less reliable and relevant they may become.

3.2. Contemporary Performance Measurement Techniques

Brignall and Ballantine (1996) argued that much of the criticism of traditional PM techniques stems from their failure to measure and monitor multiple dimensions of performance, by concentrating almost exclusively on financial measures. This concentration reflects the traditional emphasis in the accounting and finance literature on the needs of shareholders, but there are many other stakeholders, both internal and external to the firm, whose needs should also be reflected in the PM technique. Eccles and Pyburn (1992) argue that one of the major limitations of using financial measures of performance (such as EPS and ROI) is that they are 'lagged indicators' that are 'the result of management action and organisational performance, and not the cause of it' (p. 41). In response to the dissatisfaction with traditional PM techniques, a number of PM models have been developed in the last few years. Among the most widely cited are the balanced scorecard (Kaplan & Norton, 1992); the performance pyramid (Lynch & Cross, 1991); integrated performance measurement (Nanni et al., 1992); and performance measurement in service businesses (Fitzgerald et al., 1991).

Otley (2003) argued that, in the last decade, there were changes in the context within which organisations operate. First, there has been a major change in the philosophy of organisational structure. Whereas in the 1960s and 1970s, the route to organisational control was seen to be in vertical integration and divisionalisation, in the 1990s this reversed into outsourcing, business process re-engineering and value chain management. Thus the control problem, which was initially seen as a primarily an internal matter, has been transformed into having to deal with the connections between enterprises linked in a business process or value chain. In such a context, the central role of budgeting as a financial control technique has declined, along

with the use of management accounting information as the major tool for internal control.

The Balanced Scorecard approach developed by Kaplan and Norton (1992, 1996), which explicitly adopts a multi-dimensional framework. It has been explicitly devised to allow a more structured approach to performance management and to avoid some of the problems associated with more traditional control methods, such as budgeting (Otley, 1999). The Balanced Scorecard combines financial and non-financial measures which can be grouped into four main perspectives: a financial perspective, customer perspective, internal business perspective, and innovation and learning perspective. Therefore, it is argued that the Balanced Scorecard links measurements with strategy. The Balanced Scorecard stresses the linkages for achieving better performance, rather than concentrating on isolated measures. It provides managers with a sense of interdependency among different organisational areas. Moreover, the BSC avoids information overload by helping organisations concentrate on a limited number of critical measures. Finally, it is flexible enough to fit each organisation and to accommodate a number of adjustments (Kaplan & Norton, 1996; Atkinson et al., 1997; Venkatraman & Gering, 2000).

On the other hand, Venkatraman and Gering (2000) argued that the Balanced Scorecard has not been an unmitigated success. Despite its popularity there have been as many unsuccessful implementations as successful ones. These include cases where a particular measure produces pathological activity where the measures cover everything and nothing, and where the measures were accepted but never implemented or simply never caught on. In such cases, the implementation stalls as managers debate and argue about seemingly straightforward measures, such as productivity, utilisation and customer service indicators. Kaplan and Norton (1996) stated that the Balanced Scorecard's main limitation is because it is essentially a conceptual model, and can hardly be considered a measurement model since it does not identify clearly which are the variables, how they can be measured and how they relate to each other.

In summary, the use and effectiveness of the BSC measures appear to be affected by many contingent variables. For example, organisational strategies and structural and environmental factors confronting the organisation (Ittner & Larcker, 1998); the type of organisation and organisational size (Hoque & James, 2000; Joshi, 2001); and business-level strategy, firm size and environmental uncertainty (Chenhall, 2003). Therefore, the evidence revealed is that these contingent factors are of criticality to the use of the Balanced Scorecard.

4. EGYPT: THE CONTEXT OF THE STUDY

4.1. Introduction

Egypt as one of the developing countries has gone through many economic phases. Since the mid-1950s and up to the mid-1970s, the public sector in Egypt had played the major role in all major sectors of the Egyptian economy such as banking, textile industry and insurance services etc. At the same time, government had placed restrictions on the private sector to the extent that opportunities for any private business were negligible especially in manufacturing (Hatem, 1994). During this stage of development, Ikram (1980) stated that reliance on central planning by the government had increased, as the only determinant of national economic policy. The government and the state-owned enterprises accounted for approximately 74% of gross investment; therefore, they became the biggest employers in the nation and acted as the main vehicle for growth.

In the 1970s, and specifically in 1974, Egypt introduced the 'open door' policy as a new economic measure. This aimed to liberalise the economic regime of the country, reactivate the private sector (both Egyptian and foreign), by eliminating the obstacles facing this sector, encourage growth with the incentive of competition; to encourage trade with the west and to promote western investment in Egypt, and to increase the productive activities, such as the production of goods (Hatem, 1994; DTI – Egypt Desk, 1996). In the 1980s, the Egyptian economy experienced sluggish growth, due to increasing unemployment (about 14%) and inflation, and foreign exchange shortages. All these problems were compounded during the Gulf war due to the return of migrant labor and to a decrease in foreign earnings and revenues from tourism and the Suez Canal (Tessler et al., 1991; Hatem, 1994). The changes in the economic and investment policies in Egypt, international joint venture firms and multinational and private companies started to receive more attention (Hatem, 1994).

The most important phase was in the 1990s, which included issuing several economic reforms, such as privatisation. These structural reforms and an IMF stabilisation programme along with the collaboration with the World Bank helped Egypt to improve its macroeconomic performance gradually over the period. The government was able to tame inflation, decrease budget deficits and attract more foreign investment (HSBC, 2003). This privatisation increased the importance of the function of production management. There are some contradictory studies concerning the benefits of privatisation in Egypt. Abdel Fatah (1997) and ElHemidy (2001) supported privatisation by

stating that developing countries applied it in their economy in order to be released from public debt and to improve their economic and financial structure. On contrary, there were some studies that proved some negative or no effect of privatisation on the performance of privatised companies such as [Ismail \(2003\)](#). This study was undertaken on a sample of 54 companies of the privatised companies listed in the stock market. The study indicated that no evidence had been reached of performance improvement.

At a national level, Egypt faces increasing regional and international competition, especially with the implementation of World Trade Organisation agreement (WTO). While at the operational level, most manufacturing companies suffer from excessive inventory resulting from not making the right things at the right time. In response, manufacturing companies discovered that they should make their processes more efficient and effective. Therefore, many manufacturing companies in Egypt have revised, are revising, or are considering the revision of their management control systems ([Salaheldin & Francis, 1998](#)).

4.2. Performance Measurement's Literature in Egypt

[ElDahrawy \(1997\)](#) stated that financial statement's figures no longer reflect the economic state in the society accurately and precisely, especially with the existence of a large number of accounting techniques and environmental uncertainty. Therefore, there was an emerging and increasing need for new performance measures that help overcome these difficulties.

[ElSawafiry's \(2003\)](#) study on service organisations in Egypt found a new trend, which developed performance measurement techniques by taking into consideration long-term planning affecting organisational hierarchy. He concluded that there are many factors that affect the design and the use of any performance measurement techniques. Hence, he stated that the number of measures included in the Balanced Scorecard should depend on the environment in which the organisation works. Therefore, the performance measures should not only be financial, customers, internal process and innovation measures but also could add other measures such as environmental measures. This depends on many factors such as the organisational activity, surrounding environment in which the organisation works, strategies, organisational structure and management style.

Also, [ElKholy's \(1997\)](#) study concluded that there is a trend in most of the manufacturing organisations in Egypt to use a combination of both financial and non-financial measures and that relying on the financial measures separately is no longer effective for any organisation. Elkholy added that any

organisation could classify and group its performance measures into major categories according to the relative weight of each measure in order to determine the optimal combination of measures to be adopted by this organisation.

In the same vein, *Arabi (1997)* stated that the importance of non-financial measures is very critical in measuring performance because they determine other dimensions that financial measures cannot determine such as quality improvement and customer satisfaction of a company's products. *Arabi (1997)* in his study on one of the largest manufacturing companies in Egypt, namely, Alexandria National Iron and Steel Company, found that they use some non-financial measures in their performance measurement techniques in order to assure the overall quality, which represents a long-term manufacturing strategy in the company.

On the contrary, *ElSayed (1999)*, in his study of 64 companies from different industries, stated that although the Egyptian organisations have started applying advanced technology, but this application is still limited, in addition, the business environment in Egypt did not benefit from other successful applications appropriately. His study concluded that although the relatively new manufacturing methods (such as TQM and JIT) aim at improving the competitive advantages of any organisation and encourage flexibility but a high percentage of the Egyptian organisations did not benefit from them. The study found that most of the Egyptian organisations are still using traditional financial measures in performance measurement techniques, such as return on investment (ROI), net income (NI) and return on assets (ROA) among others. While there is a delay in using other non-financial measures such as quality and customer satisfaction. Therefore, he recommended that the Egyptian organisations should study other countries' experiments (whether developed or developing countries) in order to maintain and enhance performance.

5. RESEARCH METHODOLOGY

An unresolved issue in developing a model of contingent control is to understand how the contingent factors are determined and evolve over time. Certain contingent factors may be determined by management decision while others may be determined exogenously. At some point in time, the organisation selects the markets in which it competes and the strategy in those markets, and thus initially controls all contingent factors. However, after certain strategic and product line decisions, many contingent factors are no longer under the direct control of the organisation. Therefore,

contingent factor determination may be an iterative process. Some of the factors are selected by the firm, whereas others are the result of prior decisions and external factors (Fisher, 1998).

5.1. Research Methods

A survey instrument was used to collect specific information about the two research questions; namely, what are the types of performance measures used by Egyptian companies? And, what are the contingent variables that might affect the use of these performance measures of the respondent firms? The survey instrument was evaluated in a limited pretest by several business professors and managers from some firms for readability, completeness and clarity. Appropriate changes were made as per their comments and suggestions. The design of the questionnaire is complicated with translation problems, whether from and to different languages or between incongruous usages in the same language. The researcher has to observe lexical equivalence (asking the same questions in different ways, using the same words) and conceptual equivalence (the transfer of concepts from one culture to another). The latter requires a high degree of understanding and knowledge of the local culture (Bulmer & Warwick, 1983; Hatem, 1994). The survey was sent to executives representing around 100 of the Egyptian firms of different industries. Data from 34 survey responses were collected and analysed to determine whether the implementation of specific performance measures is linked to some specific contingent factors. Correlation and regression analyses were used on these Likert-scaled questions to test the research questions.

The sample for this study contains 34 medium- to large-size Egyptian organisations. The sampling procedure excluded foreign firms; it focuses only on the Egyptian organisations working in Egypt in order to reduce any multinational factor(s) and to control for the *culture* factor. This sampling procedure was intended to capture a variety of different sectors' firms. Cronbach's alpha is used as the coefficient of reliability for testing the internal consistency of the constructs. The alpha coefficients for all of the constructs in the questionnaire are in excess of 0.7. Overall, these tests supported the validity of the measures used in this study. The reliability coefficient (alpha) for this research is 0.9309, which is high for a social research.

5.2. Research Variables

The dependent variables, in this research, are framed in five models, which represent the most common types of performance measures, namely the

financial measures (finmsave); the customer measures (cusmsave); the learning and innovation measures (innmsave); the internal measures (intmsave) and the environmental measures (envmsave). Also, we have created five dummy variables to represent the use of each measure in different organisations that takes the value of one if the average is greater than three and zero otherwise. There are seven independent variables selected in this study, which are derived from the broader literature on performance measurement systems that indicate that these variables are associated with variation in the design and use of these systems across companies, to identify their probable effect on the use of the aforementioned performance measures in the Egyptian firms. These variables are strategy (stratave); structure (strucave); competition (compave); technology (techave); management style (mgtstave); reward systems (rewsyave) and environmental uncertainty (envunave).

5.3. Empirical Analysis

Two different statistical methods are used: descriptive analysis and association analysis, such as correlation and regression analyses. Given the exploratory nature of the study, a regression specification puts very high structure on the five performance models created and directly tests the impact of the variables of interest. However, the performance measurement literature offers enough guidance to relate certain aspects to a specific performance measurement model and thus the regression analysis is more informative than any other statistical analyses. Together, both analyses provide robust evidence about the arguments developed earlier. Therefore, the regression specification better fits the exploratory nature of this study.

5.3.1. Descriptive Analysis

Table 1 shows the relative frequencies for the use of different performance measures. The percentage of firms that confirmed applying financial measures is 88.2%. Customer measures were also very popular because the percentage of firms that confirmed applying them is 75.8%. Learning and innovation measures were lower of total firms in the sample reported using such measures. This might be as a result of the high costs of acquiring new technologies and the long-lived bureaucratic system in the Egyptian environment. Internal measures such as those related to employees and their satisfaction had a high percentage of 70.6%. Environmental measures also reported a high ratio of 76.5%, which means that although these

Table 1. Frequencies of Different Performance Measures.

Use of Measures	Use of Financial Measures (%)	Use of Customer Measures (%)	Use of Learning and Innovation Measures (%)	Use of Internal Measures (%)	Use of Environmental Measures (%)	Use of Performance Measures (%)
Not used	11.8	24.2	52.9	29.4	23.5	12.1
Used	88.2	75.8	47.1	70.6	76.5	87.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 2. Descriptive Statistics for Performance Measures Constructs and Comparison of their Means.

	One-Sample <i>t</i> -test/Value = 3						
	Mean	Standard Deviation	Standard Error (Mean)	Mean Difference	<i>t</i> -value	Significance (2-tailed)	Significance (1-tailed)
Average FinMs	4.26	0.72	0.12	1.26	10.289	0.000	0.000
Average CusMs	3.63	0.82	0.14	0.63	4.446	0.000	0.000
Average InnMs	3.13	0.75	0.13	0.13	0.998	0.325	0.163
Average IntMs	3.42	0.61	0.11	0.42	4.040	0.000	0.000
Average EnvMs	3.65	0.71	0.12	0.65	5.392	0.000	0.000

measures are quite recent worldwide in general and in Egypt in specific, but there are a large number that apply it and focuses on them. Finally, the adoption of at least three types of those five types of performance measures is being measured in another new dummy variable called ‘Use of Performance Measures’, which draws attention if the company, in general, applying more than three measures of the aforementioned measures to indicate the hybrid use of performance measures.

In addition, a *t*-test has been undertaken to compare the mean value of each type of performance measures with 3, which is the cut point in the scale between the agreement and the disagreement in using these measures. As shown in Table 2, the $H_0: \mu = 3$ and the $H_1: \mu \neq 3$. The significance we are looking for is only for $\mu > 3$, which indicates the usage of these measures, therefore the significance 1-tailed is calculated. As shown in Table 2, all

types of measures are significant ($p < 0.001$), except for learning and innovation measures which proved to be insignificant (sig. = 0.163). These results are consistent with the aforementioned results that these measures are not used widely in the Egyptian environment.

5.3.2. Association and Variation Statistics

To better understand the relationship between firm's performance measures and the contingent variables selected in this study, five regression analyses are conducted. In this section, the contingent variables of this research will be tested in order to understand the relationships among these variables and the use of different performance measures. This will provide some answers to the research questions. Therefore, this section will be divided into five subsections each for one of the performance measures with different contingent variables. Statistical analyses that have been undertaken to trace the association among variables are correlation and regression. The regression models are all statistically significant (ANOVA sig. = 0.000, $p < 0.001$), with explained variances ranging from the highest ratio of 94.1% for the customer measures model to the lowest ratio of 47.3% for the financial measures model. All regression models are checked for assumptions of the least square methods, multicollinearity, autocorrelation, normality, linearity and homoscedasticity; all assumptions are satisfied. Each performance measure will be discussed separately, and then a summary of all the individual results will be followed.

5.3.2.1. The Use of Financial Measures. Regression results show that the whole model is absolutely significant (ANOVA sig. = 0.000, $p < 0.001$). But for the independent variables and their individual influence on the dependent variable, there are four of the seven independent variables are significant to the dependent variable. It is shown from the results that strategy, structure, reward systems and the environmental uncertainty are significant to the use of financial measures; but on the other hand, competition, technology and the management style are insignificant in explaining the variation in the dependent variable, namely the use of financial measures.

Correlation coefficients are shown in Table 3 and significance identifications are shown in Table 4. Strategy, structure and reward systems emerged as strong predictors of the use of financial measures variable. The use of the financial measures and strategy were positively correlated ($r = 0.606$, $p < 0.05$), also, with structure, they were positively correlated ($r = 0.633$, $p < 0.05$). In addition to the strong positive correlation with reward systems

Table 3. The Use of Performance Measures Correlations with the Selected Contingent Variables.

		Average FinMs	Average CusMs	Average IntMs	Average InnMs	Average EnvMs
Pearson correlation	Average strategy	0.606	0.749	-0.044	0.827	0.584
	Average structure	0.633	0.855	0.195	0.705	0.560
	Average competition	0.364	0.863	0.326	0.805	0.419
	Average technology	-0.250	0.827	0.198	0.850	0.415
	Average management style	-0.130	0.577	0.570	0.605	0.220
	Average reward system	0.696	0.094	0.185	0.073	0.236
	Average environmental uncertainty	0.323	-0.146	0.106	0.807	0.216

Table 4. A Summary of the Significant Independent Variables across the Five Models.

Variables	The Use of Financial Measures	The Use of Customer Measures	The Use of Internal Measures	The Use of Learning and Innovation Measures	The Use of Environmental Measures
Strategy	Sig.	Sig.	Not sig.	Sig.	Sig.
Structure	Sig.	Sig.	Sig.	Sig.	Not sig.
Competition	Not sig.	Sig.	Not sig.	Not sig.	Not sig.
Technology	Not sig.	Sig.	Sig.	Sig.	Sig.
Management style	Not sig.	Sig.	Sig.	Not sig.	Not sig.
Rewarding systems	Sig.	Not sig.	Sig.	Not sig.	Sig.
Environmental uncertainty	Sig.	Sig.	Sig.	Sig.	Sig.

($r = 0.696, p < 0.05$) and a moderate correlation with the environmental uncertainty ($r = 0.323, p < 0.05$).

Contrary to expectations, there was a negative correlation ($r = -0.250; r = -0.130$, respectively) between the use of the financial measures and technology and management style, respectively. But both of them were statistically insignificant. The negative correlation with technology is consistent with the idea that organisations that apply financial measures are highly structured, which makes them associated with routine, standardised

activities. Competition was also statistically insignificant although it was positively correlated with the use of the financial measures. These are quite similar to the results obtained by previous studies employing comparable measures (e.g. McMillan et al., 1973; Bruns & Waterhouse, 1975) with the exception of the low significance of the negative correlation between the use of the financial measures and technology.

These results support the view of Vancil (1973), which concluded that the choice of a design for assigning financial responsibility should be a function of the organisational structure, which is defined in terms of the delegation of authority and the specialisation of effort, and organisational strategy. Also, the results were consistent with Prahalad and Bettis's (1986, p. 492) results that the performance appraisal and incentive system of a firm is the source of many rewards/ punishments, therefore, it provides a link in which the reinforcement regime that can change cognition as well as behaviour.

5.3.2.2. The Use of Customer Measures. Customer measures have received great attention in present due to excess competition and high technology prevailed recently. The whole model is absolutely significant (ANOVA sig. = 0.000, $p < 0.001$). All the independent variables are significant except the reward systems variable is insignificant.

Correlation coefficients are shown in Table 3 and significance identifications are shown in Table 4. The use of customer measures correlation coefficients with the selected contingent variables shows that 'Strategy' is positively correlated to the use of customer measures and statistically significant ($r = 0.749$, $p < 0.10$). Also, 'structure and technology' are positively correlated and statistically significant ($r = 0.855$, $p < 0.001$) and ($r = 0.827$, $p < 0.001$), respectively. 'Competition and management style' are also positively correlated and statistically significant ($r = 0.863$, $p < 0.05$) and ($r = 0.577$, $p < 0.05$), respectively. The signs of correlation coefficients related to these variables are as expected. On the other hand, correlation with environmental uncertainty was found to be negatively correlated with the use of customer measures but statistically significant ($r = -0.146$, $p < 0.05$).

This finding says, in effect, that as an organisation suffers from the environmental uncertainty, managers in the sample felt that they had to have more control and very rigid performance measurement techniques. This implies that, as organisations become more independent and less centralised in terms of decision-making authority on administrative matters, in addition to work in a vulnerable environment, the accounting system is likely to be based on broader measurements, permitting managers more to secure their

positions. This evidence indicates that customer measures are very critical to the organisation to the extent of being affected by many factors, which should be taken into consideration while designing and using such measures. But it failed to prove any significant relationship with reward systems.

5.3.2.3. The Use of Internal Measures. Internal measures are concerned with the measures that affect, for example, cycle time, quality, employee skills and productivity. Companies should also attempt to identify and measure their company's core competencies; therefore, companies should decide what processes and competencies they must excel at and specify measures for each. These measures ensure that employees at lower levels in the organisation have clear targets of actions and have motivation and loyalty to the organisation that will contribute to the company's overall mission.

Correlation coefficients are shown in [Table 3](#) and significance identifications are shown in [Table 4](#). Regression results show that all independent variables are statistically significant except for strategy and competition. Structure has a moderate correlation with these measures but statistically significant ($r = 0.195, p < 0.05$). As well as technology that has almost the same influence ($r = 0.198, p < 0.05$). The most effective variables are management style and reward systems, which are positively correlated and statistically significant ($r = 0.570, p < 0.001$) and ($r = 0.185, p < 0.001$), respectively. Finally, the environmental uncertainty has also a low positive correlation but statistically significant ($r = 0.106, p < 0.05$). These relationships imply that the Egyptian organisations realise the importance of these measures and there are many factors that affect the use of these measures. Nevertheless, these firms cannot relate such measures to the main strategy of the firm, which is supported by the high ratio of individualism in the Egyptian society. Also, the insignificance level of competition means that the Egyptian firms might still be influenced by the long-lived era of public sector, which dominated the economic life in Egypt for such a long time (see for example, [Hatem, 1994](#)). Further investigation needs to be undertaken to explore this point.

5.3.2.4. The Use of Learning and Innovation Measures. Intense global competition requires that companies make continual improvements to their existing products and processes and have the ability to introduce entirely new products with expanded capabilities. A company's ability to innovate, improve and learn ties directly to the company's value. That is, only through the ability to launch new products, create more value for customers and improve operating efficiencies continually a company can penetrate new

markets and increase profits, which will increase shareholder value (Kaplan & Norton, 1992).

Correlation coefficients are shown in Table 3 and significance identifications are shown in Table 4. Regression results show that there are four independent variables statistically significant with the use of learning and innovation measures. Strategy is positively correlated and statistically significant with the use of such measures ($r = 0.827, p < 0.05$). Also, structure is positively correlated and statistically significant ($r = 0.705, p < 0.1$). As well as technology that has a very high positive correlation and statistically significant ($r = 0.850, p < 0.1$). Finally, the environmental uncertainty that proved to have positive correlation and statistic significance ($r = 0.807, p < 0.05$). On the other hand, although competition has a positive correlation but it is not statistically significant. As well as the management style and the reward systems, this could be because of the chaotic economy state, which failed to define how these measures could be correctly implemented. In addition to the lack of managers' understanding to the mechanism of how these measures might be operated. Therefore, these relationships need to have more investigations.

5.3.2.5. The Use of Environmental Measures. The importance of environmental performance measures is highlighted by the development of ISO 14031 Environmental Performance Evaluation standard guidelines. The measures summarise information on a company's environmental performance, which is then reported to decision-makers and other stakeholders. Ashford and Meima (1993) explain that the environmental performance of the firm is the extent and effectiveness of actions that the firm takes to mitigate its environmental consequences. For manufacturing firms, these measures could be the carbon dioxide emissions (kg), which could be compared to the international accepted standard figure.

Correlation coefficients are shown in Table 3 and significance identifications are shown in Table 4. There are four significant variables, which are strategy, technology, reward systems and environmental uncertainty, proved to be significant. Strategy is positively correlated and statistically significant with the use of these measures ($r = 0.584, p < 0.05$). Technology is also positively correlated and statistically significant ($r = 0.415, p < 0.001$). Reward systems variable has a positive correlation and statistic significance ($r = 0.236, p < 0.05$). Finally, environmental uncertainty is also positively correlated to the use of these measures and statistically significant ($r = 0.216, p < 0.05$). Contrary to expectations, there is no significance with the other three independent variables, namely structure, competition and

management style. This might be because of the novelty of such measures in the Egyptian society; therefore, further investigation is needed to reach the meaning of these relationships.

6. RESEARCH ANALYSIS

The results of this study demonstrate that successful implementation of performance measurement technique also requires a complementary mix of different financial and non-financial control systems. Specifically, firms need to incorporate bottom-up measures, frequent reports of quality results and vendor reliability in order to make the right decisions. Firms also must adapt their control system by empowering workers and linking compensation rewards to quality results.

While not all the independent variables show a significant contribution, but at least one set of measures showed a significant relationship with the independent variables as shown in [Table 4](#). The research results suggest that applying more than one type of performance measures is not necessarily depending on a specific variable such as corporate strategies but on multiple variables. In this sense, these results support [Ittner and Larcker's \(1998\)](#) conclusion that recent initiatives to link long-term strategies to short-term actions have yet to prove successful. [Epstein and Birchard \(2000, p. 10\)](#) explain that managers always have had trouble making the system for corporate strategy, business-unit strategy, budgeting, performance evaluation and compensation work as one. [Kalaganam and Lindsay \(1998, p. 28\)](#) note that there is little current evidence of the successful use of 'strategically driven performance measurements'.

The results show that there is a strong relationship between using financial and non-financial measures and the contingent variables, namely Strategy, Structure, Technology, Management Style, Reward Systems and Environmental Uncertainty. Contrary to expectations, no evidence has been proved to support the relationship with competition. This might be as a result of the prevalence of public sector in the history of these organisations. This was supported by many studies tested the actual benefits from privatisation programmes in Egypt, and it was argued that no major benefits have obtained from such programmes (see for example, [Ismail, 2003](#)). Further investigations need to be undertaken concerning this point, which is left for future research.

Technology was specifically introduced as a major explanatory variable of an effective management accounting system (see for example, [Daft &](#)

Macintosh, 1978; Otley, 1980). Consistent with these studies, technology is found to be very significant variable that affect the use of performance measures, although the learning and innovation measures were proved to be insignificant and not widely implemented in the Egyptian firms. Management style is also found to be significant with the use of performance measures. Egypt as a developing country with a history of socialism with power concentrated in the hands of a few consigned to Egyptian bureaucracy, in which any individual should recognise how power is distributed in the organisation or the business enterprise. This might be the reason why the variable is really very significant to the Egyptian culture, and it has been said that 'There are no easy solutions to the Egyptian bureaucracy' (Stoval, 1990; Hatem, 1994).

Reward systems variable is a well-established variable found to be significant with the use of performance measures. This might be because reward systems (incentives/punishments) always represent a motive for employees to perform their work, especially in a developing country such as Egypt, or it should be so. Finally, environmental uncertainty is found to be extremely significant with the use of performance measures. Obviously, the high vulnerable environment, which prevailed currently in the whole world, is affecting all industries in the Egyptian market. Therefore, the results indicate that Egyptian firms more committed to apply hybrid performance measurement systems that include both financial measures and non-financial measures. And that they are more likely to tie compensation rewards to non-traditional performance measures. This study lends additional support to the idea that significant relationship between the degree of the use of financial and non-financial measures and compensation rewards for compliance with budgets and variances exists, supporting earlier research by Abernethy and Lillis (1995) and Perera, Harrison, and Poole (1997). As noted by Perera et al. (1997, p. 569), 'changes in manufacturing strategies to emphasise quality, flexibility, dependability and low cost should be accompanied by changes in formal performance measurement systems to place greater emphasis on non-financial (operations-based) measures'.

7. RESULTS AND CONCLUSION

This research sought to explore the extent to which the use of different performance measures is dependent on some common contingent factors such as strategy, structure, competition, technology, management style, reward systems and environmental uncertainty in the Egyptian firms. A review

of performance measurement techniques literature identified these variables as the most important variables that determine the usability of any performance measurement technique.

The results indicate that most firms employed some level of non-financial measures practices along with the financial measures. Although it is not possible to discern from this study whether these non-traditional performance measures were a part of an established performance measures technique used in the Egyptian firms, at least the results demonstrate the importance of these measures for firms to have appropriate measures in place to assist the adaptability of the firm. Many variables were hypothesised to have a conceptual relationship with the design and use of PM systems. Strategy, Structure, Technology, Management Style, Reward System and Environmental Uncertainty were suggested to have influence over the use of performance measurement technique. No evidence was found to prove any significant effect of competition. This research contributes to our understanding of the links between the contingent variables suggested in this study and management accounting practices and techniques. The results indicate that the Egyptian firms should employ a performance measurement system that includes both traditional and non-traditional performance measurement.

Specific research limitations might reduce the generalizability and applicability of the findings. As in all survey research, a necessary assumption in data collection is that the respondents had sufficient knowledge to answer the items and that they answered the questions conscientiously and truthfully. Respondents might have been unfamiliar with questionnaire terms used to describe performance measures. Second, an important element of this survey instrument is capturing the degree of performance measures implementation. Although the five models of performance measures on the survey were supported through a thorough study of performance measurement literature, they might not have been indicative of actual company practices. Finally, by seeking to relate the use of different performance measures to the contingent factors, we have not sought to link other factors referred to in other studies. Therefore, further investigation is needed to determine the importance and effect of other variables on the use of performance measures.

Despite these limitations, this study has the potential to contribute to our understanding of control system design and use in developing countries. In addition to the factors that influence the implementation of control systems in the Egyptian firms, our results provide further evidence that support the historical studies concerning integrating financial and non-financial

measures. Whether other organisation theory paradigms are superior to the contingency approach is beyond the scope of this article. Further research is needed to determine some unexplored relationships such as why competition is beyond the focus of the Egyptian firms? Why some specific independent variables have no significant influence over the use of some specific performance measures? Finally, we controlled for the culture factor in this research by taking the entire sample from the Egyptian firms. Therefore, it is a rich area for future research is to take a combined sample including multinational firms working in Egypt to examine the potential effect of culture on the use of performance management.

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CHARACTERISTICS OF THE PERFORMANCE MEASURES IN EXTERNAL REPORTING: NON-FINANCIAL INFORMATION USED BY FRENCH COMPANIES IN THEIR COMMUNICATION

Eric Cauvin, Christel Decock-Good and
Pierre-Laurent Bescos

ABSTRACT

The importance of intangible assets, such as customer relationships and knowledge, is increasing in most countries. Today, all the discussion about concepts such as human or intellectual capital or stakeholder management is evidence of this significance.

Accordingly, an interest in corporate reporting is real: academic studies support the notion that non-financial performance measures are used for predicting future financial performance. There is some evidence that this type of information can influence the perception of financial measures: interactive effects between the two are the subject of numerous studies.

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Based on the results of a postal survey, this paper first investigates to what extent stakeholders influence the choice of non-financial information disclosed by companies. Second, results show that regulatory stakeholders (standard-setting bodies, the regulatory and local authorities) are the main group influencing non-financial disclosure. Finally, a mimetism effect is demonstrated between the companies in the same sector which base their financial communication on identical topics.

1. INTRODUCTION

Numerous individuals and groups have called for greater disclosure of non-financial information by corporations (Boulton, Libert, & Samek, 2000; Norton, 2000; Eccles, Herz, Keegan, & Phillips, 2001; Lev, 2001). They argue that traditional financial measures have a reduced relevance due to changes in business models, which are supposed to reflect the new economy. Moreover, critics raise concerns about the backward looking nature of financial measures and suggest these measures provide little insight into the company's future performance. The demand for external reporting of non-financial performance measures has also been driven by companies' adoption of internal performance evaluation frameworks that incorporate non-financial measures, such as the Balanced Scorecard (Kaplan & Norton, 1996). Investors have asked for external reporting to include performance evaluation metrics used internally and for these measures to be integrated into a discussion of the company's strategy (Eccles et al., 2001). As with companies in other countries in Europe, French firms are used to publishing not only the main accounting performance measures in their annual reports but also non-financial metrics. Mathews (1997) defines non-financial disclosure as: "voluntary disclosures of information, both qualitative and quantitative made by organizations to inform or influence a range of audiences. Quantitative disclosure may be in financial or non-financial terms".¹ But the nature and the importance given to each type of information by firms on their disclosure are influenced by many factors. Among them, it appears that the role of the stakeholders and the mimetism effect between companies play an important role.

The purpose of this paper is to analyze some of the main determinants of non-financial disclosure in the framework of stakeholder and legitimacy theories. With a study based on non-financial disclosure practices from companies on listed companies of the SBF 250,² we propose to examine for French-listed companies what the main non-financial metrics used are, and

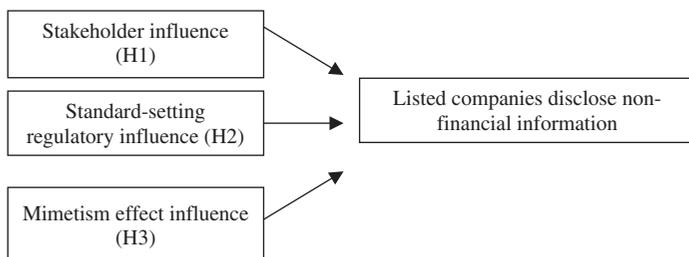


Fig. 1. Framework of the Study and our Three Hypotheses (H1, H2 and H3).

the influence of stakeholders and mimetism effect on this type of information (see Fig. 1).

The remainder of the paper is organized as follows. First, we review the literature on stakeholder theory and non-financial disclosure practices to suggest three hypotheses on factors influencing this type of information. Thereafter, we present our sample and methodology to test our hypotheses. Finally, we discuss the results and conclude with some main limitations.

2. PRELIMINARY FIELDWORK

In order to test our framework in Fig. 1 on a sample of firms, we need to identify a list of the main types of non-financial items used by companies and a list of stakeholders, which are able to influence the type of information disclosed.

2.1. *What are the Main Topics Regarding Non-Financial Disclosure Practices?*

However complex, non-financial disclosure can provide important information about particular values embedded within the firm (see Agle & Caldwell, 1999 for an extensive review). For example, firms that actively comply with environmental regulations signal that they have some degree of concern for natural environment. If non-financial disclosure is a signal of what is important to a firm, then it could be used by individuals who are seeking to form impressions about the firm, its values, its goals and its overall worth. Individuals make decisions such as whether they want to work for a firm, whether they will purchase a firm’s goods and services and whether they want to invest in a firm. For each of these decisions, information about these

various dimensions of a firm can often be variable and incomplete. Non-financial disclosure has the potential to serve as a simple decision tool for individuals making decisions about firms (Jones & Murell, 2001). For example, an individual deciding whether or not to work for a firm could focus on what he or she knows with regard to how the firm has treated its employees in the past (Johnson & Greening, 1999; Turban & Greening, 1997). An investor deciding whether or not to invest in a firm can focus on what he or she knows regarding the firm's recent expensive product recall crisis (Frooman, 1997). And for these investors, public recognition for providing exemplary employee benefits is a positive signal of future business performance as well as sign that a firm is taking steps to maintain an exemplary workforce, an indication of future productivity (Chauvin & Guthrie, 1994).

Our initial survey (Decock-Good, Cauvin, & Bescos, 2004) has attempted to measure and evaluate voluntary non-financial disclosures made by companies in their annual reports in order to provide preliminary evidence on French non-financial disclosure practices. From this initial analysis of non-financial disclosure practices some clear patterns in the incidence of disclosures emerge. The findings indicated that the voluntary non-financial disclosures were incomplete, heterogeneous, providing inadequate disclosure for most of the financial and non-financial performance items. Some items appear in the majority of the annual reports: corporate governance, shareholders, monetary measures, human resources, products and sustainable development. Conversely, the disclosure of other items is not so common: competitors – the market share, clients and research and development. Finally, on average, half of the companies report strategy and risk management items in their communication. Accordingly, we have used this list of non-financial disclosure categories in our study (see Table 1).

Table 1. The Main Categories used in Non-Financial Disclosure.

Shareholders
Clients
Human resources
Governance
Competitors' market share
Products
Risk management
Research and development
Strategy
Main monetary indicators
Sustainable development

2.2. Who are the Main Stakeholders?

The concept of stakeholder is not new, and literature provides several definitions (see Table 2).

These general definitions were given greater precision by Mitchell, Agle, and Wood (1997), who adopted different key identification attributes of which the power exerted over the company by these groups, and their legitimacy are the most basic. Power is the first necessary condition given that the strategy adopted toward the stakeholders depends on the resources they

Table 2. Definitions of Stakeholders.

Source	Definition
Research Institute of Standford (1963) ^a	“those groups without whose support the organization would cease to exist” (p. 31)
Freeman (1984)	“any group or individual who can affect or is affected by the achievement of the firm’s objectives” (p. 53)
Cornell and Shapiro (1987)	“claimants” who have “contracts” (p. 5)
Carroll (1989)	“asserts to have one or more of these kinds of stakes”—“ranging from an interest to a right (legal or moral) to ownership or legal title to the company’s assets or property” (p. 57)
Freeman and Evan (1990)	“contract holders” (p. 352)
Hill and Jones (1992)	“constituents who have a legitimate claim on the firm ... established through the existence of an exchange relationship” ... “the firm with the critical resources (contributions) and in exchange each expects its interests to be satisfied” “Stakeholders differ with respect to the size of their stake in the firm” (p. 133)
Freeman (1994)	“participants in the human process of joint value creation” (p. 415)
Langtry (1994)	“The firm is significantly responsible for their well being, or they hold a moral or legal claim on the firm” (p. 433)
Wicks, Gilbert and Freeman (1994)	“interact with and give meaning and definition to the corporation” (p. 483)
Clarkson (1995)	“have, or claim, ownership, rights, or interests in a corporation and its activities” (p. 106)
Donaldson and Preston (1995)	“Stakeholders are defined by their legitimate interest in the corporation, rather than simply by the corporation’s interest in them” (p. 76)

^aQuoted by Freeman (1984, p. 31).

control and to their level of interdependence on the company. This dimension comes from Pfeffer and Salancik's (1978) analysis, but was also taken up by Frooman (1999), Gioia (1999) and Trevino and Weaver (1999). Norman and McDonald (2004) talked about a triple bottom line reporting model: they grant a greater place to stakeholders for companies. According to these authors, all companies need resources owned by external groups. In exchange, the groups have expectations that are part of the power they exercise over the company in terms of dependence.³ Walsh (2005) states that the firm will "give in" to a stakeholder group only if that group is crucial to the firm's survival. We have different typologies of stakeholders and each group has different powers. According to Mitchell et al. (1997), we can mention these dichotomized classifications (of course, we can have for each classification more details and sub-classes):

- Primary or secondary groups
- Economic or non-economic
- Owners or non-owners of the company
- Owners of capital or owners of less tangibles assets
- Actors or targets
- Groups in a voluntary relationship with the company and groups in an involuntary relationship with the company
- Groups having a formal contract with the firm and groups having an informal contract
- Groups providing resources to the firm and groups depending on the firm.

The legitimacy of these stakeholders is the second aspect. It is defined as the moral right of stakeholders, over and above the legal context, to take place in the life of the company. Suchman (1995) has worked to strengthen the notion of legitimacy, building upon institutional theory (DiMaggio & Powell, 1983). He defines legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, beliefs and definitions" (Suchman, 1995, p. 574).

According to Guthrie and Parker (1989), corporate disclosures are reactions to environmental pressures in order to legitimize the corporation's existence. A company that is likely to pollute the neighborhood's environment, for example, expects ecological standards be respected. Deegan and Rankin (1996) and Deegan (2002) utilized this approach in an attempt to explain systematic changes in environmental disclosure policies in corporate annual reports around the time of proven environmental prosecutions. The results of their study indicate that Australian companies provide a significant

Table 3. List of the 12 Types of Stakeholders Used.

Potential shareholders
Main shareholders
Individual shareholders
Standard-setting bodies (AMF, FASB and IASB)
Board of directors
Employees and unions
Clients
Creditors
Local and regulatory authorities
Media
Community
Local communities

increase in favorable environmental information (in a context of increasing environmental prosecutions) surrounding environmental prosecution. Furthermore, the results of Patten's (2005) investigation provide additional evidence that non-financial disclosure, as argued by Gray and Bebbington (2000), is only a legitimization device and not an accountability mechanism.

According to these statements we have used a list of 12 stakeholders (see Table 3).

Within this model, we will examine French companies to identify the main stakeholders, their impact on non-financial disclosure and the mimetism effect between companies.

3. RESEARCH HYPOTHESES

The study examines the relationships between non-financial disclosure and some determinants in the stakeholder approach (see Fig. 1). The selection of variables was based on theoretical support in accounting literature and prior empirical findings in French firms of the CAC 40. While these findings did not result in a major revision of the list of non-financial items, they did help narrow the results. The hypotheses formulated are outlined in the following sections.

3.1. Stakeholder Pressure

Recent research has attempted to theorize non-financial disclosure, interpreting disclosure from stakeholder (Ullman, 1985; Roberts, 1991; Gray, 2002) and legitimacy perspectives (Guthrie & Parker, 1989; Patten, 1992; Breton & Pesqueux, 2006; George, 2003). Cornell and Shapiro (1987) postulate that

stakeholders other than investors and management play an important role in financial policy and constitute a vital link between corporate strategy and corporate finance. Stakeholder analysts argue that all persons or groups with legitimate interests participating in an enterprise do so to obtain benefits. All stakeholder relationships are depicted in the same size and shape and are equidistant from the “black box” of the firm in the center (Donaldson & Preston, 1995; Milne, 2002). For example, Shell recognizes an increased number of stakeholders compared with historical norms, identifying shareholders, customers, employees, those with whom it does business, and society at large. The case of Shell points to the fact that that organizations compete not only for resources and customers, but also for political power and institutional legitimacy, for social as well as economic well being. But these stakeholders have two or three attributes: power, legitimacy and/or urgency (Mitchell et al., 1997). Up to this point, various classes of stakeholders might be identified based upon one or more of these attributes. Therefore, we postulate that some stakeholders are dominant, dependent, demanding or discretionary and that all stakeholders do not have the same expectations in terms of non-financial disclosure. Hence, we test this first hypothesis:

H1. A relationship exists between stakeholders’ categories and non-financial items’ categories disclosed.

3.2. Standard-Setting Regulatory Position on Non-Financial Information

According to Neu, Warsame, and Pedwell (1998), we propose that financial stakeholders and regulators are considered to be the most important stakeholders. Within the accounting literature, financial stakeholders are assumed to be the primary users of business reporting (Zeghal & Ahmed, 1990; Bowen, DuCharme, & Shores, 1995; O’Donovan, 2002). Following this, non-financial information offers private and institutional investors a long-term and comprehensive frame of reference for their global investment strategies. The assessment by key stakeholders of the company’s performance and their future intentions toward the organization are expected to be important contributing features of the report’s value to analysts, who include these criteria in their research, evaluations and recommendations. There is a great opportunity for the stock markets and governmental authorities, such as the Securities and Exchange Commission and the Financial Accounting Standards Board (FASB) in New York and the IASB in Europe to become pioneers in promoting and winning acceptance for interactive non-financial disclosure around the world. Non-financial

performance disclosure includes intangible assets and strategic information. Patten (2005) underlines that without additional review and enforcement by the Securities and Exchange Commission (SEC) it seems unlikely that companies, on average, will even improve the quality of their non-financial disclosures (see also Adams & Harte, 1998, 2000). The FASB allows (with exceptions, such as computer software costs) recognition of only purchased intangible assets.⁴ Moreover, even though they are accepted, intangible assets are evaluated at amortized cost, and not at an estimate of their fair value. These financial data are insufficient. That is why today, the FASB has started working on non-financial information with its project “Disclosure of Information about Intangible Assets Not Recognized in Financial Statements” (FASB, 2001). This project has been included in the technical agenda since January 2002 and will provide changes in status of financial information and communication. The project objective was to establish standards that will improve disclosure of information about intangible assets that are not recognized in financial statements.

The situation with international standards is similar in Europe. The IASB has had a conceptual framework since 1989, created by the IASC. These standards provide almost no information about intangible assets. Considering the dominance of intangibles in the assets of modern corporations and the importance of relevant and timely information disclosure for optimal resource allocation in capital markets, it is not surprising that policymakers and accounting standard-setting bodies (e.g. the FASB and IASB) are particularly concerned about these issues to enhance information on intangibles in corporate financial reports (Amir, Lev, & Sougiannis, 2003). Lev, Nissim, and Thomas (2002) provided evidence that by adjusting book values of companies for the capitalization and amortization of R&D, for example, one can generate profitable investment strategies. Suitable consequential policy actions cannot be restricted to corporate financial reports. We can then expect the standard-setting regulatory to play a major role in the disclosure of information of non-financial items. Hence, we test this second hypothesis:

H2. The main groups influencing the non-financial disclosure are the standard-setting bodies.

3.3. Public Pressure and Legitimacy

Guthrie and Parker (1989) and Milne and Patten (2002) suggest that today, companies are more likely to provide non-financial disclosure in response to

public pressure than previously. Likewise, Patten (1992) posits that firms provide useful proxy for the amount of public pressure, the implication being that firms operating in certain industries are more likely to provide non-financial information. Belkaoui and Karpik (1989) underline that politically visible firms in certain sectors are asked to respond to the demands of activist stakeholders. Such firms can choose non-financial disclosure to reduce or alter their political visibility. Finally, Meznar and Nigh (1995) explain that firms actively try to meet and exceed regulatory requirements in their industries or attempt to identify changing expectations in order to promote organizational conformity to those expectations. Moreover, Carroll and Delacroix (1982) include political and institutional legitimacy as a major resource. In this context the concept of institutional isomorphism is useful to understand the politics. Indeed, pressures of external actors or other companies may imply disclosure relating to non-financial information. Isomorphism can be the result of both formal and informal pressures exerted on organizations by other organizations or actors on which they depend and by cultural expectations from the society within which organizations function (DiMaggio & Powell, 1983). There would be a mimetism effect among the companies in the communication of non-financial information.

Hence, our third hypothesis is:

H3. Companies base their non-financial disclosure on identical topics with similar companies in the same sector.

4. RESEARCH METHOD AND RESULTS

To test our hypotheses we conducted an empirical survey by mailing a questionnaire to the 250 largest French listed companies (SBF 250). This questionnaire is mainly based on the communication aspects of non-financial information used and the stakeholders who can influence this communication. The survey instrument was constructed taking into account previous studies analyzed in the literature review and the exploratory research conducted on CAC 40 companies. The first mailing was sent in June 2004, followed by another in July and August of the same year. A total of 247 companies with their headquarters in France were contacted and 51 questionnaires were completed and returned, with a rate of response of 20.65%. The respondents work mainly in the area of finance (36.6% are CFO's, 26.8% are in charge of investor relations, 24.4% work in communication and 12.2% are members of the management executives).

The respondents' companies have average sales of €11.47 billion, with 65,127 employees on average. A total of 58.3% of the companies are in the manufacturing sector and 41.7% are service businesses.

4.1. The Stakeholders

Table 4 below shows the main targets of the non-financial information communication identified in our exploratory research and on the literature analysis (Marx, 1992; Henriques & Sadorsky, 1999). The respondents rated the importance of the 12 targets by using a five-point Likert scale (from 1 = not important to 5 = very important).

According to our results, the shareholders (potential and actual) appear to be the main targets. However, we can notice disparities among the responses. Strong correlations exist between these targets. For this reason, a principal component factor analysis was conducted on these variables. This treatment led us to distinguish five groups of variables (which explain 75% of the variance). The groups are:

1. Regulatory stakeholders (standard-setting regulatory, regulatory and local authorities)
2. Organizational stakeholders (employees and customers)
3. Predominant shareholders (main shareholders and board of directors)
4. The media and potential investors
5. Individual shareholders

These groups are consistent with prior results in the literature. As in our study, Carroll (2000) distinguishes primary groups (regulatory stakeholders, organizational stakeholders and predominant stakeholders) and secondary groups (media and societal stakeholders). Henriques and Sadorsky (1999) found the same results adding a fifth group, individual shareholders.

The factor's ordering validates our second hypothesis (*the main groups which influence non-financial disclosure are the standard-setting bodies*), since regulatory stakeholders appear in first place in our statistical analysis (see Factor 1 in Table 4). In fact, standard-setting bodies are only one part of this group of regulatory stakeholders in France. We also find other institutions in the same group such as like regulatory and local authorities, the community at large and local communities which also influence *non-financial disclosure*.

Conversely, the media and potential or actual shareholders do not strongly influence the non-financial information disclosed.

Table 4. Targets of Financial Communication (Scale from 1 to 5 – $N = 51$).

Targets (Types of Stakeholders)	Mean	Variance	Factors #				
			1	2	3	4	5
Potential shareholders	4.20	0.80	0.26	0.02	-0.05	0.78	0.16
Main shareholders	3.96	1.20	0.22	0.10	0.79	0.05	-0.10
Individual shareholders	3.57	0.96	-0.10	0.18	-0.05	0.06	0.85
Standard-setting regulatory (AMF, FASB and IASB)	4.04	1.02	0.51	-0.35	0.39	0.10	0.49
Board	4.00	1.11	0.07	0.08	0.90	0.01	0.03
Employees and unions	3.33	0.89	0.12	0.84	0.23	0.13	0.05
Clients	3.29	1.01	0.29	0.78	0.00	0.06	0.20
Creditors	3.04	0.96	0.47	0.36	-0.17	0.07	0.44
Authorities	2.98	1.14	0.85	0.02	0.18	0.15	-0.06
The media	3.84	0.99	0.02	0.14	0.11	0.85	-0.04
The community	2.96	1.18	0.77	0.24	0.29	0.12	0.07
Local communities	2.63	1.13	0.83	0.36	0.03	0.11	-0.04

Note: The five factors are (by order of importance):

1. Regulatory stakeholders (standard-setting bodies, the regulatory and local authorities)
2. Organizational stakeholders (employees and customers)
3. Predominant shareholders (main shareholders and board of directors)
4. The media
5. Potential investors and individual shareholders

4.2. The Relationships between the Categories of Stakeholders and the Item of Non-Financial Disclosure

The non-financial disclosure’s topics was selected based on our first exploratory study conducted on the CAC 40 companies and on the literature (see Section 2; Perks, 1994; Roberts, 1991; Gray, Owen, & Adams, 1996). Table 5 shows the importance of the different types of information disclosed (on a five-point Likert scale).

The current topics are highly ranked, except for sustainable development. Strategy, governance and shareholder relations which appear to be important topics. Once again, we can observe strong correlations between these topics. A principal component factor analysis was conducted on these variables and gives us three main topics (or groups of variables which explain 56.8% of the variance):

1. Activity (clients, products and market share)
2. Management (governance, strategy, R&D and risk management)
3. Development partnerships (shareholders and human resources)

Table 5. Topics of Financial Communication (Scale from 1 to 5 – N = 51).

Topics	Mean	Variance	Factors #		
			1	2	3
Shareholders	4.25	0.74	-0.04	0.04	0.73
Clients	3.86	0.96	0.79	-0.22	0.30
Human resources	3.53	0.90	0.46	0.08	0.67
Governance	4.12	0.84	0.06	0.61	0.50
Competitors/market share	3.61	1.08	0.80	0.12	0.05
Products	4.00	0.82	0.74	0.35	-0.25
Risk management	3.75	0.96	0.05	0.64	-0.01
Research and development	3.53	1.06	0.48	0.62	-0.09
Strategy	4.22	0.73	0.01	0.75	0.27
Main monetary indicators	3.65	1.00	-0.03	0.27	0.33
Sustainable development	3.41	1.15	0.38	0.42	0.30

Note: Groups of variables:

1. Activity (clients, products and market share).
2. Management (governance, strategy, R&D and risk management).
3. Development partnerships (shareholders and human resources).

Table 6. Relations between Stakeholder Groups and Topic Groups of Financial Communication (Spearman Correlations and Significance Threshold).

Topics	Groups				
	Stakeholder Groups				
	Regulatory Stakeholders	Organizational Stakeholders	Predominant Shareholders	The Media and Potential Investors	Individual Shareholders
Activity	0.314*	0.414**	0.176	0.074	-0.172
Management	0.09	0.033	0.155	0.19	0.473**
Development partnerships	0.311*	0.102	0.144	0.219	0.382**

*The correlation is significant at the level $p < 0.05$.

**The correlation is significant at the level $p < 0.01$.

To validate our Hypothesis 1 (*a relationship exists between the categories of stakeholders and the categories of non-financial items disclosed*), we looked for the correlations between the different groups of stakeholders identified above (Table 3) and the groups of topics used by the companies in their financial communication (Table 1). Table 6 shows the correlations between these two sets of variables.

The following topics are linked to some stakeholder groups:

- (1) Activity (clients, products and market share) is correlated with regulatory stakeholders (standard-setting bodies, regulatory and local authorities) and organizational stakeholders (employees and customers).
- (2) Management (governance, strategy, R&D and risk management) is correlated with individual shareholders.
- (3) Development partnerships (shareholders and human resources) are correlated with regulatory stakeholders (standard-setting bodies, regulatory and local authorities) and investors (individual shareholders).

Thus, the groups of topics highlighted in our study are influenced by specific groups of stakeholders, and some of the relationships show significant cohesion between these elements. Hypothesis 1, that the relationship between the categories of stakeholders and the categories of non-financial disclosures,

is validated for the three topics concerning activity, management and development partnerships.

Conversely, we do not see any influence on topics from the media or the predominant shareholder groups.

4.3. Mimetism Effect

As shown in Table 7 below, we asked respondents about the topics used by the competitors in the same activity sector to test Hypothesis 3 (companies base their financial communication on identical topics with those of companies in the same sector). Our purpose was to identify a mimetism effect within financial communication.

This ranking is approximately the same, which tends to imply there is some similarity between the financial communication of a company and its competitors. The results are indicated in Table 7.

According to Table 7, Hypothesis 3 is validated; there is a mimetism effect, as all the topics have important and significant correlations, except for strategy. Pertaining to strategy, the companies have different behaviors than their competitors.

Table 7. Correlations and Meaning Threshold between Topics used by the Respondents' Companies and their Competitors.

Topics	Correlations	Meaning Threshold
Strategy	0.242	0.094
Shareholders	0.446	0.001**
Governance	0.590	0.00001**
Products	0.427	0.002**
Clients	0.511	0.0002**
Risk management	0.339	0.017*
Main monetary indicators	0.550	0.00004**
Competitors/market shares	0.622	0.00001**
Human resources	0.526	0.0001**
Research and development	0.651	0.00001**
Sustainable development	0.649	0.00001**

*The correlation is significant at the level $p < 0.05$ (bilateral).

**The correlation is significant at the level $p < 0.01$ (bilateral).

5. CONCLUSION

The purpose of this study was to better understand the use of non-financial disclosures. Based on 51 questionnaires (rate of response = 20.65%), results suggest that the disclosure of non-financial information by listed companies is based on a variety of targets and topics we have identified. By investigating large French companies, this study extends prior research, which until now has been conducted mostly in North America or in other English-speaking countries into a European context. The study's main results suggest that, as predicted, pressure by standard-setting regulatory, pressure by different stakeholders and industry category are the most important determinants of a firm's non-financial disclosures.

More precisely, the first point was to examine the links between different stakeholders and non-financial disclosure's topics. These non-financial disclosure's topics are activity, management and development partnerships. For these items, we see an influence of regulatory, organizational and individual stakeholders. It is interesting to note that sustainable development is not mentioned and the media is not a relevant stakeholder in this study. From this point of view, this result is contrary to the studies in North America (Neu et al., 1998); it is specific to the French context and constitutes a contribution for better understanding the value of non-financial disclosures.

The second hypothesis examined if standard-setting regulatory plays a role in non-financial disclosure. These standard-setting bodies (the FASB and IASB) underline the necessity to capture and communicate business information not found in existing financial statements. The FASB's project (FASB, 2001) might develop a framework within which industry and trade associations could suggest non-financial metrics best suit their industries. In this study, Hypothesis 2 was verified; standard-setting regulatory, as authorities, influences non-financial disclosures in French companies. This result is consistent with Hassel, Nilsson, and Nyquist (2005). These authors underline the importance to the investor of information of a company's non-financial disclosures, and that the aim of standard-setting regulatory is to satisfy these investors.

Finally, the last hypothesis on mimetism effect was verified. This result is consistent within the context of institutional theory. Such institutions develop over time through imitation as individual players, such as managers and organizations, attempt to conform socially acceptable beliefs and cultural frameworks (Meyer & Rowan, 1991; DiMaggio & Powell, 1983). Moreover, our results are consistent with the recent study of Cormier, Magnan, and Van Velthoven (2005); the mimetism effect with companies in

the same sector takes place over time. According to these authors, a firm may safely justify its actions by imitating the practice of another organization that is widely perceived to be a leader; thus leading to convergence in non-financial disclosures.

Nevertheless our results are based on a 51-company sample, which is a small sample size. For this reason, it is difficult to test the impact of size or other contingent variables as in Hassel et al. (2005). The results of this study should be interpreted with caution. It should be noted that additional surveys conducted on a greater scale or including companies in other countries could improve our conclusions. Moreover, we believe that the future will bring more available data on non-financial disclosures as well as improved non-financial measures. Future studies will address these non-financial disclosure questions.

NOTES

1. In a special report, the FASB provides these complementary definitions. “*Non-financial disclosures and metrics* include index scores, ratios, counts and other information not presented in the basic financial statements. *Financial reporting* includes the basic financial statements and accompanying notes. *Business reporting* encompasses the broader universe information provided by business enterprises including management’s discussion and analysis, information provided in the annual report, presentation to analysts, fact books and business information provided on the company’s website”.

2. The 250 largest French-listed companies.

3. There is dependence when the “resource suppliers” are concentrated, have the capacity to exercise a form of control, are not mobile, cannot be substituted for or that the relationship is characterized as essential.

4. For example, a firm’s research and development expenditures that potentially create intangible assets related to technology are expensed as incurred.

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BALANCED SCORECARD AND RESULTS-BASED MANAGEMENT: CONVERGENT PERFORMANCE MANAGEMENT SYSTEMS

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ABSTRACT

This paper compares and contrasts two of the most widely adopted Performance Management (PM) frameworks – Balanced Scorecard and Results-Based Management. It reviews the two frameworks' independent origins and separate evolutionary paths, and examines the resulting differences in practical application. Two case studies are presented, one examining Results-Based Management implementation within a global UN agency, the other describing work to build a 3rd Generation Balanced Scorecard within a Middle Eastern government ministry. The authors propose that the two frameworks are converging in terms of the approaches used for framework design and implementation.

INTRODUCTION

The use of performance data to monitor, evaluate and improve the effectiveness of organisations has been a facet of human activity since the early

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days of civilisation. The concept of trading between communities, the use of currency, and the creation of monumental constructions such as the pyramids attest to an ability to envision, organise and manage complex activity dependent upon reliable data that pre-dates the modern world.

The ability to engage in complex activities requiring large-scale organisational management has been almost exclusively a public sector (or at least non-commercial) activity for most of history. However, the development of financial accounting and banking in Italy in the 15th century and the subsequent emergence of the commercial joint-stock company in The Netherlands and later Britain in the 1600s triggered the rise of truly complex organisations in the private sector. A critical consequence of these developments was to allow for the separation of the 'management' and 'ownership' of assets and the consequent emergence of the modern private sector organisation. In such organisations, managers are held accountable for the delivery of a narrowly defined set of financial outcomes related primarily to the present value of the organisation's traded share capital (shareholder value) by a closely defined group of owners (i.e. the shareholders, and other providers of financial resources) with broadly homogenous expectations.

This private sector focus on financial return is reflected by the pre-eminence of financial data as a mechanism for performance monitoring, evaluation and control in the sector. In so far as the effectiveness of management's engagement in other aspects of organisational activity (e.g. in commercial strategy, compliance with legal statute, and procurement and management of workers) is evaluated externally, it is typically calibrated in terms of actual or anticipated impact on shareholder value. This translation of private sector performance into a set of performance measures that is common to all joint-stock organisations also enables inter-organisational comparisons, even between dissimilar private-sector organisations. The rise of the 'corporate raider' is a powerful illustration of the transparency provided by the use of comparable performance measures – with the raider opportunistically replacing incumbent managers where it is apparent that they are making poor use (in terms of financial return) of the assets entrusted to their care.

However, this emphasis on financial measures of performance began to be seen as sub-optimal by the 1980s, and recent management reforms have focused on ways of expanding the range of non-financial measures used internally and externally to monitor and evaluate activity. These changes, increasingly supported by firm evidence of success, have served to improve the 'quality' of management, as measured (in part) by the ability of managers to successfully achieve 'strategic' goals over time.

Conversely, in the public sector the separation of ‘owners’ and ‘managers’ is not as clear: the clarity of the private sector’s focus on simple financial returns is missing. Organisational activity is based instead upon the achievement a complex web of social, political and ethical requirements set by a diverse group of stakeholders with heterogeneous motivations and influences. Indeed, in the UK at least, the lack of capital budgeting provisions in public sector accounting rules have traditionally made any determination of ‘financial asset return’ quite difficult. Consequently, monitoring and evaluation of activity in the public sector has had to focus more on the achievement of non-financial goals, and methods of evaluation have traditionally been more specifically tailored to the needs and interests of specific stakeholders.

This complexity of purpose and the associated diverse methods of activity monitoring adopted in the public sector have led to problems of transparency, which in turn have constrained the ability of stakeholders to monitor and evaluate the performance of public sector organisations. Because of this lack of effective oversight, it has been argued that public sector activities have greater scope to be ‘inefficient’ compared to equivalent activities in the private sector. This in turn has led to concerns both about ‘value for money’ and ‘ability to control’ public sector activities.

In an attempt to redress these issues of oversight and the associated issues of efficiency and control recent changes in public sector policy and management have promoted the use of private sector tools and frameworks to manage public sector activity – e.g. Balanced Scorecard mandated in the USA in the 1990s (Andersen & Lawrie, 2002). But these have been found difficult to apply – partly because they have, in their private sector form, not been subject to the same pressure to address issues of monitoring and evaluation against the diverse needs of multiple stakeholders. This weakness has been reflected in the continued separate development of public sector management frameworks.

Public and private sector performance management practice is therefore converging – in the private sector through greater interest in the inclusion of non-financial measures of activity in monitoring and evaluation systems, and in the public sector by the introduction of performance monitoring and evaluation methods and structures that provide some of the transparency and comparability that has been so useful in the private sector.

In this paper we look at these trends through insights gained during two recent projects carried out by 2GC in the public sector. In one, 2GC worked to deploy a private sector performance management framework (the Balanced Scorecard) in a complex public sector environment focused on the

monitoring and evaluation of development investment in an emerging economy. In the other, 2GC worked on the improvement of a public sector monitoring and evaluation methodology called Results-Based Management (RBM) that is popular among the agencies of the United Nations, through the introduction of lessons from the private sector.

BACKGROUND

It can be strongly argued that the public sector led the way in terms of innovation in performance management methods up until the early 1970s. From the Doomsday book through to the civil administration of the Empires of the 19th and 20th centuries, the economic demands of military campaigns and the associated need to raise income through taxation pushed public administration to find efficient ways to monitor activity within an economy. Many standard management tools, including process mapping, strategic planning, scenario planning and materials resource planning can trace their routes back to projects or methods developed in the public sector or the military. One such management tool is the ‘Logical Framework’, a performance management device widely used in the Non-Governmental Organisation (NGO) and Development Organisation (DO) sections of the public sector.

Logical Framework, an analytical device used to plan, monitor and evaluate projects, originated in work carried out for the US Department of Defense in the 1960s (Hambly Odame, 2001). Logical Framework (or Log-Frame) was found to be helpful as a planning and evaluation tool in complex and unpredictable environments in which outcomes are not clearly measurable, and the required interventions are difficult to predict. Initially adopted by the United States Agency for International Development (USAID), during the 1970s it was widely applied by many DOs for planning, and to support the newly emerging discipline of ‘monitoring and evaluation’ (M&E).

At its simplest, the logical framework is a four-by-four matrix. Many variations exist. As represented in Fig. 1, the vertical axis describes the causal relationships between the activities going into a programme (or other organisational effort) and the results produced as a consequence. (A ‘result’ is characterised as a “describable or measurable change in state that is derived from a cause and effect relationship”.) The horizontal axis describes the results sought at each level of the hierarchy and how these will be measured. All 16 boxes are completed with descriptive text. A completed

	Result Sought	Performance Indicators	Means of Verification	Assumptions/Risks
Impact				
Outcome				
Outputs				
Activity				

Fig. 1. Logical Framework (LogFrame) Matrix.

LogFrame provides a one-page summary of the programme’s ‘strategic logic’: the performance expected from the programme at multiple levels and the means of assessing this performance over time. Good LogFrames are completed by a combination of programme managers, M&E specialists and external stakeholders, for example intermediary partners and government representatives.

By the end of the 1980s, DOs were using LogFrame to plan activity centrally and to measure/assess delivery remotely. But new pressures were emerging that would trigger the development of a new framework derived from LogFrame called Results-Based Management (RBM).

Private sector interest in formalised performance management (PM) frameworks possibly dates from the pioneering work of F.W. Taylor in the early 20th century, but it is only since the 1960s that private sector managers and researchers have observed the limitations of financial measures (e.g. Dearden, 1969) and the value of non-financial measures (Report of the Committee on Non-Financial Measures of Effectiveness, 1971) in support of improved decision-making. During the 1970s, the concept of planning, not measurement, rose in importance – good strategies and plans were seen as the route to organisational success. This decade saw the arrival of the global strategy consultancies – McKinsey, Bain and the Boston Consulting Group, for example – who sought to develop the best possible business strategies and plans for their clients. Over the next two decades, however, it became apparent that this determinist approach to organisational performance was flawed (e.g. Johnson & Kaplan, 1987): good plans were not always delivered, or even deliverable. One study found that 90% of surveyed managers believed their organisation to have a good strategy, but only 35% thought they executed it well.

During the 1980s, the concept of ‘emergent strategy’ appeared to counter this 1970s determinism. Now, strategy involved being clear on long-term

goals, but adapting shorter terms activities and outputs to changing circumstances (Mintzberg & Waters, 1985). With this element of ‘learning by doing’ came the need for managers to develop a deeper understanding of what was ‘going on’ in the business. Private sector organisations began to address an historic over-reliance on financial reports, seeking out non-financial measures of performance to better control strategy and its delivery.

During the late 1980s, Robert Kaplan and his associate, David Norton, were engaged in a co-operative research programme that brought them into contact with Analog Devices, a Silicon Valley manufacturer of integrated circuits. Analog Devices was using a simple but effective management reporting system that included both financial and non-financial measures called ‘The Balanced Scorecard’ (Stata, 1989). The framework organised the firm’s measures into four ‘perspectives’: ‘Financial’, ‘Customer’, ‘Internal Process’ and ‘Learning & Growth’. Kaplan and Norton (1992) took this idea and reported it in a paper.

This early version of the Balanced Scorecard was attractive – a simple (if vaguely defined) means of addressing a problem many managers had noted for years – a dearth of useful non-financial measures of organisational performance. From 1992 firms began to adopt Balanced Scorecard in earnest (Rigby, 2001, 2003), to be followed some years later by public sector organisations, initially within OECD countries.

EVOLUTION OF BALANCED SCORECARD

A recent survey determined that companies use an average of 13 management tools or frameworks at the corporate level. Many of these are tools intended to help measure or monitor the performance of an organisation, and within this list the most popular performance-related framework was the Balanced Scorecard (57% reporting use of a Balanced Scorecard) (Rigby & Bilodeau, 2005). This is a remarkable achievement for a simple framework introduced only about 10 years earlier. A key contributor to this long-term success has been the steady evolution of the Balanced Scorecard framework in the light mainly of practical experience (Guidoum, 2000; Lawrie & Cobbold, 2004), but also to some extent from theoretical development by academics and others (Kennerley & Neely, 2000; Lipe & Salterio, 2000; Shulver & Antarkar, 2001).

Many early adopters of Balanced Scorecard had found it difficult to design. Part of the problem related to filtering: many more measures were available to managers than could be practically used. In the absence of a

basic strategic context (as available within the Logical Framework, for example), managers found it hard to agree on an appropriate set of measures of organisational performance (Butler, Letza, & Neale, 1997; Ahn, 2001; Irwin, 2002). One resolution to this difficulty was to agree to delegate the selection process: either to outside agents (e.g. consultants) or to a specialist team within the organisation. While this at least relocated the selection problem out of the management team itself, it was soon found that Balanced Scorecards developed in this manner were perceived to be unhelpful by the managers charged with using them, contributing to a high rate of abandonment for these 'first generation' Balanced Scorecards (Lingle & Schieman, 1996; Schneiderman, 1999; Malina & Selto, 2001).

Researchers and practitioners proposed several improvements to the design process for Balanced Scorecard to address these design problems. In 1993, Kaplan and Norton wrote a follow-up paper introducing the concept of 'strategic objectives' – short sentences describing the 'goals' introduced in the 1992 paper. The authors proposed that there should be a direct mapping between each of the several strategic objectives attached to each of the four perspectives and one or more performance measures. This innovation provided a basic context for measure (indicator) selection and helped with measure filtering – the strategic objectives provided the logic for choosing one measure over another within each perspective.

A second innovation helpful to Balanced Scorecard measure selection came from research into causal relationships or 'linkages', between measures, across perspectives. Managers began to hypothesise the relationships between business objectives (not measures) and in the mid-1990s Balanced Scorecard documentation began appearing that recorded these objective-to-objective relationships. Alternatively called Strategy Maps or Strategic Linkage Models (SLM), these graphical illustrations of objective hierarchy typically sought, from the Kaplan and Norton perspective, to connect 'Learning & Growth' objectives with 'Internal Process' objectives, thence with 'Customer' objectives, and finally to 'Financial' objectives.

This type of Balanced Scorecard – consisting of a four-perspective SLM plus a set of measures – had been hinted at in papers emerging from 1995 onwards, but the first unambiguous description of this type of Balanced Scorecard appeared in a Swedish publication in 1997 (Olve et al., 1999), and in a book by Kaplan and Norton (2000). Many observers consider this 'second generation' Balanced Scorecard to be current standard practice. A wide range of variations to this second generation Balanced Scorecard design have been proposed (e.g. Butler et al., 1997; Brignall, 2002) but without having much impact on general practice.

But while the use of strategy mapping and linkage models during the second half of the 1990s is seen to have made easier the task of measure selection, new problems appeared. Predictably, these problems related to choosing the strategic objectives themselves – Kaplan and Norton’s concept of ‘perspective goals’ did not provide sufficient context for the selection of strategic objectives. Management teams found it difficult to agree the few (typically 12 to 20 on an SLM), most important things for them to focus on (Lawrie & Cobbold, 2004).

Practitioners sought solutions to this new problem of selecting meaningful strategic objectives for the organisation. Between 1996 and 1998, a multinational food-manufacturing firm working with one of the authors developed a third element of the Balanced Scorecard design – a document known initially as a ‘Vision Statement’, and later renamed as a ‘Destination Statement’.

Initially, Destination Statements were produced after the SLM had been agreed and the measures selected, as a quality assurance test and to help with subsequent target setting. Managers were asked to describe and document what the organisation would ‘look like’ once their strategic objectives had been achieved. The articulation of a clear statement describing what an organisation’s management hoped to achieve was not a new idea (Senge, 1990; Kotter, 1995); the improvement was simply to use this statement to support target setting.

Through subsequent projects of a similar nature, within several private and public sector organisation, the authors observed that this ‘rolling forward’ of the current strategy could be constructed in parallel with, or even as a precursor to, the selection of strategic objectives and measures. Since 2000, standard practice has emerged to develop the Destination Statement as the first step in the Balanced Scorecard design process: with a consensus on what needs to be achieved by some future date, management teams find it easier to reach agreement on the key actions and outcomes to be monitored, and so what measures (and targets) to include in the Balanced Scorecard.

A second development during the late 1990s concerned SLM design. As indicated earlier, the first versions of SLMs used Kaplan and Norton’s four-perspective hierarchy, flowing from ‘Learning & Growth’ through ‘Internal Process’ and ‘Customer’ to ‘Financial’. This caused problems for some users, in particular public sector organisations seeking non-financial outcomes.

A UK government agency, during a project to design an aligned set of Balanced Scorecards, developed a new, more intuitive form of SLM. Using a detailed Destination Statement as a reference point, agency managers identified the near term activities that would need to be completed if they were to remain on track to realise their Destination Statement commitments

at a later date. For each of these activities, the managers also chose a measurable 'outcome' objective that would help them determine if the activity was 'working' as required. In some senses, this pairing of activity and outcome objectives echoes in a more practical form the calls made by Kaplan and Norton for 'leading' and 'lagging' measures (Kaplan & Norton, 1993). To illustrate causality between these two sets of objectives, the agency's managers produced the first reported two-perspective SLM.

A third recent innovation concerns the design process, rather than the components making up the Balanced Scorecard itself. Early Balanced Scorecards were simply about measures, and a set of measures is easy enough to decide through a small project team. As Balanced Scorecards have become more 'strategic', reflecting the organisation's objectives and goals, so has the need for the entire management team, not a sub-set, to decide what goes into their Balanced Scorecard. These decision-makers are busy people however, and have limited time to devote to Balanced Scorecard design. To deal with this constraint, the authors developed and refined a workshop approach to facilitate the articulation of a consensus view on the managers' destination, objectives and measures. This innovation minimises the time investment required by managers to design Balanced Scorecards that they 'own' and are likely to use subsequently. In total, some four days are typically required of each manager, over two to three months, to design a 'third generation' Balanced Scorecard.

EMERGENCE OF RESULTS BASED MANAGEMENT

The 1990s brought new challenges to DOs, in particular the UN and its agencies. This decade saw Organisation of Economic Development and Cooperation (OECD) country governments successfully implementing major public sector management reforms, in response to changing social, political and economic pressures. Central to these reforms were efforts to improve transparency of performance within government, and to achieve 'more with less'.

By the end of the decade, most of the United Nations system organisations were facing similar challenges and pressures from their contributors to reform their management systems and become more effective and results-oriented.

(Ortiz et al., 2004)

DOs focus on improving life in poor countries, using rich country expertise and finance. The UN's Millennium Development Goals are representative

of the human challenges typically addressed by DOs (United Nations Secretariat, 2003):

- eradicating hunger,
- universal education,
- gender equality,
- reducing child mortality,
- increasing maternal health,
- combating disease,
- environmental sustainability, and
- ‘partnering for development’.

These goals were not new. DOs, primarily NGOs and the development ministries and agencies of donor nations, have been working on similar goals for decades (Wilensky, 1969; Belshaw, 1981). The challenge then, as now, was twofold.

- First, to design and plan interventions (or development programmes) that are likely to achieve the development outcomes sought.
- Second, to assess programmes to understand the extent to which they are successful in achieving these outcomes, and why.

Managers of DOs knew that meeting the second part of the challenge would allow, in principle, for good programmes to be repeated elsewhere and for less successful programmes to be re-designed or ended. Like managers everywhere, DO managers have attempted to use feedback on past performance to improve future performance.

Although popular and widely used, LogFrame analysis was insufficiently broad to support both of these challenges without modification. Following on from some initial work carried out by the OECD, the United Nations selected a new framework called Results-Based Management (RBM) as its preferred management framework to underpin its response to the demand for reforms within the UN system. The UN adopted a modified version of the OECD (2000) definition of RBM:

RBM is a management approach focused on achieving results; a broad management strategy aimed at changing the way [agencies] operate, with improving performance (achieving results) as the central orientation.

UN agencies were given significant latitude in applying the RBM framework – RBM was initially a set of management principles, to be applied within an agency as the local executive saw appropriate, not a specified methodology. Nonetheless, the adoption of RBM was coordinated between agencies, with

the UN Joint Inspection Unit (JUI) playing an important role in “harmonising” RBM across diverse UN organisations. The agencies made significant efforts to share experiences and to standardise practices, terminology, tools and measures (Ortiz et al., 2004).

Several years into these efforts and RBM is still in the early stages of implementation. In a 2004 report into RBM adoption, the JUI noted that:

some of these efforts have been more fruitful than others, with varying levels of progress achieved in establishing such systems among the organizations of the UN family, and the changeover to a results-based culture has been lengthy and difficult, with organizations struggling to establish environments that promote high performance and accountability, empower managers and staff alike and include them in the setting and accomplishment of programmatic goals.

RBM is ambitious, in that it will place new demands on UN staff that will affect internal activity and the external perception of this activity. The changes required to implement RBM fully are extensive and fundamental.

In another 2004 report from the JUI, 43 ‘benchmarks’ against which agencies can measure their RBM implementation progress are described. These are grouped by management process and are supported by more than 150 subsidiary recommendations. These benchmarks point to the extent of change anticipated within UN organisations, and it is worth noting that many of the subsidiary recommendations constitute significant change initiatives for any organisation. Given the political and bureaucratic nature of the UN, its perhaps not surprising that implementation of RBM has been slow. Examples of the benchmarks and recommendations in the JUI report are:

Planning, programming, budgeting, monitoring and evaluation

- Benchmark 3: Long-term objectives have been clearly formulated for the organization.
- Benchmark 9: A knowledge-management strategy is developed to support RBM.

Delegation of authority

- Benchmark 2: Delegation of authority is clearly determined.
- Benchmark 7: Managers demonstrate required competencies.

Accountability

- Benchmark 3: Accountability is applicable at all levels, from the top down. The executive heads and the heads of major organizational units are therefore the first to be held accountable for the results they are expected to deliver.

- Benchmark 8: A transparent, swift, independent and equitable system of administration of justice is in place.

Performance management

- Benchmark 1: The main prerequisite for an effective performance management system is a change in the culture of the organizations concerned.
- Benchmark 3: Performance management systems are seen as managerial tools that help the organizations run, direct and control their resources on a day-to-day basis.

Rewarding performance

- Benchmark 2: The performance reward scheme emphasizes organizational results, not just individual performance.

Contractual arrangement

- Benchmark 3: Transparent, effective and fair recruitment/placement systems are in place to support results-oriented contractual policies.

A specific requirement of RBM is for the system to more easily allow for ‘value for money’ to be demonstrated to sponsoring organisations, and as a result RBM includes a substantial data collection, collation and reporting element. A 2004 JUI reports states:

To be effective, a performance information system needs to be supported by a reliable telecommunications infrastructure and a commitment by managers and staff concerned to supply it constantly with the required data and information.

The emphasis of RBM here appears to be on ‘feeding’ a system that reports information to others.

COMPARISON OF BALANCED SCORECARD AND RBM

RBM (as practiced in the United Nations) and Balanced Scorecard are each intended to help the managers of an organisation become better informed about the delivery of key organisational goals, such that they may use this information to drive interventions within the organisation that will ultimately lead to ‘improved organisational performance’ (however this is defined).

There are several elements that RBM and Balanced Scorecard have in common, although receiving different emphases under the two frameworks:

- Performance measurement: activities to collect data/information describing aspects of organisational performance.
- Performance reporting: activities to compile this data/information into a document (report), then distributing.
- Operational management: activities to achieve short-term, relatively well-defined goals – working to “do things right”.
- Strategic management: activities to achieve longer-term, less clearly defined goals – working to “do the right things”.
- Strategic control: activities to help the organisational centre to understand performance at the periphery – to enable intervention where required, and to inform strategy evolution.

For Balanced Scorecard, which evolved as a tool for managers to articulate to themselves their goals, the focus is on enabling and supporting better strategic control of their organisations (Goold & Quinn, 1990; Muralidharan, 1997). As to a large extent external evaluation of corporate performance was traditionally well handled by financial reporting (as it aligned well with the interests of key stakeholders), less effort was put into developing Balanced Scorecard as a tool for informing the external monitoring and evaluation of performance. Likewise, developments over time in the design and usage patterns for Balanced Scorecard emphasised improving speed of design and responsiveness to changes in the strategic environment, and the extent to which Balanced Scorecard information is useful to anticipate the need for future interventions.

By way of contrast, RBM has a very heavy emphasis on the role of internal and external monitoring and evaluation of performance (retrospectively) and in this respect the selection of measures – at least at the level of the organisation most visible to donors – is dominated by the need to demonstrate achievement of the specific interests of the donor community. While the design process also emphasises the need for consensus building, this consensus is between the organisation and its sponsors, rather than within the organisation’s own management team. This can be a time-consuming process, and results in the selection of measures of performance that may not be useful at the operational level.

CASE MATERIAL

Given the independent origins and separate evolutionary paths of the two frameworks, and the differing characteristics of Balanced Scorecard and Results-Based Management user organisations, it is unsurprising that there are few reports of DO applying a Balanced Scorecard framework. The two cases presented next describe the authors' work to apply Balanced Scorecard and 'private sector' performance management principles in the development context. The first case examines the apparent benefits and notable risks associated with using Balanced Scorecard in a traditional government ministry. The second case looks at an RBM training programme within a large UN agency and the views of 'front-line' agency managers and technical staff on performance management generally.

Case Study One: Development Programme

The organisation is an influential government ministry in a Middle Eastern country, more specifically the programme management team of a \$100 m per year development programme run from within the ministry. The programme, the result of a merger between two complementary programmes, sought to build societal capacity by encouraging economic activity in the poorer parts of the country. Five sub-programmes sought to, for example, pay for irrigation dams and roads to tourist sites, train and enable entrepreneurs, build jam factories for village clusters, etc. Funded by the international community, donors received some reports on outcomes, usually favourable outcomes, but had little real understanding of overall programme performance – the result of an unclear programme strategy, little documentation, and a marginalised M&E team. The ministry's Secretary General recognised the problem and commissioned a project to strengthen M&E capabilities using Balanced Scorecard.

The project was communicated to programme management as centring on M&E, helping the function to select measures of programme performance, but nonetheless requiring significant input from the managers themselves. Three workshops were scheduled; all to be attended by the 12 programme and project managers, including the programme director plus the secretary general.

Preceded by interviews with key stakeholder groups, the first workshop allowed programme management to produce a draft Destination Statement for the programme – a detailed description of the programme and its impact

on the country, in four years time. Post-workshop, managers reviewed and gave feedback on the draft. In a second workshop three weeks later, managers finalised the programme's destination before turning to short and medium term implications. Programme managers eventually reached consensus on the programme 'strategy': the handful of outcomes sought, outputs required, and projects to be planned and implemented in support. This consensus was documented through an activity–outcome SLM.

Managers then accepted to act as “owner-coordinators” for one or more of the strategic objectives agreed. Post-workshop, all programme managers worked to define their objectives and propose measures for each. In a third workshop, these objective definitions and measures were discussed, revised and agreed. Later in this third workshop, the programme management team together created integrated plans for each of the activity-type strategic objectives. At a final validation meeting with the responsible minister, the programme team presented their new programme strategy, plans, measures and reporting process, and committed to using the Balanced Scorecard to guide programme activities and report programme performance in future.

Programme managers stated that they had found the intensive design process to be highly useful. Applying the ‘third generation’ Balanced Scorecard methodology allowed managers to jointly make decisions as to the contents of the Balanced Scorecard, and so program strategy and responsibilities and accountabilities for programme results. The future users of the Balanced Scorecard debated, chose and defined their own objectives, measures, milestones.

The design process also helped to ‘level’ the hierarchy within the ministry. Junior managers were able to contribute to the dialogue in a manner not previously experienced, allowing their superior knowledge of specific aspects of the programme to inform the debate and so influence decisions about the future programme. Some managers observed that they had made ‘better’ decisions about programme strategy as a result.

Managers also welcomed the focused approach. Previously, project documentation (where existing) tended towards lengthy presentations, disguising key messages and commitments. Using the Balanced Scorecard methodology, the programme strategy was summarised in 23 pages: a Destination Statement, an SLM, plus a one-page definition for each SLM objective – purpose, activities required, accountabilities and responsibilities, risks and measures. Managers claimed a clearer and more shared understanding of the programme and their respective roles in delivering results.

The emphasis on clarity of purpose and transparency of performance appealed to young, junior programme managers. Highly talented and

motivated, these people strongly supported efforts to improve programme performance, to deliver better results. This same transparency was problematic for others. For example, a strategic objective that involves making criteria-based funding decisions, and measuring this, is unlikely to be supported by the senior manager opaquely disbursing millions of dollars. In public, the manager may agree to this strategic objective; in practice, his personal interests and the interests of the programme are likely to be misaligned. With sufficient authority, under insufficient oversight, senior managers can disrupt and derail the adoption of a PM framework, as eventually occurred in this case.

Case Study Two: UN Agency Results Based Management Training

Within one of the largest UN agencies, RBM implementation has meant new or revised procedures, events and documentation to:

- Apply the Logical Framework internally (i.e. not just for programmes) to define what results every part of the organisation will deliver in support of corporate and UN goals.
- Further apply the Logical Framework principles within each agency sub-unit (e.g. HQ function, regional office) to identify and plan tasks/activities at the team level.
- Link team tasks/activities to individual employee objectives for the period, in support of a revised, results-oriented employee appraisal system.
- Standardise the measures used within and between agencies, and teach all staff to use these measures.
- Establish and maintain technology-based systems to manage the large volume of result measures and information produced under RBM.
- Develop measurable project and programme plans (at national and regional levels, using the Logical Framework), aligned with measurable country office plans, aligned with measurable regional office plans, aligned with measurable functional plans, aligned with a measurable corporate plan.
- Develop aligned, bottom-up, 'results-based' budgets for this integrated set of programme, country, region, function and corporate plans.
- Report on performance (towards sought results) at these various levels on a regular basis.
- Review and act on performance reports, as part of a structured management process.

While some of these activities are encouraged but not yet mandated, the ambition is clear – with implications for the administrative burden facing staff under RBM. The above list of RBM activities excludes the core business of the agency: delivering programmes and responding to crises, for example.

During 2004, after some years of investigation and reflection, the RBM directorate of this UN agency began a campaign to communicate the principles of RBM into the wider organisation. The agency first developed and delivered one-day RBM briefing sessions for senior managers. Incorporating feedback from these sessions, and with the authors' support, the agency developed a set of one-, three-, five- and seven-days training programmes, tailored to different groups within the agency – general staff, programme managers, M&E staff and RBM 'focal points'.

As a first project activity, future trainees were telephone interviewed to understand their requirements of the courses. Two issues emerged: how to adhere to RBM processes and procedures, and how RBM would help them to deliver better results in the field. The first interest area proved difficult to address. Early in the design activities, it became apparent that training material production would be hindered by the lack of agency agreement on RBM, its purpose, processes, templates and definitions. These materials were thus developed using an iterative process, involving multiple agency stakeholders, to draft, review and revise the core materials and the RBM messages therein. The final set of pilot materials therefore represented a reasonable consensus view of what would be RBM in the agency.

The materials themselves covered four themes. The first examined 'universal' PM principles and sought to build understanding of why these could and should apply within the UN. Later training covered the documentation and mechanics of RBM (or cynically, 'how to comply with corporate RBM requirements'). A third theme was the use of PM system information (as distinct from planning and reporting). A final theme concerned their role as an RBM 'focal point' (or champion, educator, catalyst) back in the field.

Some HQ RBM managers resisted inclusion of the first and third themes, arguing that the training was intended to help local managers understand and meet new RBM planning and reporting requirements, and to convey these requirements to other staff. They argued that further themes would dilute this core message. Through several interesting (and often surreal) discussions with decision-makers and influencers in HQ, it was agreed that the training also needed to 'sell' the principles of PM and RBM, and show trainees how to use the system for local benefit, answering the question "how will RBM help me (to help the agency's beneficiaries)?"

A five-day version of the course was piloted in West Africa where the materials worked well. The course used a blend of theory, examples, syndicate working sessions and group problem solving. Examples were presented from outside of the UN, as well as from the agency itself to build understanding of 'universal' PM principles and how these could apply internally. Early working sessions involved small teams in activities to agree and document the strategic logic and measures for a non-agency project – building a new family home – using 'third generation' SLM techniques. This served to build the trainees' understanding of cause and effect principles, and the meaning of the word 'result'. Building on this, later working sessions introduced new RBM documentation (planning and reporting templates, guidance notes, etc.) and required the trainees to practice completing these templates for the agency-specific cases provided.

Next, the course covered how teams elsewhere use performance measurement and management information in support of better results – performance review meeting scheduling and sequencing, annual calendars, review meeting design and delivery, potential areas of resistance and possible responses, for example. Applying this learning, the trainees identified what they themselves could do to strengthen the 'performance' element of RBM in their countries (as distinct from the compliance element of RBM). Much of this involved planning to get the right people into the right few meetings to build good plans and to discuss good information on plan delivery, in the expectation that this would lead to better decisions and, ultimately, better results for beneficiaries. Trainees shared ideas on how to increase engagement from diverse colleagues around a shared set of goals for the country office 'leadership team', as distinct from project and program goals.

On the final day of training, four groups of trainees each designed and delivered a 30 minute presentation on RBM, intended for their colleagues back in their post/home countries; they did this with clarity and conviction. Subsequent to the pilot training, and via the West Africa 'RBM network' established through the course, trainees have reported enthusiastically from the field on RBM communications and staff receptivity.

The UN attracts some of the most talented people in the developing countries in which it operates. More impressive than their capabilities, in the authors' opinion, was their commitment to the agency's goals, in excess of that observed in the private sector or national public sector. Compatible with Maslov's hierarchy of needs, UN staff members' need to 'make a difference', in support of 'self-actualisation', appears to be a powerful force for improved UN results. Further, the practical and pragmatic management

style (or 'results-orientation') of front line staff, in notable contrast to the technocratic and bureaucratic management style of HQ, is highly encouraging. If improving results is the primary purpose of RBM then RBM, as applied in practice, will support these front line qualities. If RBM is mandated to be different from this, it seems likely that UN staff will enthusiastically apply the elements of RBM that actually help them deliver results, and will comply with the rest of RBM as they are able.

DISCUSSION

The authors note that the two frameworks are converging, both in content and application. Both RBM and Balanced Scorecard seek to align the organisation behind a clear set of strategic goals; both use cause and effect mapping as an aid to strategy articulation and activity planning; both rely on non-financial performance measurement and reporting. This convergence has made it practical for Balanced Scorecard methodologies to be applied within DOs, typically users of RBM-oriented frameworks. Two cases have been presented on this topic, one examining the design of 'third generation' Balanced Scorecard components within a development ministry, the other looking at RBM communications and training within a UN agency. In both cases, performance management principles associated with modern Balance Scorecard were seen to have utility by DO managers.

Although the frameworks appear to be converging, different aspect of performance management receive different emphases within organisations practicing RBM or Balanced Scorecard, largely attributable to the motivations of the stakeholder groups important to these organisations.

In the private sector, performance is reported externally using pre-existing financial management systems. Control of organisational sub-units by the centre is also mostly exercised through existing financial systems. The most powerful stakeholder group, shareholders, ultimately seeks financial performance and so needs to see financial information primarily. Subsidiary, non-financial measures of performance may be interesting or even helpful, but the organisation's top-level goal has a financial measure attached. All major parties want the firm to succeed financially – the interests of shareholders, managers and employees are usually well aligned. Managers and employees generally see performance management systems as helpful in supporting the achievement of these widely shared financial goals.

In the development context, top-level goals are not financial in nature and so can be more difficult to agree and define. Managers in DOs try to

understand the ‘strategic’ outcomes (and associated non-financial measures and targets) sought by their most powerful stakeholder, donors. Then they try to deliver these outcomes, presumably to increase the likelihood of future funding.

Within the UN, this is new. Previously managers were measured against budgetary requirements, not hard-to-demonstrate outcomes and impacts directly attributable to the agency’s activities. Although these activities were well understood through M&E, outcomes were less well reported. Under RBM, senior managers must report on what donors are newly interested in seeing – measurable results – to feel confident of the agency’s future. Senior managers intend to use comparable, aggregated performance information to exercise ‘control’ over a far-flung agency, in support of measurable results and further funding.

At the employee level, private sector workers know full well that their livelihoods are ultimately dependent on the firm’s ability to generate hard financial results (regardless of whether a PM framework is used). In UN agencies, employees have traditionally operated in a ‘performance neutral’ environment, explained by the “unique” and “universal” (e.g. political) nature of the UN. Under RBM, career prospects will be informed by measured performance at the individual and agency levels. For some UN managers, effective RBM-based performance reporting is likely to be seen as a risk to their livelihoods. In these cases, managers’ interests are not aligned with those of donors.

Further misalignment can occur at the front lines of agency operations. For these UN managers and employees, the high-level outcome information required by donors (and agreed by the agency executive) is often not useful. Their informational needs generally concern performance towards the completion of planned activities and the delivery of outputs. These people focus on the delivery of well-planned programmes, practicing ‘operational management’. Applying limited resource to the collection of information needed by headquarters and donors, but not used locally, will be seen as a task to ‘comply’ with, bringing risks to the quality of the information entered at the front lines.

Overall, potential misalignment between RBM stakeholders towards performance management is more pronounced than in organisations using Balanced Scorecard, either public or private sector. The purpose and implications of RBM are likely to be seen quite differently by the key stakeholders, bringing potential problems with the planned ‘deepening’ of RBM within UN agencies over the years ahead.

CONCLUSIONS

The two frameworks examined in this paper, Balanced Scorecard and RBM, are converging. Both are now concerned with understanding the relationships between organisational activities and sought outcomes. Both use non-financial measures of performance. Both seek to inform and improve management decision-making in support of results. Modern Balanced Scorecard is now also used as a strategic planning framework, beyond its original focus on performance measurement and management, while RBM is concerned with organisation-wide performance management, beyond an historical focus on programme planning and reporting.

From the PM practitioner's perspective, convergence is a welcome development, hinting at the existence of 'universal' performance management principles. If true, effective application of these principles would constitute 'best practice' in such areas as strategic goal articulation, stakeholder consensus building, goal ownership, strategic mapping, non-financial performance assessment and the use of performance information as an aid to decision-making.

The two presented cases demonstrate the applicability within development organisations of principles and methodologies associated with modern Balanced Scorecard, and the potential value of doing so. Using a 'third-generation' Balanced Scorecard design methodology, a traditional programme management team efficiently agreed, documented and validated program strategy and associated measures of performance. Within a UN agency, front-line managers focused on how to use RBM information to improve in their own operations, using RBM as the reason for teams to meet, discuss and make decisions about the local strategy and its delivery in support of results.

It is early in the RBM implementation process within UN agencies. As currently envisioned, RBM will be a broad management framework, impacting all management processes and placing new demands on staff. As seen in many organisations using various different PM frameworks, staff engagement is a prerequisite to effective adoption and continued usage. RBM will need to be relevant and helpful to staff on the front lines if it is to enable better results. More and better reporting into HQ and thence to donors will not. Staff engagement with performance management generally, and RBM specifically, can be increased through the application of simple tools developed and refined under other frameworks. Within UN agencies, this is likely to focus on aligning the informational

needs of donors and staff, and promoting team responsibility for achieving agreed results.

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PERFORMANCE MEASUREMENT IN UNIVERSITIES: THE CASE OF KNOWLEDGE BALANCE SHEETS ANALYZED FROM A NEW INSTITUTIONALIST PERSPECTIVE

Martin Piber and Gotthard Pietsch

ABSTRACT

This paper studies the structures of performance measurement shaping the use of 'knowledge balance sheets' in Austrian universities. These structures are analyzed from the view of sociological new institutionalism. From this point of view, formal organizational structures conform to widespread rationalized myths of the social environment in order to ensure legitimacy and are therefore subjected to an extensive process of isomorphic change. Accordingly, the formal structures of knowledge balance sheets can be similarly seen as influenced by the requirements of organizational legitimation. There is much evidence that the concept of knowledge balance sheets in Austrian universities is affected by specific rationalized myths expressing an isomorphic change in the social environment.

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1. INTRODUCTION

Taken over from private enterprises, management accounting and performance measurement practices are important features of public sector reforms. In the last decades, performance measurement practices diffused in different areas of the public sector. With the new law for universities in Austria “*Universitätsgesetz 2002*” (UG), a new focus on performance measurement arrived in Austrian universities too. The UG makes Austrian universities legally independent from the state, but they are still held accountable for their performance. Not surprisingly, performance measurement techniques shape the basic elements of the new legal framework for management control and organization of universities. Together with performance previews, internal and external evaluations, contractually fixed performance agreements, the UG prescribes the annual creation of a compulsory knowledge balance sheet (KBS).

The KBS can be interpreted as a specific management tool following a multi-dimensional approach of performance measurement, which is mainly based on non-financial indicators. The usefulness of KBS is mostly analyzed from a technical perspective closely related to the debates on knowledge management and intellectual capital (Stewart, 1997; Lev, 2001; Choo & Bontis, 2002; Habersam & Piber, 2003). But this still very important discussion does not consider the specific institutional aspects of KBS in Austrian universities in an adequate manner. The institutional aspects of performance measurement tools in universities (like KBS) are caused by social expectations of the organizational environment and requirements of legitimation. They frequently prove to be contradictory to technical efficiency. The importance of an examination of those institutional aspects of KBS shows the need for a wider analytical perspective, which incorporates findings of organizational theory.

In this paper, we interpret KBS in Austrian universities from the view of sociological new institutionalism. On the basis of the perspective of this specific organizational theory, we will show that the implementation of KBS in Austrian universities is directed to organizational legitimation and therefore strongly influenced by rationalized myths of the social environment and mechanisms of isomorphic change.

Initially, we will sketch the basic ideas of the new institutionalism perspective. Thereby, we emphasize the influences of societal rationalized myths on organizational structures and performance measurement systems constituting far-reaching isomorphic processes in the relevant organizational field of universities. Then, legal foundations and basic properties of KBS in

Austrian universities are described. Finally, we interpret the properties of KBS in Austrian universities with reference to the basic assumptions of the sociological new institutionalism and draw conclusions on the legitimating function of performance measurement leading to processes of isomorphic change in the organizational field of universities.

2. THE PERSPECTIVE OF NEW INSTITUTIONALISM IN SOCIOLOGY

2.1. Formal Organizations and their Social Environment

Different theoretical approaches use the label “new institutionalism” to characterize their work. They are frequently connected with the main perspectives of different scientific disciplines (e.g. DiMaggio & Powell, 1991, p. 1; Scott, 1994, p. 55; Scott, 2001, pp. 28–45). For instance, we meet the economic and the sociological new institutionalism in literature. They are separated from each other by basic assumptions such as “methodical individualism” versus “methodical collectivism” or “homo oeconomicus” versus “homo sociologicus”. Apart from the question of how to combine the different theories, this paper takes reference to the specific sociological perspective of new institutionalism. The sociological perspective is very helpful to analyze the legitimating effects of performance measurement systems (e.g. Meyer, 1994; Carruthers, 1995; Brignall & Modell, 2000; Modell, 2004). For the purpose of this paper, we look at the social legitimation achieved by the implementation of KBSs in Austrian universities.

The new institutionalism in sociology has its seeds in the American organizational sociology and established a distinctive theoretical and empirical field of research in the early 1980s (Walgenbach, 2002, p. 157). This new institutionalist perspective gives attention to “the properties of supra-individual units of analysis” (DiMaggio & Powell, 1991, p. 8) and especially to formal organizational structures. Those collective structures are interpreted as discrete social phenomena and not simply seen as the sum of individual choices (Carruthers, 1995, pp. 313–314). In this sense, individual and organizational actions are formed by something like Durkheim’s “collective consciousness” (Durkheim, 2001) and refer to taken-for-granted expectations of the social environment. These taken-for-granted expectations give organizations a largely similar configuration.

So the far-reaching homogeneity of organizational structures in modern societies is the starting point for the new institutionalism analysis. This

homogeneity of formal organizations draws the attention to the influences of common properties of the social environment, especially the so-called “institutionalized rules” (Meyer & Rowan, 1991, p. 41). So the basic assumption is that institutionalized rules of the social environment shape formal organizational structures and that this ensures the latter’s legitimacy. But the terms of “institutionalized rules” respectively “institutions” are far from well-defined (Peters, 1999, p. 97). Nevertheless, some remarks on “institutionalized rules” can be made (Scott, 1994). In specific social situations institutionalized rules determine “what has meaning and what actions are possible” (Zucker, 1983, p. 2). In this sense, they limit the space of social possibilities and expectations in specific social contexts. Shaping the routines and conventions of daily social life, they are cognitively and culturally internalized as well (DiMaggio, 1997). Therefore, individual and collective actors mostly take them for granted and are frequently not aware of them. It is this taken-for-granted character of institutionalized rules that provides the basis for the emergence of social patterns respectively “institutions”. “An institution is then a social pattern that reveals a particular reproduction process” (Jepperson, 1991, p. 145). Referring to the underlying institutionalized rule, individual or collective agents associate certain actions with certain social situations and reproduce the appropriate social pattern (respectively the “institution”) by involuntary routine or conscious decision. Depending on the degree of universality an institutionalized rule is relative to more or less specific social situations. In this sense, institutionalized rules are “relative fixtures in a social environment” (Jepperson, 1991, p. 147).

So the new institutionalism approach in sociology analyzes organizations against the background of the social environment, which is differentiated into a technical and a symbolic context (Meyer & Rowan, 1991, p. 54). Nevertheless, these environmental contexts intermingle in empirical settings because they can be only analytically separated from each other. The technical context affects the material processes of production and transaction. It confronts organizations with requirements of technical efficiency (Scott, 1992, p. 132). On the other hand, the symbolic context incorporates the structure of social meanings and socially formed patterns of perception. This environmental context demands the conformity with basic societal notions and values. Organizations and their organizational subunits are confronted differently with these environmental contexts (Meyer & Rowan, 1991, p. 354; Scott, 1991, p. 168). For example, those organizational subunits that are directly concerned with the material activities of sourcing, production and distribution of goods and services become widely integrated in the technical context. In contrast to that, organizational subunits such as

the departments of accounting, finance, human resource management, or information management are acting in the symbolic context predominantly.

2.2. Rationalized Myths and Organizational Legitimation

Due to the considerable effects of the symbolic context on organizational structures, the sociological new institutionalism is very sceptical about organizational paradigms of rational management (DiMaggio & Powell, 1991, p. 8–9; Meyer, 1992; Carruthers, 1995, p. 314). Meyer and Rowan (1991) already remarked provokingly that organizations adopt rationalized myths of the social environment and incorporate them ceremonially in their formal structures in order to achieve social legitimacy. Legitimacy proves to be crucial for the survival of organizations (Weber, 1985, pp. 122–124). Especially, the inflow of fundamental resources (funds, manpower, and so on) is mostly bound to the legitimacy of formal organizational structures and processes (DiMaggio & Powell, 1991; Johnson, 2004, p. 7). The new institutionalism states that organizations only get legitimated if they are perceived as being in accordance with particularly important institutionalized rules of the social environment (Meyer & Rowan, 1991). Especially, they have to follow basic socially constructed rationalized myths because the normative strength given by such societal notions of rationality generates high legitimating effects.

Societal notions of “rationality” postulate, at least implicitly, a regular connection between socially constructed values or rather goals (e.g. an increase in social welfare, the avoidance of staff cuts, stated goals of gender equalization) and means (e.g. the market price mechanism, dismissal protection rules, quotas of women) (Elšik, 1996, p. 336). Such notions of “rationality” can evolve into a rationalized myth. But a comprehensive and general analysis of rationalized myths has not yet been carried out. So the differentiation between “mythical” and “non-mythical” societal notions of “rationality” remains really difficult and always fallible (Walgenbach, 2002). The current state of knowledge makes it necessary to handle the notion of “rationalized myth” with care. However, a rationalized myth can be seen as a specific kind of an institutionalized rule. Four clues shall be given helping to identify a societal myth of rationality. By this set of clues, a particular societal notion of rationality can be analyzed with regard to the presence of an underlying institutionalized myth (Scherer & Pietsch, 2005):

- Rationalized myths refer to widespread social values and emphatically use semantics coming from those value systems. Often “moral obligations” are asserted (Meyer & Rowan, 1991).

- Just like other institutionalized rules, rationalized myths are taken for granted. The underlying postulates about connections between means and ends are hardly scrutinized critically (Scott, 1992, p. 118). The public and critical discussion about the assumptions of the myth is frequently responded by negative sanctions (Dowling & Pfeffer, 1975, p. 122).
- Institutionalized myths of rationality claim for universal validity and exclude any situational relativization (Elšik, 1996, p. 342). In order to ensure universal validity, the postulates of the myth remain vague and abstract. Especially, the assumptions for a successful application of the asserted connection between means and ends are not explained.
- The evaluation of rationalized myths is restricted to symbolic considerations, which leave many interpretations possible. So the empirical falsification of underlying assumptions remains very difficult and can be mostly avoided (Scott, 1992; Walgenbach, 1998, p. 276).

As rationalized myths are taken-for-granted and are widely protected against falsification, they frequently prove to be persistent, although the underlying assumptions sometimes may be actually not correct and helpful in practice. Therefore, societally rationalized formal structures exist independently of their impact on the organizational practices' actual efficacy. In order to achieve legitimacy, they demonstrate the conformity with basic societal expectations about rational management and send appropriate signals to the social environment (Zucker, 1987, p. 446; Powell, 1991, p. 190). So the need for legitimation gives formal organizational structures a symbolic character, which can be in contrary to requirements of technical efficiency. To some extent, formal structures serve as a facade of legitimation. But what actually happens in organizations frequently deviates from this legitimating facade. Then a separation of formal structure and organizational practices arises which Meyer and Rowan (1991, pp. 57–58) characterize as a “decoupling” of formal structures and activities in organizations.

2.3. Mechanisms of Isomorphic Change

Rationalized myths are commonly shared by most individual or collective actors in a social environment. As organizations direct their formal structures to those rationalized myths, the sociological new institutionalism is particularly interested in the analysis of widespread structural properties of organizations and the corresponding processes of homogenization. The sociological explanation for the frequently observed structural properties of organizations focuses on requirements of legitimation. If the established

formal structures show contradictions to requirements of technical efficiency, a decoupling of structures and activities usually comes along with it.

So the processes of organizational homogenization constitute a very important subject matter of the theoretical and empirical research of new institutionalism. DiMaggio and Powell designate them as processes of “isomorphism” respectively as “isomorphic organizational change” (1991, pp. 64, 70). In general, isomorphism is defined as “a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions” (DiMaggio & Powell, 1991, p. 66). In this sense, isomorphic organizational change can only be analyzed in relation to a specific social environment. So the latter has to be at least crudely defined. In order to designate and delineate important parts of the generally infinite social environment, DiMaggio and Powell (1991) use the term “organizational field”. An organizational field is identified by a set of relevant environmental conditions. Especially, it comprises organizations which mutually exert pressure of legitimation (Hasse & Krücken, 1999, p. 16). Nevertheless, the separation of an organizational field from other parts of the social environment remains vague and subjective (Walgenbach, 2002). General criteria are still missing that can be used to identify organizational fields particularly with regard to specific scientific topics.

Beyond the question of how to delineate organizational fields, DiMaggio and Powell (1991, pp. 67–74) distinguish analytically between three mechanisms of isomorphic change which they characterize as “coercive”, “mimetic”, and “normative”. Coercive isomorphism can be evoked by influential organizations which exert formal or informal pressure on other organizations. Primarily, coercive isomorphism is based on governmental regulations and law. For example, societal values (like equalization of women or minorities, environment protection) are picked up by law, leading to legal restrictions for organizations and a homogenization of organizational structures. Beyond these legal pressures, coercive isomorphism can be evoked by influential non-governmental organizations or cultural expectations. For instance, the recommendations of financial analysts or the decisions of investment managers can affect the strategies of stock corporations strongly and therefore have a high impact on their formal decisions and structures frequently.

Mimetic isomorphism takes place under high uncertainty conditions. Inscrutable effects of managerial decisions, missing problem-solving techniques, and conflicting social expectations make individual or collective actors feel insecure. In order to assure themselves, mutual observation between organizations becomes intensified and leads to processes of imitation. Especially, those structures of other organizations are adopted which are

perceived as successful. The imitation of seemingly successful formal structures keeps organizations grounded in their social environment. It enhances social support for organizational decisions and assures that there was nothing done wrong.

Finally, isomorphism is a result of normative pressure coming from professionalization tendencies especially. The influence of professionals or professional associations is based on the authority of expertise. Professionals and respectively their associations offer guidelines for adequate organizational structures and behaviour. For example, referring to their assumed expertise, management consulting firms provide conceptual support to cope with business challenges and bring these business concepts to market. But these conceptual guidelines simultaneously exert normative pressures on organizations to follow them, especially if they succeed on the market for consulting services.

2.4. Performance Measurement Systems as Legitimizing Formal Structures

From the new institutionalist point of view, performance measurement systems are shaped by institutionalized rules of the social environment as well as other formal organizational structures (Meyer & Zucker, 1989, p. 111; Brignall & Modell, 2000; Modell, 2004). They are confronted with the requirements of the technical and the symbolic context. Efficiency and the rational logic of means and ends correspond to the technical context of performance measurement while legitimacy and cultural norms are imposed by the symbolic context.

Usually, performance measurement is supposed to technically support management decisions navigate organizations to better outcomes and increased success. In this sense, performance measurement systems generate information about the achievement of organizational goals and contribute clues for selecting a successful further course of action or work as an incentive system. Thus, the technical perspective on performance measurement focuses on the information-input to management decisions or on behavioural control and considers methodical questions primarily.

But beyond these influences of the technical context, sometimes performance measurement has a predominantly symbolic character. This symbolic character is based on the signalling effects, which go along with the use of performance measurement systems in organizations. Especially, performance measurement signals both, inwards and outwards, the effort of management to control organizational structures and processes efficiently

and effectively. Referring to concepts like the Balanced Scorecard, modern performance measurement systems prefer a “multi-dimensional approach” (Modell, 2004, p. 39), which focuses not only on financial and accounting-based indicators and takes other quantitative, but non-monetary indicators into consideration additionally. Based on the deep understanding of causal relationships between the different indicators, this wider view of performance measurement on internal structures and processes is supposed to make a comprehensive control of the whole organization possible. Thereby, a strictly goal-directed and top-down-related connection between strategic objectives, operative goals, targets of employees and performance indicators is aspired. Therefore, modern performance measurement systems reanimate the rationalized myth of synoptic strategic management. This myth proclaims the possibility of a strictly goal-orientated, rational, and holistic concept of organizational control which strongly combines strategic planning and implementation with the operative management of day-to-day business and the performance evaluation of employees (Schreyögg, 1984, pp. 133–135).

Nevertheless, the controversial discussion about synoptic planning in scientific literature made clear that this myth does not really work in practice (Lindbloom, 1959; Braybrooke & Lindblom, 1963; Mintzberg, 1978; Quinn, 1980). But referring to this still vivid rationalized myth of synoptic control, the formal structures of multi-dimensional performance measurement systems in organizations send a strong legitimating signal to the social environment. Multi-dimensional performance measurement shows not only modernity, but also suggests a high degree of information transparency and the claim of management for a comprehensive leadership. Especially, the performance measurement system of big enterprises is observed and evaluated by many other actors and institutions in their organizational field. As, for example, management consulting firms, financial analysts, institutional investors, expert journals and conferences, management awards programs or, benchmarking practices can appear on this institutionalized setting and take part at the discussion or evaluation of performance measurement either in general or with regard to the particular measurement concept of one focal organization. Within this crudely described organizational field, the above-mentioned institutional phenomena (like the impacts of rationalized myths, decoupling, or isomorphism processes) can be observed with regard to the formal structures of performance measurement. In the course of an extensive isomorphism process, the multi-dimensional approach of performance measurement, originally developed in the private sector, begins to diffuse to public sector organizations (Brignall & Modell,

2000) as, for example, to public universities. In the following, we will analyze the formal structures of KBSs in Austrian universities from the new institutionalist point of view.

3. KNOWLEDGE BALANCE SHEETS IN AUSTRIAN UNIVERSITIES

3.1. *The New Law for the Organization of Universities*

In 2002, a new legal framework for the organization of Austrian universities was introduced. The new Austrian law (“Universitätsgesetz 2002”) changed the whole environment for universities and their relationship towards the state authorities. On the one hand, the universities have been formally released from direct control of the ministry. Now, they are institutions of public law. On the other hand, the full legal capability is linked with a multitude of consequences restricting the intended autonomy. As the state is still responsible for the funding of universities, specified rules have been determined for the allocation of budgets to universities. Furthermore, the law stipulates the use of some specified tools for the management control of universities (see §§ 11, 13 and 14 of the UG). These are mainly budgeting and performance measurement tools well known from the private sector. In detail, the law prescribes four main fields of management control.

- From the year 2007 onwards, the universities have to negotiate *performance agreements* with the ministry of education, science, and culture. These performance agreements are fixed in a contract between the ministry and the universities and refer to a planning period of three years. On the basis of these agreements and further information about the expected economic demand for university services, the fulfillment of societal or political targets is predicted and the university budgets are generated for each three years. Thereby, student’s evaluations have to be considered in the contract too. Afterwards, the achievement of the performance held down in the contract has to be documented and the economic respectively purposive use of means has to be explained by each university. In an aggregated form, the ministry reports the results to the National Assembly every three years.
- Moreover, the law postulates the establishment of a *quality- and evaluation system*, which ought to ensure the overall performance of each university. The quality- and evaluation system concerns all fields of university

activities. For special purposes external evaluations are compulsory. The performance of the scientific staff has to be evaluated at least every 5 years (§ 14, UG).

- Until April 30th of the second year of the 3-year-planning-period, the universities have to give a *performance-preview* for the third year. After all, the data from the first two years and the preview will be taken as a basis for the next 3-year-planning-period.
- Finally and for the purpose of this paper, the following point is most interesting: Until April 30th of every year, each university has to draw up a *KBS* for the previous year. Via the supervisory board of the university, it will be forwarded to the ministry.

Thereby, the construction of *KBS* in the university law is basically similar to the model of intellectual accounts of Mouritsen, Larsen, and Bukh (2001) Fig. 1.

The available resources are the starting point of the model (see Fig. 1 – left side). They are subdivided into the common classification of intellectual capital: Human, structural, and relational capital. Human capital concerns knowledge and other personified competences. Structural capital includes, for example, organizational features and routines or specific software applications. Finally, relational capital stands for the relationships with important stakeholders and the reputation of the organization in their

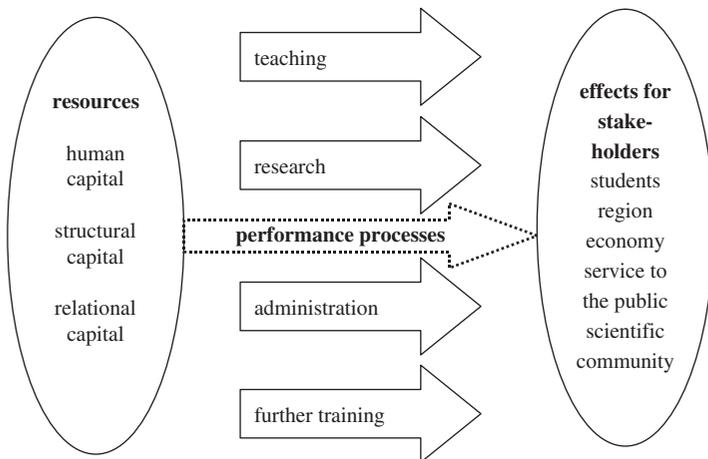


Fig. 1. Model of Intellectual Accounts for Universities. Source: Modified from Bukh et al. (2001), Mouritsen et al. (2001) and Leitner et al. (2001).

environmental field. In all three areas, the resources are made visible with an indicator model, which is completed with a narrative description of the main issues. In a further step of the model, the resources enter in the key processes of the university: teaching, research, administration, and further training (see Fig. 1 – centre). Finally, the results and effects for the most important stakeholders are shown (see Fig. 1 – right side).

3.2. The Practice of Knowledge Balance Sheets

Some university departments anticipated the prospective obligation with the creation of a voluntary KBS. In the front-running group have been the department of general management and tourism management at Innsbruck University (IUTD, 2004, 2005) and the department of economic and business management at the University of Leoben (Biedermann & Knoll, 2003; IWBW, 2004). Referring to the latter, Biedermann and Knoll see the development of a strategy and the outset of a learning process as the main targets of the KBS. “The knowledge balance sheet is an instrument for the holistic representation, valuation, and communication of intellectual capital, processes of performance and their effects” (Biedermann & Knoll, 2003, p. 6; see as well Leitner et al., 2001, p. 47). For the general management department in Innsbruck, the main target of the KBS is “[...] to create transparency of the knowledge as a basis for research and teaching activities as well as the efficient and effective use of the knowledge assets. Consequently, the KBS represents an important information tool in order to communicate the accomplished services to the public” (IUTD, 2004, p. 2).

Concerning the contents, the KBS of the department of general management at Innsbruck University refers to the understanding of intellectual capital already mentioned above (IUTD, 2004). The main parts of the KBS are the employees (human capital), the current budget for teaching, research, administration, IT, and literature (structural capital) and the external teaching staff (relational capital). These resources render assistance to the following key performance processes of the department: research, teaching, further training, general service, commercialising via spin-offs, and networking processes. The processes are relevant for the scientific community, the students, the faculty, the whole university, the ministry, the economy, and the public as stakeholders. Together with the key processes, the main effects are measured with indicators. Thereby, the number of publications, a publication-index, the number of lectures and seminars, the number of further trainings, other services, spin-offs, memberships, editorial boards, exchange programs, and other projects are presented. Finally, the focal points of the department as,

for example, the working areas of the employees, the publications, presentations, and other services are summarized in an overall list.

The KBS of the department of economic and business management at the University of Leoben starts in the first part with considerations concerning the strategy development and a SWOT-analysis (Biedermann & Knoll, 2003). In the second part, the intellectual capital, the output, and the effects for the stakeholders are presented with approximately 40 indicators. They are also adjusted towards employees, public funding, and external relations. The description of the output is similar to the KBS of the department of general management at Innsbruck University. In order to measure the impact of the performance of the key processes on different stakeholders, satisfaction indexes and the share of non-public funding are used. Additionally, the KBS includes a knowledge map with the capabilities available at the department. The KBS is seen as a constitutive element of the leadership process in the department. However, it is stated that the construction of the KBS is an ongoing process, which does not finish with the publication of the balance sheet. "Though we are convinced that this balance sheet gives a relatively clear and sufficiently sharp representation of the intellectual capital and the related 'intellectual' performance" (Biedermann & Knoll 2003, p. 15).

3.3. The Final Blueprint for Knowledge Balance Sheets (Draft for a Statutory Order)

On the basis of some tentative approaches for KBS including the presented cases of Innsbruck and Leoben, the Austrian ministry of education, science, and culture assigned a working group in order to elaborate a statutory order which will become operative at the end of 2005. Now, the work is completed and the group presented the following blueprint for KBS. In total, the KBS has to be subdivided into 5 parts (Ministry of Education, Science and Culture, 2005):

- I. Spheres of action, targets, and strategies
- II. Intellectual capital
 1. Human capital
 2. Structural capital
 3. Relational capital
- III. Key processes
 1. Teaching and further training
 2. Research and development

IV. Output and effects of the key processes

1. Teaching and further training
2. Research and development

V. Overview and outlook

Parts I and V have to be displayed in a narrative form, whereas parts II, III, and IV are only indicator based. In detail, the following performance measures are earmarked for the knowledge balance sheet (in extracts):

II.1. Human Capital

- Number of habilitations (granted licences for teaching)
- Number of appointments (full professors)
- Number of employees leaving the university in order to accept an appointment outside of the university
- Number of people visiting other foreign scientific institutions (for at least 5 days)
- Number of people incoming as visitors from other scientific institutions (only from abroad)
- Number of days spent for further trainings of staff

II.2. Structural Capital

- Financial investments for women-specific actions
- Number of people employed in specialized facilities (for example, in the area of e-learning)
- Number of people employed in facilities for students with special requirements (for example, in the area of disabled persons)
- Number of places for child care
- Costs for the offering of online-research databases
- Costs for the supply of scientific journals
- Special means for big research appliances
- Money raised from sponsors

II.3. Relational Capital

- Number of appointments in external commissions
- Number of contracts with other organizations
- Number of functions in scientific journals
- Number of functions in other scientific committees
- Number of borrowings in the libraries
- Number of special activities of the libraries

III.1. Key-Process: Teaching and Further Training

- Time spent in teaching activities
- Number of disciplines for studying
- Number of joint degrees and study programs with national and international institutions
- Number of contacts of students with facilities for students with special requirements
- Means for special teaching projects

III.2. Key-Process: Research and Development

- Number of employed persons for research and development activities
- Number of externally financed projects
- Number of internally financed projects which are externally evaluated
- Number of staff financed by junior-staff-promotion-programs
- Number of employed persons working in externally financed research and development projects

IV.2. Output and Effects of Key-Processes: Research and Development

- Number of scientific publications
- Number of presentations of invited speakers or selected presenters in scientific events
- Number of granted patents
- Money raised out of research projects for indicated public institutions

These 34 figures are compulsory for each university. However, the law leaves the possibility to add other figures, in order to visualize individual streams of performance.

4. KNOWLEDGE BALANCE SHEETS IN AUSTRIAN UNIVERSITIES: INTERPRETATIONS FROM A SOCIOLOGICAL NEW INSTITUTIONALIST POINT OF VIEW

4.1. Knowledge Balance Sheets under the Influence of Rationalized Myths

In 2005, the Austrian government funded the universities with €2.4 bn. Roughly, that amounts for 4% of the federal budget. With respect to

this dimension, a tight control system is desired in order to evaluate the accomplishment of the intended targets of the investment in the sector. In this context, the KBS particularly serves as an evaluative practice. The main target of universities is written down in the university law: “Universities are in charge of scientific research, teaching, the development, and unfolding of the fine arts. In doing so, they contribute responsibly to the solution of problems of mankind and to a prospering development of society and the environment” (§ 1 UG). The implicit end of the KBS-implementation is the indicator-based measurement of compliance with these targets and on this basis the further development of organizational decisions.

But from a new institutionalist point of view, the profound meaning of the implementation of KBS in universities lies in their legitimating function. Society imposes certain targets, values as well as other generalized expectations on all kinds of organizations. Organizations try to comply with these expectations in order to ensure future support from outside. As mentioned above, the conformity with societal notions about rationality respectively with expectations about rational management is of particular importance for the purpose of organizational legitimation. As this fulfilment of external expectations does not primarily contribute to the achievement of internal aims, legitimating rationalized myths seem to be influential. We will further discuss three social notions of rationality which exert considerable influences on the implementation of KBS in Austrian universities. These notions of rationality can be designated as

- (1) The ideas of synoptic control
- (2) The ideas of metric control
- (3) The ideas of internationalization

A closer examination of the draft for KBS shows the materialization of these notions of rationality. As mentioned above, the ideas of synoptic control are reanimated by the multi-dimensional performance measurement. They proclaim that a strictly goal-orientated, rational, and holistic concept of management is possible and successful. Accordingly, the KBS in Austrian universities picks up the multi-dimensional approach of performance measurement and is seen as a “holistic representation (...) of intellectual capital, processes of performance, and their effects” (Biedermann & Knoll, 2003, p. 6). In order to afford a wide overview over the whole university facilitating a comprehensive control, this indicator-based and holistic representation of university structures incorporates all research and teaching activities in the different departments of Austrian universities.

Moreover, the concept of KBS in Austrian universities relies on the ideas of metric control. So it supposes that the performance of all important organizational units and processes can be measured metrically and that organizations can be sufficiently controlled by figures. On the basis of the “facts” represented and created by “numbers”, metric measurement seems to offer an unequivocal decision support for the management of universities.

Finally looking at the compulsory indicators in the blueprint for KBS listed in paragraph 3.3, strong influences of the idea of internationalization become discernible. Indicators with respect to international activities (as, for example, the “number of people visiting foreign scientific institutions” or the “number of joint degrees and study programs with international institutions”) frequently appear in the blueprint for KBS. Thereby, the underlying assumption proclaims the general superiority of an internationalization strategy for the research and teaching activities in universities.

If the three notions of rationality (synoptic control, metric control, and internationalization) include the strength of a rationalized myth, they are of particular importance for the legitimation of universities. To validate this mythical strength of the three identified notions, the aforementioned constitutive elements can be applied (cf., paragraph 2.2).

- At first, all of the three notions of rationality refer to basic societal values. For synoptic control, there is the idea that university structures must be targeted to general social and political objectives and are not allowed to develop some deviating internal dynamics. The ideas of metric management refer to the value that organizational decisions can and have to be made objectively. It is supposed that striving for “objective” decisions needs informational support on the basis of numerical representations and mathematical operations. Likewise, the claim for internationalization refers to societal values of modernity, globalization, and intercultural understanding. Especially, it emphasizes that lack of internationalization is a synonym for failure and disappointment.
- Secondly, pointing out a further property of rationalized myths, the three notions of rationality incorporated in the KBS are usually treated as ‘taken-for-granted’. Especially, the ideas of synoptic control are regularly included in several managerial concepts of strong and comprehensive leadership (as, for example, already the concept of strong leadership in business reengineering; see [Hammer & Champy, 1993](#)). The myth of synoptic management signalizes, “everything is under control”, and refers to illusions of managerial omnipotence. Moreover, it is taken for granted

that management needs comprehensive numerical representations of complex organizational structures. Likewise, international activities and relationships are increasingly regarded as indispensable for all sorts of organizations.

- Thirdly, institutionalized myths claim for universal validity. With regard to the ideas of synoptic control, there is an established critique on this point in science for a lengthy period (starting with Lindbloom, 1959; see also Quinn, 1980). But because of the absence of other persuasive concepts of management control, the ideas of synoptic management are still very influential and widely spread in practice. Likewise, metric measurement and internationalization characterize almost all larger organizations in modern societies and are seen as universally favourable.
- Finally, referring to the last property of rationalized myths, the evaluation of the three notions of rationality does not really take place in practice. The notions of synoptic control, metric measurement or internationalization can hardly be transferred into a technical context in this way making an unequivocal critical examination possible. Most times, it is only a matter of subjective appreciations which must be rather related to the symbolic context of universities than to technical considerations.

Therefore, it can be stated that the three identified notions of rationality incorporated in the KBS have a pronounced mythical character, which generates high legitimating effects. Accordingly, the new institutionalist perspective makes clear that the new university law and the use of KBS focuses not only on the improvement of decision-making processes (which has not been analyzed here), but particularly offers a societal legitimation for universities too. The stipulated performance measurement practices are seen as rational management accounting techniques, which provide the management of universities with a widely accepted rationality. On a macro-level, the “rationality façade” founded by the implementation of KBS supports universities in the run for public funding and gives politicians arguments for further investments in scientific institutions. Additionally, the adoption of the ‘business rationality’ facilitates the ability of universities to attract private funding for research. On a micro-level, the reputation of university managers and the acceptance of their decisions is promoted by KBS. Metric measurement practices and synoptic models of management control are closely connected with a far-reaching claim to power. If the university-lawmakers as well as the management of the universities would not fulfill the societal expectations expressed by the three observed

rationalized myths, an impression of negligence, irrationality, or uselessness could arise (Elšik, 2004, p. 807).

4.2. Knowledge Balance Sheets Expressing Isomorphic Change

Moreover, the adoption of performance measurement practices in universities such as the KBS can be interpreted as an expression of a comprehensive isomorphic change in the organizational field of universities (and public institutions in general). Under the pressure of “modernization”, the efforts of public universities to cope with the changed social and economic expectations get under the influence of many collective actors in their social environment. For example, those influential collective actors are the national governments, supranational institutions, the general public, the associations of university professionals and students, consulting firms, expectations of the industry, or unions. On the background of these frequently contradictory social expectations of many involved actors, universities try to find a way through the confusion of different imaginations, interests, and thoughts about necessary reforms. In order to convince most critics, it seems reasonable for university managers to fall in some very widespread and general management tendencies in business and administration. Thereby, the implementation of KBS in Austrian universities gives a good example for the growing homogenization of formal organizational structures in modern societies which steps beyond the frontiers of different lines of business, nation-states, the private and the public sector. Following the new institutionalist perspective, we found all of the three mechanisms of isomorphic change in the process of establishing the KBS in Austrian universities:

- The appearance of coercive isomorphism is made clear by the new Austrian university law, which picks up performance measurement practices from private enterprises and stipulates them for universities.
- Moreover, mimetic isomorphism takes place. There is still much uncertainty about how to manage universities, how to measure their performance, and how to portray their internal structures. In the face of this uncertainty, it is supposed that the latest performance measurement techniques discussed and applied in the private sector could be helpful for universities too. Accordingly, the multi-dimensional approach of performance measurement gains attention and is imitated. One example for this kind of isomorphism in Austria is the market orientation of universities and the competition with other educational organizations. In certain areas,

the so-called ‘technical colleges’ compete more and more with universities. The battle for funds and ‘clients’ requires to communicate the practices of professional management to the media as well as to potential students. Polytechnics and technical colleges have been leading due to the use of Balanced Scorecards and KBS. Now the Universities follow in order not to ensure their established reputation of a high-quality education.

- Likewise, we observe normative isomorphism in the process of passing the new university law. The developers of the voluntary KBS at the universities of Innsbruck and Leoben decisively attended this process in the role of consultants, which simultaneously expresses the influences of professionalization too.

5. CONCLUSIONS

Herewith, the new institutionalist point of view makes an important contribution to the understanding of KBS and other performance measurement practices in universities. Referring to sociological new institutionalism, considerable clues for the impact of legitimating rationalized myths on the application of KBS in Austrian universities can be found. Moreover, the mechanisms of isomorphic change exert influences on the adopting process of KBS. Therefore, we arrive at the conclusion that the legitimating function is of primary importance, while minor significance seems to be attached to technical requirements.

This result may be a little bit provoking because technical aspects were not considered very much. However, the arguments are based on the theory of sociological new institutionalism and we can say at least that the informational support for decisions generated by KBS is not self-evident. The implicit end of the KBS is the indicator-based measurement of compliance with some social and political targets imposed to the public Austrian universities by law. The postulated correlations between the indicators in the KBS and the fulfilment of the overall targets may be on the one hand not implausible, but, on the other hand, they are absolutely not mandatory. Performance is a complex and ambiguous venture serving a multitude of stakeholders. Additionally, the performance of universities contains very complex properties especially with regard to the content of research and teaching, which cannot be measured in figures sufficiently. In order to avoid a mythical use of KBS, it has to be accompanied by a culture of communication and reflection, which frequently carries out a critical examination of the underlying measuring operations and notions of rationality.

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**PART V:
EFFECT OF COMPENSATION,
INCENTIVES, AND
ORGANIZATIONAL DESIGN IN
IMPROVING ORGANIZATIONAL
PERFORMANCE**

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EMPIRICAL RESEARCH ON PERFORMANCE-BASED COMPENSATION CONTRACTS

Jasmijn C. Bol

ABSTRACT

The objective of this paper is to provide a critical overview of the existing empirical research on performance-based compensation contracts. I examine the predictive power of agency theory by analyzing two necessary conditions (1) whether the incentives provided by performance-based compensation contracts influence the agents' behavior in predictable ways and (2) whether performance-based compensation contracts reflect agency concerns, focusing on pay-performance sensitivity, performance measures and performance standards. Finally, I examine the influence of subjectivity and CEO power on the design of performance-based compensation contracts. Although the empirical evidence seems to be in line with agency prediction, several econometric problems and a lack of detailed firm data limit its reliability.

1. INTRODUCTION

Finding ways of inducing agents to behave in a firm value-maximizing way is a general problem in modern firms characterized by the separation of

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ownership and control. The problem exists in every organization and at every management level. Considering the prevalence of this issue, it is not surprising that it has attracted considerable attention from the academic community. For several decades, researchers have sought to determine how to manage incentives in an optimal way. Performance-based compensation contracts have played a central role in this search; researchers have frequently addressed questions regarding both the structure of performance-based compensation contracts and the incentives that these contracts provide.

The purpose of this article is to provide a critical overview of the existing empirical research on performance-based compensation contracts. These empirical studies have generally used agency theory as a structuring framework. Agency theory provides a very useful framework for understanding compensation issues, enabling researchers to rigorously examine the link between information systems, incentives, and behavior. The question, however, is whether it is the attractive empirical features or the predictive powers of agency theory that have led so many researchers to use an agency framework to investigate incentive issues empirically. This article aims to critically analyze the predictive power of agency theory as applied to performance-based compensation contracts. To determine whether agency theory is predictive, I first investigate whether the underlying assumption that individuals respond to contracts that reward performance is correct. Next, I determine whether the design of various elements of the performance-based compensation contract is in line with agency predictions, focusing on pay-performance sensitivity, performance measures, and performance standards. Finally, I investigate whether agency theory remains predictive when introducing subjectivity and governance concerns. In general, the available empirical evidence seems to be supportive of agency theory, though the econometric problems and the lack of detailed firm data, limit its reliability (cf. *Indjejikian, 1999; Ittner & Larcker, 2001*).

Although this paper aims at examining the predictive power of agency theory, its purpose is not to provide a comprehensive overview of the extensive theoretical agency literature on compensation contracts.¹ Instead, I discuss some relevant theoretical agency studies in order to portray the line of reasoning used in the empirical studies.

The remainder of this article is organized as follows. After investigating the role of performance-based compensation contracts in Section II, I study the incentive effects of performance-based compensation contracts in Section III. Section IV, V, and VI examine whether performance-based compensation contracts reflect agency concerns, focusing, respectively, on pay-performance sensitivity, performance measures, and performance standards.

Subsequently, Section VII examines how performance-based compensation contracts incorporate subjectivity, while Section VIII focuses on how weak governance influences the design of compensation contracts. In Section IX, I draw my conclusions and suggest directions for future research.

2. COMPENSATION CONTRACTS

Agency theory explains how conflicting interests are brought into equilibrium. More specifically, principal–agent models portray the relationship between two parties, the principal and the agent, where the agent acts for, on behalf of or as a representative of the principal (Ross, 1973). An agency problem arises when the agent’s best interest is not consistent with that of the principal. When the agent is not motivated or forced to perform in a manner that maximizes the principal’s wealth, the agency problem will result in an efficiency loss. To mitigate these losses the principal will design a compensation contract² that reduces the agency problem by aligning the interest of the principal with that of the agent. The central assumption of principal–agent models is that individuals are solely motivated by self-interest. Moreover, classical principal–agent models (e.g. Holmstrom, 1979) also assume that the principal is risk neutral (as risk can be diversified), while the agent is risk and work averse.

The principal purpose of principal–agent models is to describe the ‘optimal contract’ under various conditions (Rees, 1985). The factor that is deemed most important in this process is the amount of information possessed by both parties. When it is possible for the principal to monitor the agent’s actions perfectly, no information asymmetry problem exists. In this case, employing a forcing contract that penalizes dysfunctional behavior can solve the agency problem. Risk sharing and effort levels will be optimal, while the only costs associated with the agency problem will be the monitoring costs: we speak of a first-best solution (Holmstrom, 1979). However, in most situations complete observation of the agent’s actions is either impossible or prohibitively expensive. In these situations, there will be information asymmetries between the parties: the agent will possess better or finer information with respect to his actions and/or the ‘state of nature’. Consequently, the principal will not use a forcing contract that penalizes undesired behavior, but will instead write a compensation contract that links the agent’s rewards to his performance. This contract will motivate the agent to increase his performance, as increased performance will raise his remuneration.

Thus, according to agency predictions, we should observe performance-based compensation contracts in situations characterized by information asymmetry. Several researchers have studied the most typical agency relationship, the relationship between executives and shareholders, and have indeed observed a link between performance and pay (Ittner & Larcker, 1998; Larcker, 1983; Murphy, 1999; Smith & Watts, 1982; Stathopoulos, Espenlaub, & Walker, 2004). Murphy (1999), for example, finds that executive compensation packages typically contain, next to a base salary, three components that are linked to performance: annual bonuses tied to accounting measures, stock options, and long-term incentive plans (based on market and accounting measures). However, the fact that performance-based contracts are empirically observed does not necessarily mean that they are designed in order to mitigate agency problems. Smith and Watts (1982) investigate whether an alternative reason, reduced tax liability, can explain the use of pay-for-performance in executive compensation contracts. They show that tax effects can explain some of the popularity of performance-based compensation contracts, but that the encountered variation in the use of these contracts across firms, and the cross-sectional differences in the timing of changes within these contracts cannot be explained by tax benefits; they can, however, be explained by incentive effects.

Nonetheless, not all observed compensation arrangements are that consistent with classical agency predictions. First, in many occupations, performance-based compensation schemes are not used. Instead, firms pay equal salaries within job types (Baker, Jensen, & Murphy, 1988). Moreover, even in systems supposedly based on merit pay, there seem to be only very small differences between the pay actually awarded to top performers and the pay awarded to the other employees. Medoff and Abraham (1980), in a study of two U.S. companies, find that the difference in salary between the best-rated employee and the worst rated employee is only 7.8% in the first and 6.2% in the second company. Thus, unless these managers are particularly sensitive to relatively small differences in compensation, the compensation scheme does not represent a big incentive to the employees.

Psychologist and behaviorists, such as Deci and Ryan (1991), argue that the lack of performance-based compensation contracts can be explained by the fact that financial rewards destroy intrinsic motivation. Introducing pay-for-performance schemes would consequently only be counterproductive, as motivation will decline rather than increase. Some economists, like Kerr (1975), argue that financial incentives work too well. Firms may choose not to use pay-for-performance, as the benefits of increased incentives do not offset the costs of dealing with the problems caused by performance-based

compensation contracts. He states that, contrary to the assumption made by classical agency models, value-maximizing behavior is often too complicated to be gauged accurately by straightforward objective measures. If, despite these limitations, firms decided to link compensation to some imperfect performance measure, negative side effects should be expected. Other economists use principal–agent models to analyze why pay-for-performance is not as common as previously assumed. [Holmstrom and Milgrom \(1991\)](#), for example, argue that in some situations the principals will prefer to pay fixed wages, even when good, objective output measures are available for some of the agent’s activities. They show that in a multi-task environment where activities compete for the agent’s time and attention, it might not be desirable to provide incentives on quantifiable tasks when competing activities are difficult to measure. [Lazear \(1989\)](#) argues that in situations where cooperation is important, pay equality might be efficient as it reduces uncooperative behavior.

Hence, empirical observations and advancements in principal–agent theory show that the role of performance-based compensation contracts is more limited than classical principal–agent models lead us to believe. Several interesting research streams focus on determining the circumstances under which principals are likely to implement performance-based compensation contracts and the circumstances under which they are more likely to resort to fixed wages and bureaucratic rules (see, e.g., [Bol & Moers, 2006](#)). A thorough discussion of this research, however, lies beyond the scope of this paper: I will focus on determining the predictive power of agency theory³ in those situations where the principal has chosen to use performance-based compensation contracts for remuneration.

3. PERFORMANCE EFFECTS

For agency theory to be predictive regarding performance-based compensation contracts, agents must respond to incentives, and compensation contracts must be designed in accordance with agency theory ([Prendergast, 1999](#)). Just showing that agents react to incentives in a predictable way is not sufficient; a complete test of agency theory must include both elements. Unfortunately, most studies have focused either on the effect of incentives or on the design of the contract.

Studies that examined the association between changes in compensation contracts and changes in managerial behavior generally find that agents react to incentives in predictable ways. For example, [Larcker \(1983\)](#) shows

that firms that adopt a long-term performance-based contract for their CEO experience a significant growth in capital investments. This is consistent with his predictions that the adoption of a long-term compensation plan will increase the manager's time-horizon, and consequently the level of corporate investments. Wallace (1997) provides empirical evidence, which indicates that managers take the explicit capital charge into account when faced with a compensation contract based on residual income. Moreover, he shows that the residual income of the firms that adopted this compensation contract increased significantly. Healy (1985) shows that the behavioral effects of introducing a compensation contract are not necessarily positive. He provides empirical evidence suggesting that earnings-based bonus plans induce executives to select accounting procedures and accruals that maximize their bonus.

Empirical studies investigating whether performance-based compensation contracts increase performance also report some confirmative evidence, although the results are not conclusive. Enis (1993), for example, examines the introduction of performance-based compensation contracts in the motor carrier industry and finds significant positive performance effects. Banker, Potter, and Srinivasan (2000), using time-series data of 18 hotels, investigate how the incorporation of non-financial performance measures in a compensation contract that was previously based solely on financial measures, affects performance. Their empirical results indicate that both financial and non-financial performance improved after the revision of the compensation contract. Said, HassabElnaby, and Wier (2003) compare the performance of firms that use both financial and non-financial measures in their compensation contract to a matched control group that uses only financial performance measures. They find that firms using both measures have significantly higher current and future stock market returns, while the results for accounting performance measures are mixed. Ittner, Larcker, and Randall (2003) find mixed empirical results when examining whether a greater reliance on non-financial relative to financial performance measures has a positive effect on performance.

Inspired by the contingency argument that better alignment between contingency factors and performance measures will enhance performance (Hayes, 1977; Otley, 1980), Said, HassabElnaby, and Wier (2003) test whether performance consequences are more pronounced in firms that better match their use of non-financial performance measures to their firms' characteristics. They find that the relationship between non-financial measures and company performance is indeed contingent on the match. Ittner, Larcker, and Randall (2003) investigate whether performance is enhanced

when strategy and measurement are more closely aligned. They develop benchmark models to determine the appropriate degree of alignment, and find, contrary to predictions, that performance is more strongly associated with measurement systems that are more extensive and diverse than those of competitors. They also investigate several compensation techniques that claim to improve financial performance by providing a closer alignment between the performance measurement system and organizational objectives: The balanced scorecard, economic value measurement and causal business models (Eccles, 1991; Kaplan & Norton, 1996; Stewart, 1991). Despite repeated claims, their investigation did not show a positive relationship between the use of any of these techniques and economic performance.

Traditional agency theory states that the adoption of a performance-based compensation contract increases organizational performance by inducing employees to increase or to better allocate their effort. However, this is not the only way a performance-based compensation contract can enhance performance. Theoretical research shows that the implementation of a pay-for-performance scheme can also induce a selection effect: It will encourage the less-productive employees to leave the firm as their expected future wage under the performance-based contract is lower than their prior wage, while productive employees, are encouraged to stay on as their expected wage will be higher than before (Lazear, 1986; Milgrom & Roberts, 1992). Banker, Lee, Potter, and Srinivasan (2001) examine whether the continuing performance improvements encountered in a set of retail stores after the implementation of a performance-based compensation plan are due to the attraction and retention of more productive employees (selection effect) or/and to increased individual productivity driven by augmented effort (effort effect). They find, consistent with agency theory, that the sales productivity of employees that remained or joined was higher than the productivity of the employees that left the firm, and that the productivity of the remaining employees improved continually. Lazear (2000) investigates the effects of a piece rate in a firm that installs automobile glass and shows that output increase is caused by both a selection and an effort effect.

There seems to be sufficient empirical evidence that indicates that individuals indeed act in accordance with provided incentives. However, when considering the presented results, one ought to be aware of some caveats. The biggest difficulty facing most compensation studies is the 'self-selection' problem. The firms that have adopted a new compensation system do not form a random sample: they have voluntarily chosen to adopt the compensation plan. Consequently, it remains problematic to attribute the

encountered results directly to ‘incentive effects’. Any association between the adoption of a compensation plan and changes in managerial decisions (performance) could also be attributed to some other variable that is the causal determinant of the changes in both the compensation contract and the managerial behavior. For example, in Larcker’s 1983 study, performance plan adoption and investment activity increases might have been joint decisions by the board of directors reflecting coincidental changes in corporate strategy and executive compensation. Another problem underlying these empirical studies is the fact that researchers are often not able to discard alternative interpretations of the empirical results. It is critical to distinguish between incentive effects, which presumably result from increased motivation and diligence, and information effects. Incentive schemes do more than just motivate effort; they also establish objectives that explicitly indicate what is expected of employees and what is important. In that sense, incentives are similar to goal setting; the goal-setting literature is quite clear on the fact that setting specific and demanding goals, by itself, can have a powerful effect on performance (Latham & Locke, 1991). Moreover, pay-for-performance provides knowledge on results, with its own profound effects on behavior and motivation. Few studies have recognized these critical theoretical distinctions, and virtually none has attempted to examine them empirically.

4. PAY-PERFORMANCE SENSITIVITY

The principal–agent models show that the principal will use performance-based compensation contracts in order to motivate the self-interested agent to engage in desired actions. This, however, is only a second best solution, as linking pay to performance transfers risk from principal to agent. Since the principal is risk-neutral, while the agent is not, pay-for-performance leads to a deviation from efficient risk sharing. Pay-for-performance moves risk from principal to agent as outcome measures are imperfect indicators of the agent’s effort, that is, outcome measures provide some information about the agent’s effort but are contaminated by uncontrollable random events. Consequently, the agent can no longer be certain that he will be appropriately rewarded for the effort he provides. The principal will have to compensate the agent for the risk he bears, which makes incentive pay more costly. The optimal compensation contract is, therefore, contingent on the right trade-off between inducing the correct amount of unobservable effort and minimizing the amount of risk the agent is required to bear.

Principal-agent models have identified several factors that are relevant for the trade-off between risk and incentives. The first important element is the incremental profit created by additional effort. If increased effort is beneficial to the principal, he will be willing to pay more to motivate the agent. Second, the optimal balance will be subject to the agent's risk tolerance and responsiveness to incentives. Depending on these characteristics, the principal will have to compensate more or less for the imposed risk and provide more or less incentives to induce effort. Finally, the amount of risk transferred to the agent, and hence the trade-off, depends on the uncertainty of the outcome (the size and the variance of the uncontrollable random events) and on how informative the observed performance is about the agent's unobserved actions.

Baiman, Larcker, and Rajan (1995) empirically investigate the pay-for-performance sensitivity in business units. They argue that when a business unit is more important to the company, extra effort by the unit's manager will be more valuable and consequently the principal will use a more intensive pay-for-performance contract. As predicted, they find a positive relationship between compensation risk imposed on business unit managers and the relative importance of the business units. Using cross-sectional firm data, Aggarwal and Samwick (1999b) analyze the effect of performance variance on pay-for-performance sensitivity. They argue that risk-averse agents will demand higher compensation when their compensation is linked to outcomes that are more volatile. Consistent with this prediction, they find that firms with less volatile stock prices use pay-for-performance more extensively. Bloom and Milkovich (1998) show that business risk, measured as the variability in the company's income stream and the variability of the firm's stock returns, is negatively related to the use of pay-for-performance and positively to base pay.

This empirical evidence seems to indicate that both variance in outcome and relative importance of extra effort influence the sensitivity of pay-for-performance. Unfortunately, econometricians have been unable to measure the effects of the other two factors (the agent's risk tolerance and his responsiveness to incentives) on pay-for-performance sensitivity, due to measurement difficulties.

In a more recent theoretical piece on the trade-off between risk and incentives, Prendergast (2002) argues that the typical assumption of the classical principal-agent models that the principal knows which actions maximize firm value is not necessarily true. In many situations, the agent will have superior skill or information in making decisions. In these cases, unobservable actions cannot be the driving force underlying compensation

contracts, because, even if the principal could directly monitor the agent's actions, he would not know whether the actions were value maximizing. Consequently, the principal will prefer to delegate responsibility in order to let the more informed/qualified agent decide on the proper actions. To make sure the agent makes firm value-enhancing decisions; the principal will make intensive use of pay-for-performance. Prendergast (2002) does not dispute that uncertainty affects the pay-for-performance intensity through the price of imposed risk; it is, however, not the only influence of uncertainty. Uncertainty is likely to affect both compensation and the optimal distribution of actions, and this can confound the negative trade-off predicted by the classical principal-agent models.

A number of empirical studies find evidence in line with Prendergast's predictions. For example, Gaver and Gaver (1993) compare the compensation contracts of growth firms with those of non-growth firms and find that, although growth firms' performance is more volatile, they offer significantly higher numbers of stock options and pay significantly higher levels of cash compensation to their executives than non-growth firms. This is explained by the fact that without inside information and specialized knowledge it is difficult for the outside shareholders to value the different investment opportunities available to the firm. Using industry-level data, Smith and Watts (1992) also investigate the influence of facing more growth options (fewer assets in place) and likewise find that growth firms make more extensive use of incentive plans and pay higher total compensation. Holthausen, Larcker, and Sloan (1995) show that the CEOs of business units facing greater innovation opportunities receive higher levels of total compensation. However, they also find that more risky firms exhibit lower pay levels. Indjejikian and Nanda (2002) find, for both CEO and non-CEO executives, that a positive association exists between an executive's decision-making authority and his target bonus. Moreover, they show that the results of Smith and Watts (1992) and Gaver and Gaver (1993) also extend to group, division, and plant managers.

Although there seems to be a considerable volume of empirical studies that support the agency predictions, some severe problems merit attention. The main problem plaguing these studies is the fact that many variables are unobservable to the empirical investigator, and therefore omitted from the investigation (Demski & Sappington, 1999). For example, empirical researchers often fail to measure all dimensions of performance relevant to the agency relationship. Failure to take into account important performance variables might lead the empirical investigator to conclude falsely that the connection between pay and performance is low. In a similar way, interpretations can be

obscured by the fact that investigators often do not take the full compensation package offered to the agent into account. The financial compensation of most firms exists of various components, such as salary, bonus, stocks and stock options. Nevertheless, several studies (e.g. [Smith & Watts, 1992](#)) only include part of the elements of total compensation when determining the pay-for-performance sensitivity. Moreover, all studies ignore other non-financial dimensions of the reward and penalty structures that are used to motivate the agent (e.g. dismissal). The fact that several variables are omitted or imperfectly measured makes it difficult to interpret the measured relationship between pay and performance accurately. The conclusions reached by these investigations should therefore be deemed with caution.

Another problem that troubles compensation studies is the intertemporal nature of compensation. Most multi-period agency models suggest that compensation contracts have ‘memory’, meaning that compensation contracts do not solely provide incentives for one isolated period; the agent’s compensation in a specific period depends not only on the performance realization in that period but also on the realizations in prior periods. Consequently, incentive concerns from former periods might affect behavior substantially, making it even more complicated for the empirical researcher to identify all relevant dimensions.

5. PERFORMANCE MEASURES

Agency theory aims to provide insights into the design of optimal compensation contracts. Unfortunately, no recommendations about specific performance measures are provided. Nevertheless, the theory does provide a framework: more precisely, it specifies some properties of performance measures that are relevant in evaluating an agent’s performance. The most fundamental insight is given by the seminal paper of [Holmstrom \(1979\)](#), in which he introduces the informativeness principle. He shows that any additional information about the agent’s actions, even imperfect, can improve the welfare of both the principal and the agent (if obtained cheaply or without cost). Additional information is valuable because it allows for a more accurate assessment of the performance of the agent, which improves risk sharing without changing the provided incentives. This would imply that the payment of the agent is linked to certain performance measures (e.g. stock price, accounting income), not because shareholders necessarily desire higher performance on these specific aspects, but rather because these measures provide useful information on the agent’s actions.

Banker and Datar (1989) show that the relative weight assigned to each performance measure is determined by its sensitivity and precision (with sensitivity being the extent to which the expected value of a performance measure changes with the agent's actions, and precision being the lack of noise in the performance measure). When changes in the agent's actions have a greater marginal impact on the expected realization of one performance measure relative to another, or when one performance measure provides a more precise signal of the agent's chosen action, it is optimal to place greater weight on that measure when evaluating performance. Feltham and Xie (1994) highlight another very important aspect of performance measures: congruence. By the congruity of a performance measure, they refer to the degree of congruence between the impact of the agent's action on his performance measure and the impact of the agent's action on the principal's expected gross payoff. They show that in order to obtain the first-best solution a performance measure must be perfectly congruent and noiseless⁴ (or the agent must be risk neutral). Hence, an additional performance measure is valuable when it reduces the amount of noise and thereby the risk imposed on the agent and/or when the extra performance measure can be used to induce actions that are more congruent with the principal's gross payoff.

Several papers have based their empirical investigation on the insights provided by the analytical papers discussed above. For example, Lambert and Larcker (1987) examine whether differences in the relative weight assigned to accounting-based performance measures versus market-based performance measures are related to their sensitivity and noise. They find that the cash component of CEO compensation is relatively less sensitive to the accounting measure and more sensitive to the market measure when the noise in the accounting measure is relatively high to the noise in the market measure. Moreover, they conjecture that growth firms will put more weight on the market measure as it is a better measure of the agent's performance (more sensitive) when the consequences of the agent's current-period actions tend to occur in the future. They find that firms indeed place relatively more weight on market measure when the firm is experiencing high growth rates in assets and sales. This positive relationship between companies' growth opportunities and the use of market-based performance measures has also been confirmed by a variety of other papers, e.g. Smith and Watts (1992), Gaver and Gaver (1993), and Keating (1997).

Sloan (1993) also examines the cross-sectional variation in the sensitivity of CEO compensation to market- and accounting-based performance measures. He focuses especially on the question *why* earnings, that have been

shown to be costly (because of their sensitivity to managerial manipulation (Healy, 1985; Dechow & Sloan, 1991)) and noisy (because of their inability to reflect many economically relevant actions on a timely basis (Hongren, Foster, & Datar, 1997)), are so prevalent in performance-based compensation contracts. He argues that *one* of the reasons to make extensive use of earnings in compensation contracts is to shield the executive from market-wide fluctuations in equity values. By investigating the noise in earnings and stock returns, he provides empirical evidence which indicates that the inclusion of earnings-based performance measures in CEO compensation contracts indeed helps to shield CEO compensation from market-wide fluctuations in equity values. For additional evidence, Sloan generates cross-sectional predictions concerning the use of earnings in compensation contracts. He finds, as hypothesized, that the use of earnings in CEO compensation is higher when (a) the correlation between stock returns and market-wide returns (noise) is higher, (b) earnings are more highly associated with the firm-specific component of stock returns, and (c) the correlation between earnings and market-wide returns (noise) is weaker.

Performance measurement is not necessarily exclusively linked to the agent's own organizational level. Compensation contracts often use aggregated performance measures in order to motivate managers to internalize the company-wide consequences of their actions. Bushman, Indjejikian, and Smith (1995) investigate the relative incentive weight placed on own business unit versus company-wide performance measures in divisional managers' compensation contracts. They argue that firms characterized by greater intra-firm interdependencies will be more likely to use aggregate performance measures because the marginal impact of a business unit manager on aggregate profitability is greater and the noise in evaluating his performance is lower. As predicted, they find that the use of aggregate performance measures is positively related to the proxies for interdependencies. In a comparable study, using survey data, Keating (1997) finds that the impact of a manager on divisions other than his own, the size of the division relative to the rest of the firm and the correlation between changes in division earnings and changes in division value, are all positively associated with the use of aggregated performance measures.

Bushman, Indjejikian, and Smith (1996) investigate the role of individual performance evaluation measures⁵ in CEO compensation contracts. They argue that individual performance evaluation measures will be used more extensively when value-enhancing actions are imperfectly captured by the traditional performance measures, or when they exhibit better signal-to-noise behavior. They examine the CEO compensation contracts of

396 firms and find a positive association between the market-to-book value of equity (a proxy for growth opportunities), the length of product development cycles and product life cycles (proxies for information asymmetry) and the use of individual performance evaluation measures. Against expectations, they find few significant relationships between noise in accounting and market-based performance measures and the use of individual performance evaluation measures. In a similar vein, [Ittner, Larcker, and Rajan \(1997\)](#) investigate the relative weight placed on financial and non-financial measures in the annual CEO bonus plan of 317 firms. Their results are consistent with the agency prediction that the weight placed on a performance measure should be based on its relative informativeness regarding the agent's actions. More specifically, they find that greater weight is placed on non-financial performance when firms are closer to the prospector end of the strategy continuum, when they have adopted a total quality program or when they operate in a regulated industry. Although they predict that firms facing financial distress will put more weight on financial performance measures since short-term financial revival is essential, they find no statistical significant evidence to support this relationship. A subsequent study by [Said, HassabElnaby, and Wier \(2003\)](#), however, did find that distressed firms are less likely to use non-financial performance measures. Finally, [Ittner, Larcker, and Rajan](#) find some evidence indicating that the amount of noise in the financial performance measures can explain increased weight on non-financial performance measures.

Although some of the results of the studies discussed above seem to be consistent with stated hypotheses, they should not automatically be interpreted as a confirmation of agency predictions. As argued by [Core, Guay, and Verrecchia \(2003\)](#), to test the agency theory predictions, the dependent variable should be the change in *total* compensation, meaning annual total pay and changes in the CEOs equity portfolio value. Empirical studies typically limit their analysis to cash compensation or in some cases to annual total pay, none of them, however, takes the changes in the value of CEOs portfolio of equity-based holdings into account. [Core, Guay, and Verrecchia](#) show that the equity portfolio variances can indeed provide important incentives to CEOs that should not be overlooked. They find that for a large percentage of the 8,015 investigated CEOs the incentives provided by annual cash pay are less than 10% of the incentives provided by the CEOs equity portfolio. More importantly, they show that the relative weights on two performance measures do not remain a decreasing function of the relative variance in the performance measures when total compensation is substituted for cash compensation.

Another important aspect that must be considered when interpreting the results presented above is the high likelihood that some of the independent variables in the specified models are not exogenous but endogenously determined. Specifying variables as exogenous while they are endogenous will cause inconsistent structural equation coefficients, which evidently limits the reliability of the empirical results. Moreover, the fact that most studies did not know the explicit weights placed (*ex ante*) on specific performance measures, but instead had to rely on subjective assessments of their relative importance, also makes the results less reliable (a notable exception is the study by *Ittner, Larcker, and Rajan (1997)*). In addition, as in almost all empirical studies, we should question how well the proxies actually capture the underlying concepts.

6. PERFORMANCE STANDARDS

Performance standards have received considerably less attention in the accounting literature than pay-performance sensitivity and performance measures (*Murphy, 2001*). This is unfortunate as performance standards are essential to performance-based compensation contracts; the amount of compensation received depends directly on how actual performance compares to the pre-specified performance standard. Hence, the way firms set performance standards and the way these standards are revised over time greatly affect the agent's incentives to increase firm value. There are three ways to set 'objective' performance standards (i) based on the standards of past performance, (ii) based on the standards of peer performance, or (iii) based on the standards of time- and motion studies (only suitable for routine jobs) (*Milgrom & Roberts, 1992*).

Using compensation data of 177 firms in 1996–1997, *Murphy (2001)* provides descriptive statistics on how performance standards are set. He distinguishes between 'internally' determined performance standards (based on budget, past performance or set subjectively by superiors) and 'externally' determined standards (based on peer groups, timeless standards or the cost of capital). He shows that firms predominantly use internal standards; only 11% relies heavily on external performance standards, while 12% use a mixture of internal and external standards. Moreover, he shows that companies are more likely to choose external standards when past performance is a noisy estimate of contemporary performance.

When performance standards are based on past performance they are often 'ratcheted', meaning that superior performance in year t is rewarded

through higher bonus in year t , but penalized through higher performance standards in year $t + 1$. In this case, the agent will understand that his actions in this year will not only affect this year's bonus but also the likelihood of obtaining next year's bonus. Consequently, as shown by Weitzman (1980), to maximize personal utility, agents will reduce their productivity in earlier periods to avoid being held to higher, 'ratcheted', standards in the future.⁶ Moreover, as argued by Holthausen, Larcker, and Sloan (1995) agents facing 'ratcheted' performance standards will smooth reported performance by accelerating earnings when year-to-date performance is low, and by depressing earnings when year-to-date performance is high. Murphy (2001) investigates whether income smoothing is indeed more prevalent in firms that use internal standards. By investigating the timing of sales and costs, he is able to show that firms using internal standards are more likely to smooth earnings and have less variability in their year-to-year bonuses payout.

Leone and Rock (2002), on the other hand, state that ratcheting can also have positive incentive effects. They argue that by using 'ratcheted' standards, firms reward actions that result in permanent earnings increases (e.g. improved efficiency), while punishing actions that result in transitory earnings increases (e.g. reduced research and development expenditures). They provide empirical evidence that indicates that managers facing ratcheted standards, when faced with positive transitory earnings, use discretionary accruals to decrease income beyond the amount that would be optimal if standards were presumed to be fixed.

Indjejikian and Nanda (2002) investigate whether companies indeed fully adjust performance standards for executives' past performance. They argue that if performance standards fully reflect past performance, then the probability that an agent receives at least his target bonus should be independent of whether he received an above-target or below-target bonus in the prior year. They find that this probability is not independent; if an executive previously earned more than his target bonus, he has a 72% chance of earning more than his target bonus again in the current year, while if he previously earned less than his target bonus, he has only a 42% chance of earning more than his target bonus.

Leone and Rock (2002) find empirical evidence consistent with 'ratcheted' budgets. More specifically, they find that performance standards are increased to a much greater extent when actual performance exceeds budget than they are decreased when actual performance falls below the standard, thereby showing that the 'ratchet effect' is not necessarily symmetrical.

By using a direct implication of the informativeness principle, Holmstrom (1982) shows that relative performance evaluation (RPE) can reduce risk

exposure by filtering out some or all of the common risk. Whenever agents' performances are affected by a common shock, risk sharing can be improved by removing the common shock term from an agent's performance. Unfortunately, RPE also has a strong disadvantage; it can distort incentives. Agents might get motivated to take actions that reduce the average output of the reference group (e.g. sabotage, collusion) instead of improving their own performance.

Several studies investigate whether RPE is used frequently in CEO compensation contracts. CEO compensation seems to be a good candidate for RPE as the potential benefits of filtering out common uncertainty are high, the cost of measuring the performance of other firms is small (when using stock price), and opportunities for sabotage and collusion are relatively limited. However, against expectations, little empirical evidence on the use of RPE is reported. [Murphy \(1999\)](#) provides descriptive evidence that suggests that the explicit use of RPE in actual compensation contracts is rather limited; indexed stock options are almost never used, the payouts from restricted stocks are solely based on absolute returns and only a minority of firms utilize external peer-groups in determining performance standards. Several other studies have focused on the *implicit* relation between CEO cash compensation, company performance, and market and/or industry performance. For example, [Antle and Smith \(1986\)](#) investigate whether CEOs are compensated as if their performance were evaluated relative to peer-performance. They find weak support for the use of RPE in 16 out of 39 firms in the chemical, aerospace, and electronics industries. [Gibbons and Murphy \(1990\)](#) did find supportive empirical evidence for the RPE hypothesis. They show that executive compensation is adjusted for both industry and market effects. However, somewhat surprisingly, the adjustment for peer performance seems to be more closely linked to market than to industry performance. Moreover, their results only apply to stock price returns, while most firms base their bonus contract on accounting-based performance measures ([Janakiraman, Lambert, & Larcker, 1992](#)). [Barro and Barro \(1990\)](#) investigate the executive compensation contracts of 83 commercial banks and find that cash compensation is not modified for regional peer performance. Finally, [Janakiraman, Lambert, and Larcker \(1992\)](#) also find little support for the RPE hypothesis. They argue that the lack of empirical evidence might be explained by the fact that the model is not descriptive for CEOs; firms might not consider the peer group component of firm performance as noise that should be filtered out, as it is part of an executive's job to anticipate market conditions. [Aggarwal and Samwich \(1999a\)](#) argue that strategic interactions among firms may explain the lack of RPE.

Although performance standards are an essential part of performance-based compensation contracts, not many studies have been devoted to this subject. The lack of access to detailed performance data probably explains why empirical studies dealing with performance standards do not prevail, especially studies that examine explicit performance standards could greatly contribute to our understanding.

7. SUBJECTIVITY IN COMPENSATION CONTRACTS

Firms are often reluctant to link compensation to objective performance measures, as they are frequently non-congruent and noisy. Instead, companies prefer to use subjectivity; they leave the determination of compensation to the discretion of a supervisor. Subjectivity can be introduced into a performance-based compensation contract in three ways: (i) by allowing (ex post) flexibility in the weighting of objective performance measures, (ii) by using subjective performance measures, and/or (iii) by allowing ex post discretionary adjustments to the compensation based on factors other than the performance measures specified ex ante (Ittner, Larcker, & Meyer, 2003).

On the basis of their analytical models, Baker, Gibbons, and Murphy (1994) and Baiman and Rajan (1995) argue that including subjectivity in an objective performance-based compensation contract can be optimal in some circumstances. Subjectivity can improve incentive contracting because it allows firms to exploit non-contractible information that otherwise could not be included in the compensation contract. It can offer a more holistic view by including value-enhancing efforts that are not easily quantified, and by including additional information that arises during the contract period. Gibbs, Merchant, Van der Stede, and Vargus (2004) provide empirical evidence indicating that subjectivity is used to complement perceived weaknesses in objective performance measurement. They show that subjectivity is used in situations where objective performance measurement is noisy or where it fails to encourage investments or cooperation sufficiently. Moreover, they find that discretion is used to protect employees from downside risk in their remuneration.

Ittner, Larcker, and Meyer (2003) investigate a firm in which subjectivity was added to a balanced scorecard plan, but did not find positive effects. After the inclusion of subjectivity in the compensation process, branch managers started to complain about favoritism and increased uncertainty. This shows that, although subjective performance assessment can provide more efficient incentives, the mere fact that performance evaluation is subject

to the supervisor's discretion gives rise to a number of problems. Most importantly, subjectivity provides supervisors with the possibility to assess performance untruthfully, as the correctness of subjective performance appraisal cannot be verified by outsiders. If the supervisor is the residual claimant, additional compensation rewarded to the agent will decrease his own wealth, which will give him incentives to underreport performance to keep costs down. However, even if the supervisor is not the residual claimant, it is still rational for employees not to trust their performance appraisals, as the supervisor bears all monitoring costs while he receives little of the benefit from conducting more accurate evaluations (Baker et al., 1988). Instead of engaging in careful monitoring, the supervisor will be tempted to let his personal preferences determine the allocation of rewards. Knowing that the supervisor might use his power to reward preferred subordinates beyond their true performance, employees are tempted to engage in 'rent-seeking activities'.⁷ Another reason why supervisors might not assess performance entirely accurate is to avoid the real and psychological cost of communicating poor performance to employees with whom they have a personal relationship. Psychological research indicates that ratings used for administrative purposes, like incentive pay, are indeed more lenient (Jawahar & Williams, 1997). Moreover, supervisors tend to have a 'centrality bias', meaning that they insufficiently differentiate among subordinates, which leads to compressed performance ratings. Supervisors reckon that by providing uniform, overstated performance ratings, almost everybody will be happy, which minimizes the number of painful discussions. Moers (2005) empirically shows that subjectivity, caused either by subjective performance measures or by the use of multiple performance measures, is indeed positively related to performance evaluation bias. Using archival data of a Dutch industrial firm, he shows that the use of subjective performance measures and multiple performance measures leads to more compressed and more lenient performance ratings.

Performance evaluation bias can be very problematic for a firm. First, distortion and favoritism are costly to the organization as they corrupt the information used to make job assignment decisions. Second, the tendency of supervisors to distort subjective assessments might reduce the value of subjective appraisal as a means of providing incentives. If the relationship between effort and pay is clouded by other influences, employees might be less motivated to provide high effort levels. Instead, they are likely to waste their time and energy on 'rent-seeking activities', as this increases the likelihood of receiving good performance evaluations. Moreover, arbitrariness in performance appraisal also imposes extra risk on employees, for which they

must be compensated (Prendergast & Topel, 1996). Finally, corrupted performance ratings can make employees feel discriminated against and uniform performance ratings can make above-average performers feel disenchanted, prompting them to leave the firm. Hence, distorted rating can result in high turnover costs and loss of human capital (Prendergast & Topel, 1993). In order to avoid the problems associated with subjective performance assessment, firms often resort to the use of seniority and other bureaucratic rules for compensation and promotion decisions (Prendergast & Topel, 1996). These rules, however, do not provide a large amount of incentives, as rewards are not contingent on performance. Medoff and Abraham (1980), for example, show that when salaries are based on tenure, more experienced workers doing the same job are paid more, while they are not more productive (measured by their relative performance ratings) than their peers.

Another important issue is the fact that, although analytical models indicate that subjective weights on objective performance measures can be used to 'back out' unintended dysfunctional behavior, not much is known about how multiple performance measures are combined into an overall performance assessment when weights are not set explicitly *ex ante*. The limited empirical evidence that exists on the effects of using subjective weightings mainly deals with behavioral factors. For example, Lipe and Salterio (2000) argue that supervisors' cognitive limitations may prevent them from fully exploiting the information found in a diverse set of performance measures. They show that when superiors have discretion in weighting different performance measures, they appear (*ex post*) to disregard unique measures and overemphasize common measures. Ittner, Larcker, and Meyer (2003), provide empirical evidence on 'the outcome effect'; they show that supervisors put greater weight on financial outcome measures than on the drivers of financial results, even when the drivers are informative of the managers' actions.

Despite the fact that most compensation arrangements involve subjectivity, researchers have focused almost exclusively on performance assessment based on objective signals. Agency theory models have typically assumed that honest principals seek to control self-interested agents who will renege on pledges. As under these assumptions, subjectivity is not so likely to be problematic, it is not remarkable that theory development on subjectivity in compensation contracts is still in an early stage. The theoretical models do not yet portray the complexity of the contracting situation but are limited to linear relationships between one or two variables (Gibbs *et al.*, 2004). Not surprisingly, the empirical evidence on subjectivity is also almost entirely

lacking. Much more research, both empirical and theoretical, is needed to understand the role of subjectivity within performance-based compensation contracts.

8. CEO POWER

In the former sections, we assumed that some metaphorical principal optimally designed the compensation contract in order to motivate the agent to maximize firm value. This, however, is not necessarily the case. When governance is weak, the agent might have de facto control over the contracting process and use this power to facilitate sub-optimal contracting. Consistent with these claims, several compensation studies have provided empirical evidence that indicates that the compensation for powerful CEOs is significantly higher than predicted by standard economic determinants (e.g. firm size, financial performance, risk). For example, [Core, Holthausen, and Larcker \(1999\)](#), using survey-based compensation data, show that both board of director characteristics and ownership structure have a cross-sectional association with the level of CEO compensation. They find that the CEO compensation is a decreasing function of the CEO's ownership stake and the existence of an external blockholder who owns at least 5% of the equity. Moreover, compensation is likely to increase when the CEO is also the chairman of the board, when the board is composed of a greater percentage of outside directors, and when the outside directors are appointed by the CEO. Compensation was also shown to rise with variables likely to proxy for lack of board involvement: board size, the number of older outside directors, and the number of 'busy' directors. Finally, [Core, Holthausen, and Larcker](#) confirm the earlier finding of [Hallock \(1997\)](#) that interlocked firms pay higher compensation.

The empirical evidence suggests that weaker governance leads to higher CEO compensation. However, it is not likely that these rents are captured by simply raising base salary – although this would be the most efficient way. Simply raising base salary might make otherwise passive shareholders sit up and take notice, and consequently expose the CEO to reputational costs that may damage his human capital. Linking compensation to firm performance, on the other hand, can be a good way to increase compensation without drawing too much attention to it. Pay-for-performance provides the CEO with some slack, as shareholders are less likely to notice a large remuneration bill when the firm seems to be doing well, irrespectively of whether it is *real* performance increase.

Ittner, Larcker, and Rajan (1997) investigate whether powerful CEOs put more explicit weight on non-financial performance measures, in order to increase their compensation above the level justified by the firm's real performance. They predict that non-financial performance measures allow for additional rents, as they are easier to manipulate because they are not standard subject to verification. Contrary to their predictions, they did not find a statistically significant positive relationship, but a negative association between the use of non-financial measures and CEO power. Davila and Penalva (2004), in a similar vein, examine the implicit weight placed on accounting and market-based performance measures. They argue that weak governance allows the CEO to deviate from the optimal contract by increasing the weight on more controllable accounting performance measures. They find that the implicit weight on accounting performance measures indeed increases as governance quality deteriorates. Moreover, they show that weaker governance is associated with lower variability in CEO pay and with a higher proportion of the compensation being cash-based. Bertrand and Mullainathan (2001) show that powerful CEOs also extract additional rents by tying compensation to observable luck (luck being defined as changes in the firm's performance that are beyond CEO control). Since linking pay to uncontrollable factors does not provide better incentives but merely adds risk, agency theory predicts that CEOs should not be rewarded for observable luck (Holmstrom, 1979). Nevertheless, Bertrand and Mullainathan find that CEOs are rewarded for good performance due to events outside their control, while they are spared punishment for bad performance due to outside events. More importantly, they find that CEO compensation responds less to luck in better-governed firms than in firms with weak governance.

The empirical evidence on the relationship between corporate governance and CEO compensation is subject to two major concerns. A first concern that must be addressed is the possibility that the findings represent a spurious relationship. The apparent correlations between CEO compensation and the quality of corporate governance might not reflect a true direct relationship. Instead, CEO compensation and firm governance might be related to each other through a third factor that is not observed or not adequately controlled for. Secondly, these studies are plagued by endogeneity problems. Both firm governance and the structure of CEO compensation contracts are choice variables and thus endogenous (Demsetz & Lehn, 1985; Hermalin & Weisbach, 2003). Nevertheless, the maintained assumption in this literature is that the characteristics of the board of directors and the ownership structure of the company are exogenous to CEO

compensation, which means that the results are affected by simultaneous-equation bias. Notwithstanding these limitations, this empirical evidence indicates that the contract's design is influenced by the quality of the corporate governance. This is an important result, not only because it shows the importance of corporate governance, but also because it suggests that empirical studies that have investigated the design of compensation contracts and that have not controlled for CEO power are potentially biased.

9. CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

The empirical evidence reviewed in this article is broadly consistent with the basic insights of agency theory. However, although the literature is fairly mature, the evidence is far from conclusive and plagued by numerous econometric problems. The empirical studies have been greatly constrained by the lack of detailed compensation data. These data limitations make it often impossible for empirical researchers to identify all the relevant dimensions of performance, compensation, and actions, which can lead to various inference problems. Moreover, the studies have often omitted or inadequately controlled (weak proxies) for important influencing factors (e.g. CEO power) which might have biased the results. Finally, most empirical compensation studies have not addressed and discarded alternative theories. It is important that these limitations are not taken too lightly; studies such as the one by [Core, Guay, and Verrecchia \(2003\)](#) show that using a more complete measure for a key variable (using total compensation instead of just cash compensation) can change the direction of the results. Moreover, we should not forget that the published empirical research is severely biased against investigations that are not consistent with theory, which may explain why most research seems to be in line with agency theory. When results are inconsistent with agency theory, it is hard to tell whether these inconsistencies are caused by weak tests plagued by econometric problems or whether the theory is not capturing all the relevant features of compensation contracts. In sum, we can conclude that the available empirical evidence on performance-based compensation contracts does not yet provide a sound endorsement of agency theory: although much of the empirical evidence seems in line with agency predictions, the predictive power of agency theory is still questionable as many factors diminish the reliability of the empirical results.

We should not discount the accomplishments of the last decades, though: agency theory has clearly provided us with some important insights in how

incentives operate. Nevertheless, I believe we are still far from understanding all factors that influence the design of the optimal performance-based compensation contract, and consequently, we should be cautious when giving practical advice. In spite of the remaining uncertainties, some scholars have quickly embraced apparent solutions and promised definite performance improvements to practitioners. Recent empirical studies (e.g. [Ittner, Larcker, & Randall, 2003](#)) show that these claims were not always warranted. Moreover, empirical studies have highlighted problems, e.g. cognitive limitations ([Lipe & Salterio, 2000](#); [Ittner, Larcker, & Meyer, 2003](#)), that can play an important role in performance-based compensation contracts that were not previously recognized.

It is important that researchers endeavor to overcome the data problems that have limited the reliability of the compensation contract research. By using richer data sets, empirical studies can reduce the inference problems caused by omitted variables, imperfectly measured variables and weak proxies. Working with more explicit compensation data will also provide researchers with the opportunity to focus on issues that have been studied relatively rarely, such as performance standards and the role of subjectivity in performance-based compensation contracts. Moreover, since the overwhelming majority of the studies has examined performance-based compensation practices at the CEO or other senior executive level, more empirical evidence at lower organizational levels would probably make a significant contribution to this literature. Specifically, workers whose outputs and actions are hard to observe deserve more attention. Finally, to increase the reliability of the empirical results, researchers must try to address the econometric problems. For example, by using a simultaneous system of equations to test the theoretical models, some of the simultaneous equation bias could be alleviated ([Greene, 1993](#)). Moreover, by being innovative in discovering interesting data sets, researchers can try to find 'natural' controls. In relatively controlled settings, i.e., settings in which certain important exogenous variables (e.g. industry) and endogenous variables (e.g. decision-making authority) are constant, omitted variables and endogeneity will distort the empirical evidence less.

NOTES

1. For a recent overview of the theoretical agency literature see [Lambert \(2001\)](#).
2. 'Contract' is meant to be interpreted very broadly; it may refer to a formal document, to an implicit contract, or to some penalty-reward system. The majority

of the empirical studies discussed in this paper, however, have focused on explicit, formal contracts.

3. I will not limit myself to the classical principal–agent models. I will also include more extended versions where these models were used as the basis for empirical research.

4. They show that noiselessness is not a sufficient condition; although it can enhance first-best intensity, it does not necessarily induce first-best direction of actions.

5. Individual performance evaluation measures are financial or non-financial non-corporate performance measures that *may* involve discretion and subjectivity.

6. Dynamic agency models show that firms can benefit if a principal can commit in advance not to incorporate information about past performance when setting the performance standards for the sequential period. However, such commitments are hard to make credible as there are efficiency gains ex post to using past performance information to revise standards (Indjejikian & Nanda, 1999).

7. Actions that increase the likelihood of obtaining a better rating, but that have less value to the firm than alternative actions that could have been carried out (Milgrom, 1988).

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THE DESIGN AND CHANGE OF MANAGEMENT CONTROL SYSTEMS IN DYNAMIC ENVIRONMENTS: RESULTS FROM CASE STUDY RESEARCH

Thomas Pock and Anders Westlund

ABSTRACT

The paper describes qualitative examples for a contingency-based design of management control systems. The cases illustrate how strategic changes seem to have a significant impact on the way companies use their management control system. In line with prior results from a quantitative study (Anderson, Fornell, & Rust, 1997), the paper furthermore investigates how success positions of certain companies develop over time with respect to changing strategic priorities.

Generic success positions in the field of tension between productivity and customer satisfaction indicate that manufacturers are often able to successfully combine foci on both strategic dimensions, whereas service providers tend to be in the need to weigh an increased customer focus with drops of corporate productivity. This cluster of “analyzing differentiators” shows to have a specific need to determine and weigh the strongest

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operational and strategic levers of customer satisfaction in relation to competing cost drivers.

1. INTRODUCTION

Over the last years, interest in the topic of management control systems (MCS) has grown tremendously. The increased attention to performance evaluation and organizational control by managers and academics reflects the increased pressure organizations are confronted with (Hoque, 2004). The need for an appropriate fit between a company's situation and its MCS is an underlying assumption of much of the empirical contingency-style management control research (Chenhall & Langfield-Smith, 1998).

Case study research with three specific companies offered the opportunity to gain insights into the way MCS are designed effectively with respect to changing strategic priorities. The organizational literature states that improved business performance requires an organizational structure, information systems, and management style related to a specific firm strategy (Perera, Harrison, & Poole, 1997). According to this hypothesis, we find evidence showing how our case study objects design its MCS and the selection of corporate key performance indicators in order to receive support for their decision needs within changing environments, assisting them to monitor and manage progress, and performance against defined strategies.

In literature, questions furthermore arise whether changes in organizational environments and corresponding changes in strategic priorities also impact the effectiveness of the organizational design itself. Typically, we differentiate here between organic and mechanistic dimensions of management control. Energy Inc. as well as two selected other case studies additionally illustrate under what circumstances different forms of control as e.g., process orientation, fact-based management, social controls, or interactive management practices are applied (Simons, 2000). The qualitative cases provide information, which allow the formulation of certain patterns linking strategic priorities to specific forms of MCS.

In addition, we discuss how certain industries differ with their need to prioritize either on productivity or differentiation through quality or customer satisfaction. Here, we can expand Porter's strategic framework and define a group of companies who are in the need to analyze in what performance areas they are urged to differentiate their offerings to the customer. Specifically for this need, a model is introduced at the example of "Energy Inc.," which helps to operationalize and prioritize strategic targets.

In combination, we want to utilize the insights from the cases and related quantitative insights from [Anderson, Fornell, and Rust \(1997\)](#) in order to answer the following research questions.

Question 1. With what elements of management control systems can companies support certain business strategies or changes in strategic priorities?

We want to focus on the one hand on implications for efficiency related key performance indicators as well as effectiveness-related measures and drivers of customer loyalty, satisfaction, and financial performance. On the other, we want to, moreover, determine organizational initiatives, which were utilized in our case studies in order to support business strategies. These elements of MCS encompass here mechanistic as well as organic forms of control.

The second research question offers qualitative evidence supporting a quantitative study from [Fornell and Anderson](#). Here, we are illustrating success positions of industries over time in the field of tension between productivity and customer satisfaction (*In line with Porter's business strategy framework*).

Question 2. How do success positions of certain companies develop over time with respect to changing strategic priorities on productivity and customer satisfaction?

Last but not least, we illustrate results from action research. A tool is introduced which supports companies who are in a specific trade-off position between customer satisfaction and productivity increases. This tool was developed in cooperation with "Energy Inc." and helps this company to determine the appropriate level of customer focus or customer satisfaction for specific performance areas on strategic and operational levels.

1.1. Research Method

The research process followed the methodology of case study ([Yin, 1994](#); [Eisenhardt, 1989](#)) and action research ([Ellis & Kiely, 2000](#)), carrying out inductive inquiry and field studies over a period of 15 months for six renowned European companies and in detail for our three case studies elaborated with a major European energy provider, a European insurance company, and one case with two electronics manufacturers. During this period, we undertook a large number of interviews and workshops at senior executive management level.

- We pursued workshops with the focus on the design of performance management systems including organizational aspects as well as information-related aspects. Participants in these workshops were besides representatives from the three case study companies 5 European companies from different industries. The overall framework for these workshops was based on the dimensions outlined by [Simons \(2000\)](#), roughly differentiating between organic and mechanistic management control. Furthermore, the application of non-financial performance measures in addition to traditional accounting measures on operational as well as strategic levels was discussed.
- In addition, action research in cooperation with seven business units from our energy provider intended to elaborate ways to apply customer satisfaction as one means to measure relevant performance areas representing the perception of household and business customers. Aspects of high relevance were in this context the comparability, validity, and reliability of measures. Furthermore, the project intended to systematically link operational and strategic aspects of corporate performance. Relations between customer satisfaction and financial performance as well as ways to approach this aspect with solid empirical performance measurement models were elaborated in several workshops. The outcomes are described in later paragraphs.

1.2. Contingency-Based Research on MCS

The paper uses contingency-based management control theory to describe different corporate efforts to improve performance in a dynamic environment. Moreover, related case studies from other industries, pursued within the same research project, underscore the hypothesis that holistic MCS are crucial to ensure an appropriate implementation of selected or changing strategic priorities.

The importance of considering contextual variables for the design of effective MCS can be traced back to the original contingency frameworks developed within organizational theory. In the 1960s and 1970s, already [Burns and Stalker \(1961\)](#), [Perrow \(1970\)](#), [Thompson \(1967\)](#), [Lawrence and Lorsch \(1967\)](#), and [Galbraith \(1973\)](#) focused on the impact of aspects as environment, structure, size, and technology on the type of organizational structure. Contingency-based research on MCS has in common, that it draws on the original organizational theorists to develop arguments that help explain how the effectiveness of MCS depends on the nature of

contemporary settings. Recently, additional contextual variables were subject to increased attention. One of the most important streams of literature has been that related to the role of strategic priorities.

Different from other contingency variables, strategy is not directly an element of context. However, the role of strategy is important as it addresses the issue that contingency-based research assumes that an organization's MCS is determined by context and that managers are "captured" by their operating situation. Moreover, an organization's strategy can be seen as a response to its environment. Several empirical studies have found that successful firms aligned key elements of strategy with the environment.

Contingency-based research assumes that certain types of MCS will be more suited to particular strategic priorities (Chong & Chong, 1997). Generic taxonomies have been developed including a differentiation between prospectors, analyzers, and defenders (Miles & Snow, 1978), priorities on build, hold, or harvest strategies (Gupta & Govindarajan, 1984), and a trade-off between foci on product differentiation or cost leadership (Porter, 1980). Porter's framework is utilized as the reference for business strategies within this research.

2. INSIGHTS FROM CASE STUDIES

2.1. *Energy Inc.*

Our main case study is based on a firm that we refer to as Energy Inc. The company is currently one of the Europe's largest generators of electricity and among the largest producer of heat in the region. The corporate group amounted for sales of approximately EUR 12 billion. Within its operations in several northern Europe countries, the company employs 35,000 employees. The wholly state-owned company is active in all stages of the value chain in the energy industry: production, trade, transmission, distribution, and sales.

2.1.1. *The Market Development and Resulting Changes for Energy Inc.*

Starting in the 1990s, Energy Inc. transformed from a state-governed authority to a state-owned company. Reasons for this can be perceived in the desire to be seen as a highly transparent company. Additionally, the goal was to change the corporate image, moving away from the public perception of a state-authority toward a character of a market player.

Strategic targets on group level were during this period: international growth and the expansion of the business base. Looking at the hard facts of

the company, it in fact encountered a continued and very strong growth. Energy Inc. tripled in size and created advantageous market positions for a continued growth in Europe. Talking about essential reporting indicators on top management level, one can say that within these years, the main focus was on the number of businesses outside the core business of Energy Inc. and secondly, the total figure of customers. Growth was the key in the 1990s.

Similar to the home country of Energy Inc., other countries followed the trend to deregulate the energy markets in the 1990s and the following years. This again opened new market opportunities in the area of the core business of Energy Inc. Since the beginning of the extensive acquisition process in 1999, the company has focused on the completion of the business unit integration and the utilization of new synergies. Still though, the focus had to be even stronger on profitability to increase the equity-asset ratio in order to allow additional acquisitions. Therefore, the RONA figure remained a highly important key indicator for business unit performance and profitability. At the same time – talking about portfolio strategies – the company tried to sell non-profitable businesses as well as businesses outside the core portfolio. Now being well on the way toward achieving the defined RONA targets for most of its business units, new strategic ambitions are included in addition: differentiation strategies with a look on customer and employee satisfaction as well as a better handling of environmental aspects are now added to the strategic ambitions.

2.1.2. Strategic Development of Energy Inc.

Summing up the development of Energy Inc., we can identify three strategic priorities for our case study. We want to distinguish between a priority on growth, consolidation, and differentiation.

Certainly, not only the cost-leadership and differentiation strategy affect the process management and business management level. On the one hand, the growth strategy leads to an increased focus on profitability for each business unit. As a result from this, again productivity and cost reductions in key processes became a highly important issue throughout the organization. Taking the RONA-target as a result from Energy Inc.'s portfolio management strategy for its business units, we clearly see a strong impact on the business management level – i.e., a strong focus on cost efficiency in its operations (see Fig. 1).

The strategies we are focusing on in our research framework are – based on a selection of generic business strategies – the differentiation strategy (customer satisfaction through quality leadership) as well as the cost-leadership or productivity leadership strategy.

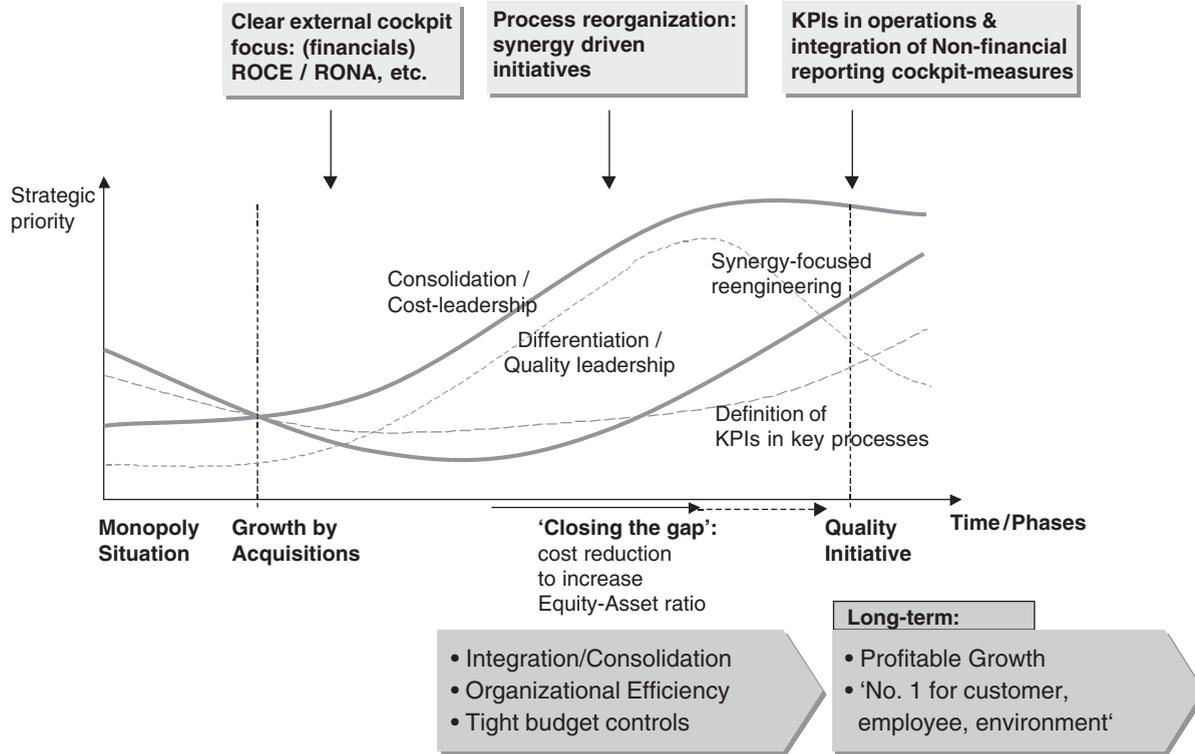


Fig. 1. Strategic Priorities of Energy Inc. Over Time.

2.1.3. Cost-Leadership Initiatives at Energy Inc.

Several measures were initiated and planned in order to improve the grip on the cost situation throughout the group. Efficiency in key processes and rationalization of unnecessary sub-tasks were core activities so far. The main benefits were achieved in business processes as purchasing and risk management but as well in support processes as IT. Especially considering the corporate growth by acquisitions, the standardization of these processes leads to further improvement potential: benchmarking and best practice comparisons of relatively similar processes across business units is possible and can lead to substantially improved performance. However, the primary target in the short run was to determine ways to streamline the grown organization in order to eliminate redundant parts within the organization. Through more efficient and leaner organizational structures, Energy Inc. directly managed to cut costs significantly.

In the long run, however, a stronger process orientation is necessary and desired by Energy Inc. in order to obtain more mechanistic – more standardized, quantifiable, and controllable – operations. Within this new framework, key performance indicators are intended to be identified for a large number of operations including

- generation (maintenance and production planning);
- heat (e.g., control of meters, waste to energy);
- distribution (e.g., operations centers, customer process and IT, workforce management); and
- sales (e.g., customer service, European customer management, SAP-implementation).

2.1.4. Differentiation Initiatives at Energy Inc.

Together with the cost-cutting priority, Energy Inc. developed further strategic ambitions in the direction of becoming a leading European energy company. Besides the focus on continued growth by acquisitions and the utilization of cross-border synergies, Energy Inc. added the goals to become:

- number one for the customer,
- number one for the environment, and
- the employer of choice.

In order to substantiate these goals in the organization, several projects were initiated. The objective was here to determine measures which were comparable across the larger group of business units within Energy Inc. and additionally provided a reliable and valid measure of performance and

progress in the newly defined areas. Furthermore, the company had to define models which showed the relevance of certain operational and strategic performance aspects for the stated long-term goals. The answer to this challenge is an approach described in later paragraphs. The approach is focusing on non-financial performance measures, more specific on a structural equation model linking strategic and operational drivers of customer loyalty.

2.2. Insurance Inc.

The case of an insurance company shows just these patterns: Insurance Inc. is a company, which was recently exposed to strong external turbulences. After a strong merger and acquisition period, the company had to go through two major reorganization projects in order to increase group-wide organizational efficiency and customer orientation. Similar to Energy Inc. the successful increase of organizational efficiency now lead to the new targets focusing on increased customer value and “service excellence” (see Fig. 2).

Especially, organic management control practices as the creation of a new strategic vision, interactive practices as employee training, and a more participative management form through a stronger communication of new corporate targets show to be essential elements for the newly defined differentiation strategy.

After having achieved a higher organizational efficiency, the company identified the possibility to generate new organic growth in its customer base. In the long run, it seems obvious that a large and growing number of customers mean a success driver of an insurance company.

However, the cost-roof of the company always seems to be of superordinate importance to the management of the company. Even though initiatives to support and improve customer satisfaction and loyalty are important, still according to statements from Insurance Inc., the “... number one driver for customer attraction is in this industry the price level of the insurance – a cheaper insurance is the most important argument for customers to select this certain provider ...” Only lower operative costs through business re-engineering and a more efficient use of resources make these low-priced offerings possible.

The implications of this fact are certainly that Insurance Inc. has the need to carefully identify the key levers to improve customer satisfaction with highly relevant and targeted initiatives. By utilizing such a strategy, the

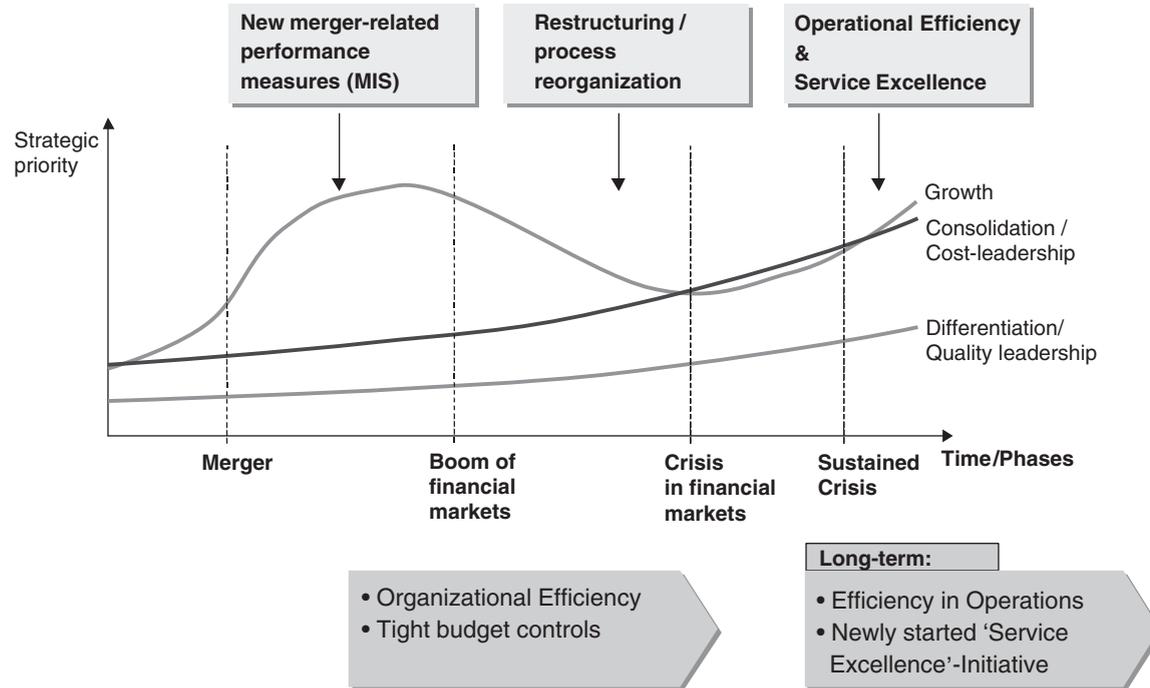


Fig. 2. Strategic Priorities of Insurance Inc. Over Time.

company intends to keep productivity of its operations high, while at the same time analytically increasing customer satisfaction up to reasonable levels.

Insights from the following case elaborated in cooperation with an international large manufacturer of electronic goods shows how specific designs of MCS support companies with a strong focus on differentiation strategies. Here, especially organic forms of control are strongly supported throughout the organization. Organic controls encompass frequent interaction and social controls. Furthermore, information has much more a character of self-designed, changing, and non-standardized information (Sitkin & Sutcliffe, 1994).

2.3. Electronics Manufacturers

Especially in this industry, executive in multinational companies are reinventing and constantly improving their quality and productivity initiatives. Certain comparable characteristics can be defined which are representing developments for most companies within this branch. The development of large electronics manufacturers typically follows a three-stage development according to a manager's statement:

- Stage 1 is internally focused, with projects not connected to the strategy.
- Stage 2 is more externally focused, and basically driven by the need to conform with customer demands and requirements to the products.
- Stage 3 is about managing business improvement, which is directly linked to business results and therefore concerns the efficiency of key processes.

Essentially, one can say that product conformance and in this way also customer satisfaction is in most cases the primary challenge. In the long run, manufacturing companies tend(ed) to develop further the way the company is organized, and focusing more and more on efficiency of operations.

In order to illustrate and underscore this pattern, we can find plenty of examples:

- At Hewlett-Packard, the 1979 Total Quality Control movement changed into Total Quality Management (TQM) in the 1980s.
- Motorola's original 1987 Six Sigma program was integrated in the 1998 Performance Excellence initiative.
- GE's Six Sigma program that started in 1995 was later accompanied by such initiatives as Change Acceleration program and Work-Out.

Looking at the initiatives these companies pursued over time, we see that the ISO standards were for these and most other companies – especially electronics manufacturers – a necessity from the end of the 1980s onward. Main target was, here, the conformance of products with internal and external customer requirements.

In order to achieve this goal, many organizations moved toward improving the monitoring and design of key processes within the operational units. Companies take advantage of this restructuring or “business reengineering” by moving toward better organizational structures and more efficient production systems. The monitoring of processes furthermore is certainly also a key driver to achieve high output-conformance with customer requirements.

Characteristic examples of initiatives for this development are e.g., the Six Sigma programs which focus on the improvement of processes through employee training and strict monitoring of process quality.

As a next step, other TQM related approaches as e.g., “top +” from one of our case studies or “BEST” from the other case intend to develop these ideas further.

These programs seem to be – according to management statements from our case companies – the logical successor to a number of improvement programs, which have previously been in place for some time. These current initiatives typically embrace a selection of tools which were considered as good for the business, covering not only the management and measurement of process performance but, moreover, the enablers and results dimensions of corporate performance, be it customer and employee satisfaction as well as even broader dimensions as sustainability, the corporate impact on the society, and the active management of partnerships and resources.

Important learnings from companies like General Electrics and Motorola is in this context also the fact that, in order to substantiate improvements – a strong focus on the implementation through training and frequent interaction with employees on the new initiatives are a major driver to anchor and substantiate improvement initiatives.

These aspects help managers to ask the right questions and thus drive cultural change, which was recognized as a priority in order to constantly improve quality.

A broader management model basically represents an answer for the managers of our two companies which looked for an approach that covered all aspects of the business and made the performance of business enablers measurable. These achievements basically follow – as illustrated at the

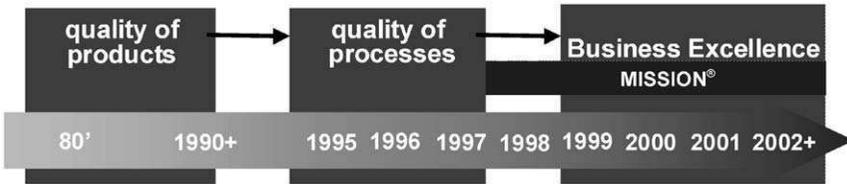


Fig. 3. Broadening Business Strategy Goals at Electronics Manufacturers Over Time.

previous chart – characteristic levels of quality management objectives as there are product quality, process quality, and corporate quality (see Fig. 3).

Business excellence approaches combine corporate targets on efficiency as well as effectiveness and leverage the satisfaction of customers and the productivity of the company at the same time. Compared to service companies with mainly non-standardized offerings, the strong and broad application of tools and techniques aimed at improving productivity and customer satisfaction – more generally spoken, the efficiency and effectiveness of key operations – seems to be very common and successfully applied in this specific industry.

The following figure illustrates the development of these objectives over time. Three characteristic initiatives, namely the ISO-programs, Six Sigma, and lately the movement toward business excellence are representing the growing common targets and drivers of success within this industry (see Fig. 4).

3. INTERACTION IMPACT BETWEEN STRATEGIC PRIORITIES AND MCS-INITIATIVES

Talking about the design as well as the changes of the management control system with regard to changing strategic priorities, we want to differentiate between two dimensions. On the one hand, we want to look at the informational dimension with a stronger focus on performance measurement with non-financials in addition to traditional management accounting. On the other, we want to focus on the type of control and differentiate between mechanistic and organic forms of control.

Energy Inc. already showed that the relation between MCS-characteristics always needs to be discussed with certain “contingency dimensions” in mind. In our context, we want to discuss how changing strategic priorities

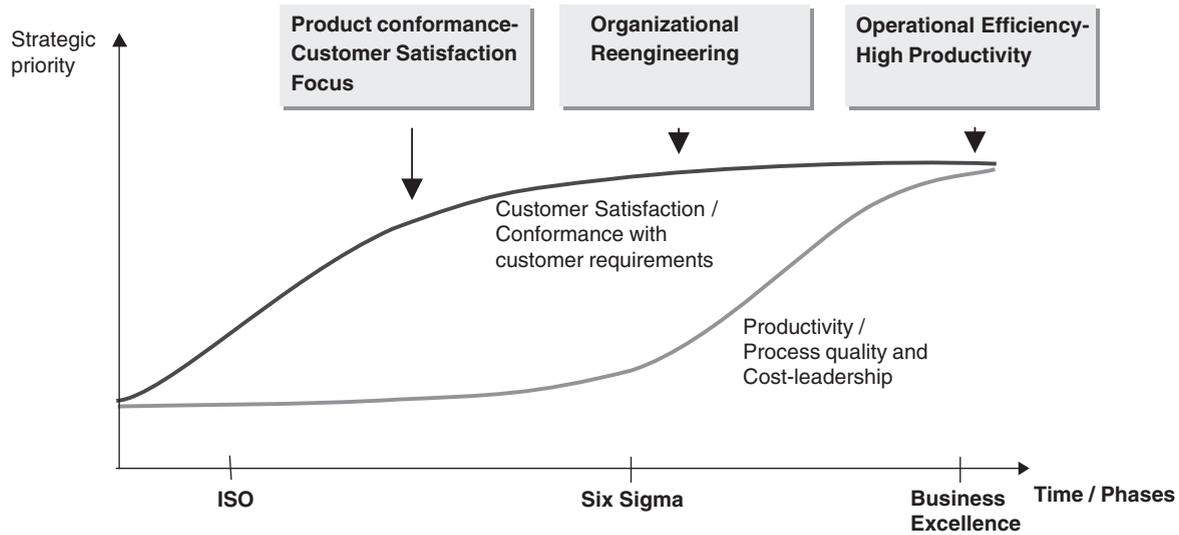


Fig. 4. Developing Business Strategy Targets Over Time at Electronics Manufacturers.

on business management level interact with the design of MCS. Drawing conclusions from Energy Inc., we can state that a stronger process orientation is one means to strengthen a strategic focus on cost-efficiency. In general, one could state that mechanistic forms of control lead to a higher effectiveness of MCS if a strategic focus is put on cost-efficiency. Similar, the differentiation strategy from later phases of Energy Inc.'s development leads to insights related to the informational aspect of MCS characteristics. Here, we can see that an increased effort is put on the use of non-financial information – especially, customer and employee satisfaction – in order to anchor newly formulated targets throughout the organization. The use of non-financials as leading indicators for aspects as service orientation and quality can therefore be regarded as very relevant for a higher effectiveness of the MCS. The informational perspective is also of high relevance for the creation and operationalization of customer satisfaction related targets. Both Energy Inc. as well as Insurance Inc. think of ways how to anchor and operationalize targets and measure performance against them. At the same time, both companies have to prioritize certain measures with a clear “cost roof,” meaning that they need to weigh potential improvements in certain performance areas with changes in productivity and corresponding increases of costs.

Based on the theoretical development, empirical results, and our insights from the electronics manufacturer, it is considered plausible that an interactive use of control systems supports differentiation strategies as well as, in the long run, performance or business results (Bisbe & Otley, 2004). In order to substantiate the discussion on this type of companies, we want to discuss their position at the example of a quantitative analysis illustrating strategic trade-off combinations between productivity and customer satisfaction for different industries (Anderson, Fornell, & Rust, 1997).

This research work shows and discusses how companies with the highest ROI of different industries seem to have already different strategic priorities on customer satisfaction and productivity. The figures below build on this insight and develop the dynamic development for an insurance company, electronics manufacturers, and an energy company. The matrix on the right-hand side translates certain corporate developments over time in the strategic field of tension between differentiation through quality or customer satisfaction and productivity (see Fig. 5).

Insurance Inc. and Energy Inc. represent companies which developed and improved productivity and efficiency throughout the organization over the process of liberalization and consolidation within the last years. They developed new strategic ambitions in the area of especially customer

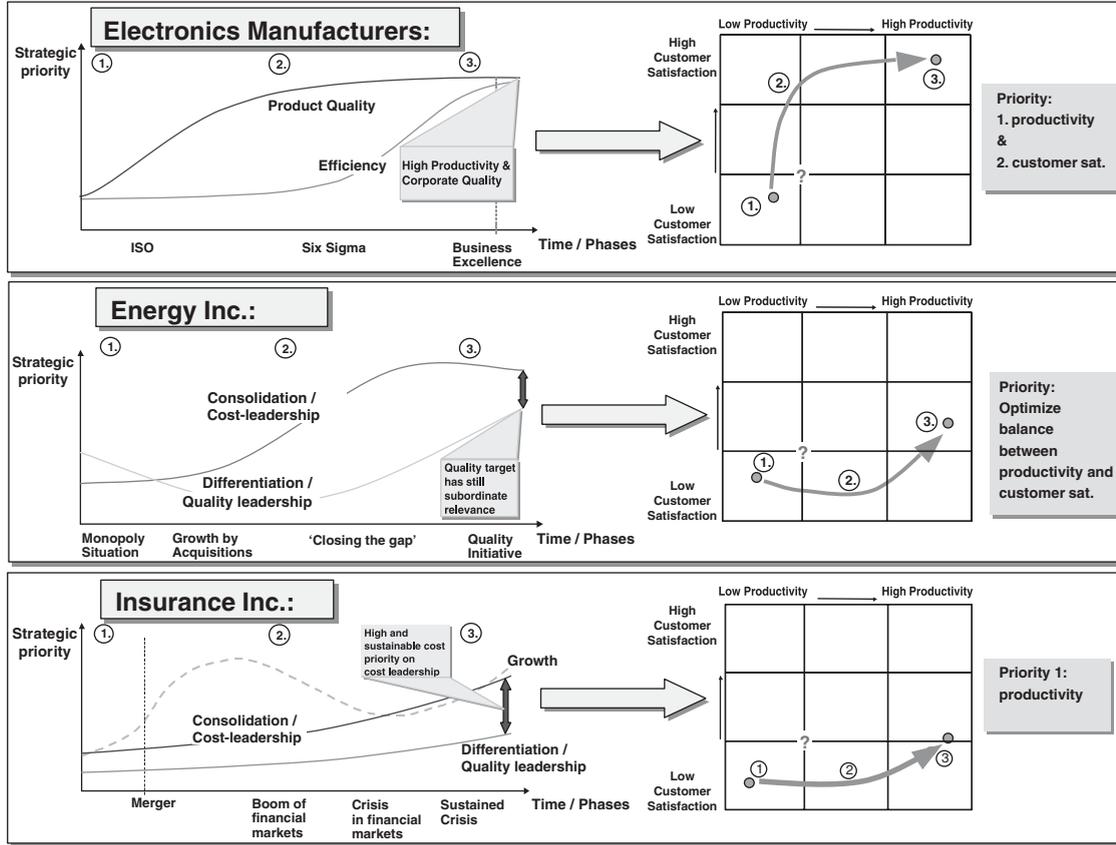


Fig. 5. Strategic Development of Industries Over Time.

satisfaction. However, both regard these ambitions as being under a clear “cost roof” – therefore, the companies see a need to clearly analyze use – and effort potential when defining and operationalizing differentiation strategies. The next figure illustrates the development of certain generic strategic positions within our theoretical framework (see Fig. 6).

Generally, known or established success positions within this framework are categorized with the cluster of “cost leaders,” which basically achieve advantages over their competitors through an increased productivity in operations, cheaper sourcing options, and/or a leaner structures of corporate processes (Porter, 1980).

“Differentiators” form the cluster of companies who do not focus on the possibility to offer cheap services or products, but moreover achieve advantages over their competitors by offering features which add real value to the customer and which makes their offering superior to the competition. In a way, these companies offer incremental improvements to established product or service spectra (Porter, 1980).

“Prospectors” are here – different to “differentiators” – companies who identify and achieve competitive advantage by actively working on services and products in new areas. Successful innovation is certainly the key challenge for these companies. Generally speaking, prospectors enact an environment that is more dynamic than those of other types of organizations within the same industry. The prospector’s prime capability is that of finding and exploiting new product and market opportunities (Miles & Snow, 1978).

“Question marks” form a cluster within our portfolio which is not to be seen as a success position. Therefore, we cannot identify any reference from literature here. Only in this context we can identify this cluster as a position where companies are in the need to identify possible paths in order to elaborate advantages over the competition – be it by increasing productivity or customer focus and satisfaction.

“High-quality standards” is not known as a cluster in literature since traditional literature states that both dimensions are not likely to be successfully combined. Many examples however – especially from the manufacturing industry – seem to indicate that certain clusters of companies are actually able to establish leadership positions in customer satisfaction with their products, high productivity, and high rentability of their investments at the same time. Judging from these examples, it seems only logical to identify this cluster as a success position. However, it seems like not all companies can follow the path from high productivity to leadership in customer satisfaction.

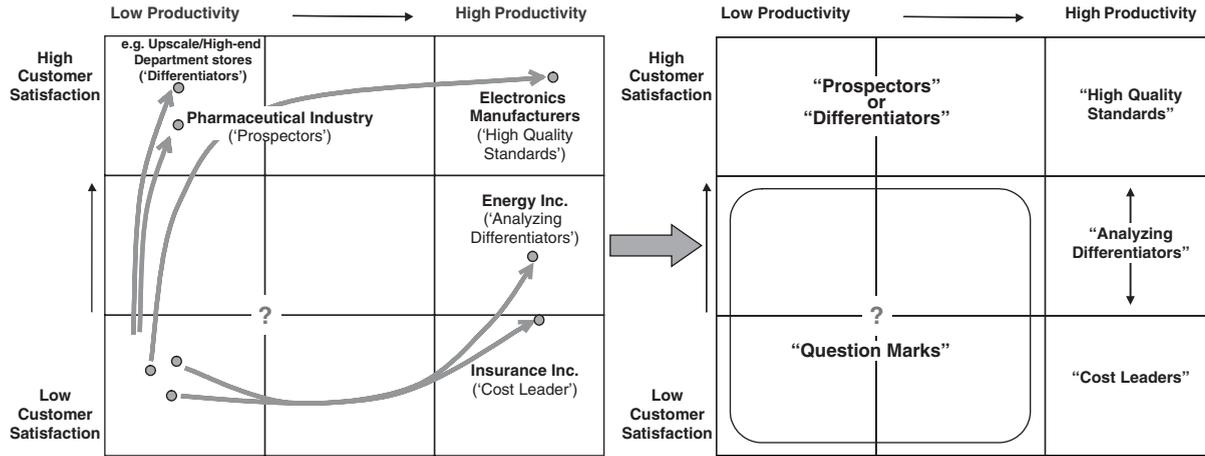


Fig. 6. Development and Characterization of Generic Strategic Positions.

Specifically for “analyzing differentiators,” it seems critical to find the right target on customer satisfaction in balance with changing contextual aspects as e.g., the customers’ price sensitivities, operational quality, or the corporate image. The introduction of a tool which helps to provide this information within an MCS is described in the following. In line with Ulrich (1981), this part ensures the implementation of theoretical insights “from practice back into practice.”

Taking the operationalization of customer satisfaction at Energy Inc. as one example, the company identified several requirements that had to be met. The new non-financial performance measures should support strategic and operational decisions as well as a facilitation of incentive structures strongly linked to new targets. A detailed description of the approach is provided later on.

3.1. Quantitative Evidence from Related Research

Specifically, for the case of Swedish pharmacies, a good example for a business with a substantial significance of services, Westlund and Löthgren researched on the interaction between employee and customer satisfaction, respectively as well as interactions between these criteria and productivity and cost efficiency in service production. The data were taken from Swedish pharmacies based on their financial key figures, data from a customer satisfaction index, and from an employee satisfaction index. The qualitative measures are derived from questionnaires and obtained using a partial least squares estimation procedure. Key conclusions are in this study positive links between employee satisfaction toward customer satisfaction as well as work productivity. Furthermore, work productivity was identified as a positive driving force toward cost efficiency. Judging from these findings, we find support for our success positions identified within the business strategy matrix. More importantly, we see that the partial effects from customer satisfaction to cost efficiency are rather mixed. In particular, positive relations are here found just for highly productive pharmacies (Westlund & Löthgren, 2001). Judging from the quantitative evidence, the industry of Swedish pharmacies seems to have the characteristics of analyzing differentiators. On the one hand, customer satisfaction is an important driver for the success of the pharmacies, on the other, only certain elements of customer satisfaction seem to go along with the improved cost efficiency for the company. In order to improve the overall rentability of pharmacies, it seems obvious that successful pharmacies are in the need to identify most

critical drivers of customer satisfaction by, at the same time, looking at critical drops of operational productivity.

In support of this study, Westlund and Fornell additionally identified potential downsides of customer satisfaction across several industries. Whereas in lower levels of customer satisfaction, their study found significant associations between customer satisfaction and corporate success, the effect seemed to be just the opposite for companies strongly leading in customer satisfaction compared to their competitors. This in return reflects the path leading from cost leaders to high-quality standards elaborated within the matrix from Fig. 7. For many companies, customer satisfaction cannot be approached in full coexistence with productivity leadership (Westlund & Fornell, 1993). The empirically proven downside of customer satisfaction in higher levels provides additional evidence supporting the justification of the cluster of “analyzing differentiators.” The following paragraph discusses and illustrates possibilities to provide analytical mechanisms, which help companies to identify critical drivers of customer satisfaction in relation to competing performance drivers.

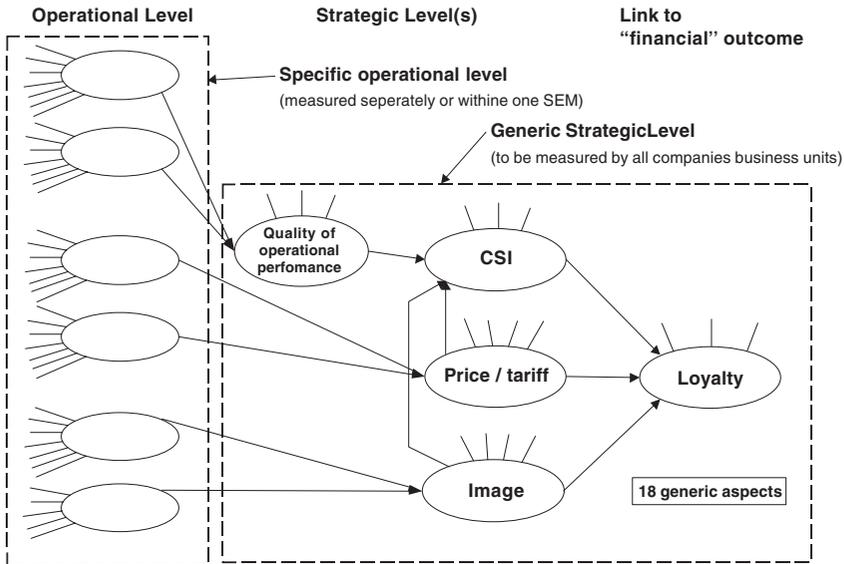


Fig. 7. Non-Financial Performance Measurement at Energy Inc. – Strategic and Operational Drivers of Customer Loyalty.

3.2. Operationalizing Diagnostic Management Control for “Analyzing Differentiators”

Cause and effect structures, which in this context mean the design of information with links among non-financial parameters and in the end the financial outcome is the approach intended to indicate the relative importance of single performance aspects. Based on the findings from interviews, discussions, and workshops, we came up with suggestions for a design of a partly aligned measurement of customer satisfaction at Energy Inc. Often, and also in our case, one is confronted with a set of interrelating aspects. For example, what determines satisfaction, and how does it combine to determine the loyalty of the customer? Also, one is interested in knowing how certain aspects of operational performance affect the overall performance and perception by the customer – also in relation to the price impact. The applied structural measurement approach – which ideally represents real cause and effect structures defined by managers from practice – promises to provide highest precision of the results (Kristensen & Westlund, 2004). The structural equation modeling technique (1) provides in this context a method of dealing with multiple relationships simultaneously while providing statistical efficiency and (2) its ability to assess the relationships comprehensively. In comparison, multiple regressions, factor analysis, multivariate analysis of variance, discriminant analysis, and some other techniques all provide the researcher with powerful tools for addressing a wide range of managerial and theoretical questions. Still, they all share one common limitation: each technique can examine only a single relationship at a time. Especially, companies intending to identify relations between different performance areas can bring in their knowledge through a defined cause-and-effect path diagram. Since this knowledge is very present in our case within all business units, this structural equation model approach was applied.

On the basis of employee and customer data, Energy Inc. is now able to identify the relevance as well as the quality of operational aspects as, for example, “complaint management.” Even though the pricing aspect is highly relevant in this specific industry, the company can by the help of this approach clearly identify how important other aspects as, for example, overall customer satisfaction or image really are for the loyalty of customers – also specific to every single business unit.

The model structure allows furthermore to link this data to the quality of overall performance and through this directly to customer satisfaction. In the long run, empirical links to on the one hand data from process-Key

Performance Indicators (KPIs) from the business performance initiative as well as links between customer loyalty and financial outcome should even increase the relevance and power of the model. The structural performance measurement models on the basis of non-financials as, for example, customer and employee satisfaction, therefore, serve as strong drivers of the strategic focus on differentiation through corporate quality.

4. CONCLUSION

The case studies in this paper develop a framework providing qualitative insights into the way the companies pursue a contingency-based design of MCS. Dynamic changes of strategic priorities show to have a significant impact on the way companies make use of non-financial information and organic or mechanistic forms of control.

The cases illustrate patterns showing how on the one hand organic management control in combination with non-financial performance measures is applied to support newly formulated differentiation strategies, and on the other how mechanistic forms of control support a stronger focus on cost efficiency. "Business performance programs" with a focus on stricter process orientation help to link strategic objectives with operational measures and targets. Non-financials are here furthermore of high importance on top management level in order to strengthen a company-wide customer focus in the company.

In line with results from a quantitative study pursued prior to this research, we develop generic success positions in the field of tension between productivity and customer satisfaction. Results show that, whereas manufacturing companies are often able to successfully combine foci on both strategic dimensions, service providers tend to be in the need to weigh an increased customer focus in specific performance areas with drops in productivity and the overall cost situation. Defining this corporate status as a cluster of "analyzing differentiators," we were able to identify a specific need for these companies to determine the strongest operational and strategic levers of customer satisfaction in relation to competing performance and cost drivers. Insights from action research illustrate in this context how a structural equation model approach helps to define cause-and-effect links between strategic and operational levels within the organization. By the help of this approach, companies can determine the effectiveness of certain aspects of operational performance on the overall loyalty of customers.

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STRATEGIC PERFORMANCE MANAGEMENT IN FOR-PROFIT AND NOT-FOR-PROFIT ORGANIZATIONS: WHAT'S THE DIFFERENCE AND WHAT CAN THEY LEARN FROM EACH OTHER?

Gerhard Speckbacher

ABSTRACT

Nonprofit organizations play a substantial role in most modern economies. While nonprofits feel an increasing need for being business-like and for applying modern performance management practices, today's "knowledge-based" profit-seeking firms are becoming more and more "multi-dimensional" and stakeholder driven. Since nonprofits have much experience in managing multi-stakeholder relationships and in balancing multiple objectives, there are many lessons, business firms can learn from nonprofits. In particular, we argue for employing a strong mission in order to stress the common interest instead of putting emphasis on distribution conflicts. Nonprofits can also provide best practice examples for using "soft incentives" and intrinsic motivation when translating the mission into action.

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1. INTRODUCTION

Nonprofit organizations play a substantial role in most modern economies and their share of employment and production has been growing considerably (Weisbrod, 1997; Salamon & Anheier, 1996). Although management was a “dirty word for those involved in nonprofit organizations” (Drucker, 1989, p. 89) not so long ago, notions of performance measurement and accountability are more and more emphasized in nonprofit organizations today. It is argued that only if nonprofit organizations provide information on their performance, constituencies can assess whether the organization fulfills its mission properly. If such an assessment is not possible, public trust in nonprofit organizations is bound to be lost (see Herzlinger, 1996). There is a growing belief that “nonprofits are both being asked and required to be more business-like in their operation and attitude” (Dart, 2004, p. 290), although it seems still unclear what this means. Sometimes it is argued that business means a focus on profit generation and therefore nonprofits can never be business-like. Another interpretation is that “business-like” has to do with certain organizational practices and behavior, with planning, the application of “business thinking” and specific business tools like market analysis or balanced scorecards (BSC) (on this discussion see Dart, 2004). As Drucker (1990) suggests, nonprofits are even in a greater need for management than for-profit organizations since there is no single financial scorecard of success in nonprofits. Anheier (2000, p. 6) argues that in the for-profit sector, market prices exist and, although there are imperfections on the relevant markets, “all these prices can coalesce into one monetary bottom line”; in contrast, “several rationales or bottom lines, operate in non-profit organizations”. While profit-seeking firms are focused on shareholders and their financial goals, nonprofits are characterized by multi-stakeholder relations and multiple primary objectives.

On the other hand “the lines dividing for-profit and nonprofit organizations are blurring in many respects” (Rose-Ackerman, 1996, p. 701; Moss Kanter & Summers, 1987, p. 155). While nonprofits feel an increasing need for management practices, there is at the same time a growing awareness that modern knowledge-based firms do not correspond to the ideal type of a capitalist firm which focuses only on the contributors of physical assets (the shareholders). Modern knowledge-based firms typically depend much more on the contribution of specialized employees, long-term suppliers or high-value customers than on physical capital. This seems to suggest that profit-seeking firms are becoming more and more “multi-dimensional” and stakeholder driven. In fact, recently developed concepts for performance

management in the private sector emphasize that firms have to acknowledge and manage the needs of all major stakeholders if they want to be financially successful (see e.g. Atkinson, Waterhouse, & Wells, 1997). Since nonprofits have much experience in managing multi-stakeholder relationships and in balancing multiple objectives, it seems plausible that there are many lessons, business can learn from nonprofits (Drucker, 1989).

The goal of this paper is to explore the differences and relationships between for-profit and nonprofit organizations with respect to strategic performance management and management control from a theory-based perspective.

Our main theoretical argument is that every approach to performance management is (explicitly or implicitly) based on a specific model of the organization. Most importantly, this model defines:

- (1) *The primary objectives of the organization and measures for evaluating the achievement of these objectives (performance measurement)*. More precisely: The underlying model of the organization specifies the primary stakeholders of the organization who define the organization's primary goals. From these goals primary performance measures can be derived. These performance measures inform each primary stakeholder about the achievement of her/his goals. In this sense, organizational performance is defined as the achievement of the goals of the primary stakeholders.
- (2) *A model for value generation (performance management)*. More precisely: The underlying model of the organization specifies how primary goals are achieved. The model of the organization provides a rationale for the existence of a specific organizational form and it specifies how the actions and contributions of all constituencies (stakeholders) are transformed into performance. Conversely, this specifies how organizational performance can be controlled through management decisions.

The paper is organized as follows. In Section 2 we present the prevailing shareholder value models of the firm and the implications of these models for the design of strategic performance management systems, and we discuss whether and how these models can as well be applied to nonprofits. Section 3 develops a more general organizational model and analyzes its implications for performance management systems in for-profit and nonprofit organizations. Section 4 discusses the relationships and differences between strategic performance management systems in for-profit and nonprofit organizations. Although there is a fundamental difference between classical industrial-age firms and nonprofit organizations, we argue that the modern knowledge-based firms of the information-age have much in common with nonprofit

organizations. Therefore, profit-seeking firms can learn a lot from best practices in nonprofit organizations.

2. THE (SHAREHOLDER) VALUE-BASED MANAGEMENT MODEL

In the following, we present models of the firm which assume the primacy of shareholder value and we discuss the link between these models and (shareholder) value based performance management systems. We analyze whether and how such models can contribute to the question how to design better performance management systems in nonprofits.

2.1. The Model of the Classical Capitalist Firm and Corporate Governance

Building on Coase (1937, 1960), the early economic theories of the firm stressed the importance of property rights, transaction costs and information asymmetries. Pioneering models of the firm have been provided by Alchian and Demsetz (1972) and Jensen and Meckling (1976). In these models the firm is understood as a nexus of interrelated contracts among the suppliers of factor inputs and the purchasers of outputs. Firms are superior to simple market contracting (i.e. firms are institutions that save transaction costs) since their ownership structure provides superior incentives in the face of joint production structures with indivisibilities, information asymmetries and the resulting moral hazard problems. These models of the firm assume that – with the exception of the owners – each party (e.g. employees, suppliers, customers) is fully protected by a complete contract, i.e. the contract specifies exactly what this party has to contribute and what it receives in every conceivable state of nature. For example, employees' rights and duties are completely defined by a work contract and by surrounding legal regulations, customers' rights and duties are regulated by the contract of sale, implied guarantees, product liabilities, etc. The owners, however, receive the residual earnings (profit) and bear the whole risk of the business. Under this assumption it follows immediately that the only economically meaningful arrangement is to protect the investments of the owners by giving them the right to control the firm. While other stakeholders do not have an interest in decision rights (by assumption, their claims are effectively protected by contracts and by law), the investments of the owners would be worthless without the right to direct these investments. The assumptions of the

underlying model of the firm therefore are equivalent with assuming the priority of owners' interests and the primacy of shareholder value. The claim to the residual earnings gives owners a high-powered incentive to make (firm-) value maximizing decisions (see in detail [Tirole, 2001, p. 3](#)).

[Alchian and Demsetz \(1972\)](#) stress the importance of monitoring systems, the importance of ownership as a high-powered incentive for the monitor on top of the hierarchy. In their view, monitoring systems guarantee that employees do what they are paid for. While the fulfillment of "ordinary tasks" can be guaranteed by monitoring (using various instruments like reporting and control systems) the monitor needs a strong incentive to fulfill his task properly. Ownership – understood as a bundle of exclusive property rights (in particular, the exclusive right to sign and cancel contracts with team members and the claim to residual returns) – provides such an incentive. This establishes the (simplistic) model of the classical capitalist firm as a nexus of contracts where the providers of capital have exclusive rights and are the privileged owners of the team. [Jensen and Meckling \(1976\)](#) elaborate this view by extending the scope of the considered contracts from employees to other constituencies such as suppliers, customers and lenders of capital and by introducing the concept of incentive contracts.

2.2. Implications for the Design of Performance Management in For-Profit and Nonprofit Organizations

The model of the classical capitalist firm has the following characteristics and immediate implications:

- (1) By definition, the owners of physical capital (shareholders) are the primary stakeholders. They alone own the claim on the residual, i.e. profit. All other stakeholders are paid according to the market price of their contribution.
- (2) Since it is assumed that all outputs and inputs are valued by market prices, there is an "objective" measure of corporate success defined by market prices (output valued at market prices minus the market value of inputs).

These implications are highly important for the design of performance management systems. The existence of a clearly defined stakeholder group with homogeneous (all owners support profit maximization unanimously) and clearly defined objectives (profit is a clear and simple concept under the assumptions of this model) makes performance measurement a relatively

easy and straightforward task. Moreover, this model implies that the ultimate goal and the measures to assess goal achievement are essentially the same for all profit-seeking firms. This fact makes it possible to design “one fits all” performance measurement and management systems (e.g. EVA and associated value driver systems) in the private sector. Despite the great variety of businesses, all business enterprises share the characteristic of having one privileged interest group with one clearly defined goal. Moreover, this easily measurable ultimate goal provides a common currency for assessment and delegation. Inside the firm financial measures provide a relatively clear and accessible ultimate scorecard of performance, which can be employed to assess different courses of action with respect to their value for owners. This makes the delegation of tasks relatively simple.

In nonprofit organizations the situation is completely different. There is no single, clearly defined primary interest group with homogeneous interests. Rather, nonprofits are built around their mission. Typically, this mission cannot easily be translated into performance measures. Moreover, nonprofits serve a multitude of constituencies whose goals and needs may be quite inhomogeneous. Therefore, it seems obvious that performance management systems that rely on the above model of the classical capitalist firm cannot be transferred to nonprofits. In other words: Nonprofit organizations cannot learn much from performance management systems that are built on the organizational model of the classical capitalist firm.

Beyond the implications discussed above, however, the models of [Alchian and Demsetz \(1972\)](#) and [Jensen and Meckling \(1976\)](#) address an organizational question which is highly important for nonprofits as well. These models of the firm contribute to the question: How can organizational goals be “translated” into corresponding actions of the members of the organization (and of external stakeholders) through monitoring and incentive systems?

Since it cannot be assumed that all actors in an organization (for-profit or nonprofit) have the same information and the same preferences and since tasks have to be shared and delegated, there is clearly a problem of coordinating actors with respect to organizational goals. The classic models of [Alchian and Demsetz \(1972\)](#) and [Jensen and Meckling \(1976\)](#) emphasize two important mechanisms for coordination: monitoring and incentive contracts.

Monitoring systems like the reporting and control systems commonly employed in firms seem to be transferable to nonprofit organizations in principal. However, [Williamson \(1983\)](#) notes that the monitoring of management tasks in nonprofits is more complicated than in for business

enterprises and hence more costly. The qualitative nature of inputs and outputs and the absence of market prices make it more complex and costly to define tasks and it becomes more difficult to find out whether these tasks are fulfilled properly. In particular it is evident that financial reporting systems are not a sufficient monitoring device in nonprofits. On the other hand, it is often argued that managers and workers in nonprofits need less monitoring, since they are more committed to the organization's mission (see [Rose-Ackerman, 1996, p. 719](#), for empirical support: [Preston, 1989](#); [Weisbrod, 1983](#); [Roomkin & Weisbrod, 1999](#)).

Just the same, it is not at all evident whether incentive contracts are transferable to nonprofits. A short review on the existing empirical work on this topic is given by [Brickley and Van Horn \(2000\)](#). [Roomkin and Weisbrod \(1999\)](#) compare incentive contracts for managers in for-profit and nonprofit hospitals and find that nonprofit hospitals use fewer explicit performance-based bonuses and if they use them then they tend to use more nonfinancial performance criteria than for-profit hospitals.

The theory on incentive contracts supports this empirical result. For the incentive systems discussed in the traditional agency literature (for an overview: see [Prendergast, 1999](#)) and also for practically used incentive systems, it is important that the relevant result of an agent's task (or a meaningful proxy) is clearly definable and enforceable. For many delegation problems in for-profit firms this assumption does not hold (see [Prendergast, 1999](#); [Gibbons, 2005](#)), but it is clearly much more questionable for nonprofits. The multidimensional character of results in nonprofits, moreover, has the effect, that agency problems are typically multitasking-problems. The theory on incentives shows that these characteristics call for an intelligent mix of different incentive mechanisms with low-powered incentives and the need for subjective evaluations in order to prevent that agents "game" the compensation system ([Prendergast, 1999](#); [Gibbons, 2005](#)).

Moreover, there is another important point to be considered. It is often argued that employees in nonprofit organizations may have a different preference structure (see [Beck, 2005](#)). Great parts of the agency literature implicitly assume that there is a fundamental conflict between "greedy and lazy" agents (employees) on one side and vulnerable principals who must be protected from expropriation on the other side (see e.g. [Prendergast, 1999](#)). In nonprofits, however, many employees accept below-market compensation because they believe in the mission of the organization and because they feel intrinsically motivated by their task itself. This can mean that incentives (extrinsic motivation) are not as necessary in nonprofit organizations, since there is a lot of intrinsic motivation. It may even be argued that nonprofits

actually emerge in situations where “soft incentives” and intrinsic motivation are particularly desirable (Shleifer, 1998, p. 140).

Drucker (1989, p. 92) argues that (knowledge based) profit-seeking firms can learn a lot from leading nonprofits with respect to the (nonfinancial, intrinsic) motivation of knowledge workers. He gives examples of nonprofits that succeed in motivating employees (only) by a challenging environment and by giving workers the possibility to learn and offering them “meaningful achievement”. Such best-practice examples can be important for profit-seeking firms where extrinsic motivation does not work well.

Moreover, nonprofits have a lot of experience with the interaction of extrinsic and intrinsic motivation and, in particular, nonprofits have much valuable experience with the “risks of intrinsic motivation”. In face of a multitude of “good” objectives of employees and in face of the fact that intrinsic motivation is extremely difficult to change (Osterloh & Frey, 2000), it is often a problem to channel intrinsic motivations. The result can be diffusing organizational energy. The ability to channel intrinsic motivations is a highly important success factor for nonprofits and, therefore, for-profit firms may learn from nonprofits in this respect, as well.

2.3. New Developments in the Capitalist View of the Firm

The classical capitalist model of the firm is a cornerstone in the modern economic theory of the firm and its view on ownership rights and their enforcement through monitoring and incentive mechanisms is still the backbone of today’s shareholder value-based performance management systems. However, this model involves an obvious drawback that it is more or less silent about the process of value/profit generation itself. In fact, if all markets work perfectly and the firm is just a bundle of “ordinary” contracts then it is unclear why profits occur at all. Assuming that measuring firm success boils down to calculating the market value of output minus the market value of inputs (if the assumption that factor and product markets are perfect is accepted to be a reasonable simplification) or calculating the market value of the generated cash flow stream (if it is believed that at least capital markets are more or less perfect and complete) makes performance measurement a relatively simple task. However, the question arises: “where does profit/positive Net Present Value (NPV) come from if the respective markets are perfect?” In other words: This model does not provide a rationale for profit generation and therefore it cannot serve as a basis for a concept of performance management.

According to the above models of the firm, the superiority of firms (compared to ordinary market contracting) has only to do with the specific “governance and incentive structure” they can provide in face of (1) resource complementarities and the resulting impossibility to compensate each team member exactly according to his contribution/performance (performance measurement difficulties) and in face of (2) various problems of asymmetric information and moral hazard (see [Alchian & Demsetz, 1972](#); [Jensen & Meckling, 1976](#)).

Accordingly, the specificity of firms (compared to market contracting) lies, firstly, in their ability to provide the high-powered incentive for (equity) owners to fulfill the ultimate control and monitoring task ([Hansmann, 1996](#)) and, secondly, in the nexus of contracts with external and internal stakeholders (managers, employees) that constitutes an efficient monitoring and incentive system.

Only recently, a new stream of economic theories of the firm has been developed which gives a more satisfying answer to the question on the superiority of firms (as a governance structure) compared to market contracting. As will be seen, these theories still take a purely capitalist view but they shed more light on the specificities of firms compared to market contracts and hence on the functioning of the value generation process in firms (which is highly relevant for a theory-based design of performance management systems).

These theories relax the assumption of complete contracts and argue that the nature of the firm (its superiority to pure market contracting) lies in the fact that firms are institutions that provide a better incentive structure for governing incomplete contracts. Consequently, the core of the governance problem in firms is the provision of an optimal incentive structure in the face of contract incompleteness. The idea of the importance of contractual incompleteness goes back to [Williamson \(1985\)](#) and its concrete formulation and application in a model of the firm is due to [Grossman and Hart \(1986\)](#) and [Hart and Moore \(1990\)](#). In the real world, contractual relations between different constituencies (in a firm) are usually incomplete in the sense that not all eventualities which are important for the contracting parties are included in a contract in an enforceable way, i.e. the contract does not specify each party’s obligations in every conceivable eventuality (for an overview on the theory of incomplete contracts see [Hart, 1995](#); [Schwartz, 1998](#); [Tirole, 1999](#)). Grossman/Hart/Moore define ownership (of the firm) as the right to make decisions in all the contingencies that are not specified by contracts among the cooperating parties (and not regulated by law). Since Grossman/Hart/Moore view the firm as a collection of physical assets and

focus on the allocation of the ownership of physical assets, Zingales (1998, p. 498) notes that this approach excludes, any stakeholder other than the owner of physical assets from being important to our understanding of the firm” by definition. In this sense, this model of the firm is still a purely capitalist view.

Consequently, the implications of this model for performance management are essentially not different from the models by Alchian/Demsetz and Jensen/Meckling. However, its focus on incomplete contracts (this concept goes back to Williamson, 1985) was the starting point for a new theory of the firm which is also compatible with a theory of other organizational forms, e.g. nonprofits.

3. A STAKEHOLDER MODEL OF ORGANIZATIONS AND STAKEHOLDER-BASED PERFORMANCE MANAGEMENT

In the following, we discuss this new theory of the firm and its applicability to nonprofits with respect to performance management.

3.1. The Economic Stakeholder Model of the Firm and Corporate Governance

Recently, a new theory of the firm, following the institutional economic tradition has been developed by Rajan and Zingales (1998) and Zingales (1998). Building on the incomplete contract approach by Grossman and Hart (1986) and Hart and Moore (1990), they define a firm as a nexus of specific investments that cannot be replicated by the market. While Grossman/Hart/Moore, however, focus on the specific (physical) investments of owners, Rajan and Zingales emphasize that the problems arising from asset specificity and incomplete contracting are not limited to the owners of physical resources and they understand a firm as a combination of mutually specialized assets and people.

Hence, a firm is seen as a framework for the cooperation of different people who invest something (money, time, etc.) into the relationship and who expect to get something in return from their investment. However, contracts are incomplete in the sense that the return for each party (money, satisfaction, etc.) is not specified exactly in advance. At least in part,

investments are specific, i.e. they have a much higher value inside the contractual relationship than outside (in the next-best use). After specific investments have been made, the investor is locked-in and the specific investments are at stake, since the value of these investments outside the cooperation is much lower than inside. The difference between the value of the specific investment inside the relationship and the next-best use outside (if the cooperation fails) was called quasi-rent by Klein, Crawford, and Alchian (1978, p. 298). If implicit claims of one party are not fulfilled and the associated quasi-rent is appropriated by other parties, this is called a holdup.

In an important article, Cornell and Shapiro (1987) pointed to the relationship between the existence of implicit contractual claims and the concept of a stakeholder. We follow their terminology and call each party that has specific investments at stake within an incomplete contractual relation with the firm (i.e. each party that is exposed to the risk of a holdup) a “stakeholder”.

The importance of specific investments for the nature of the firm and as a source of corporate success has already been pointed out by Williamson (1985), Alchian and Woodward (1988) and others. Combined with the fact that many contractual relationships in a firm are incomplete, the problem of managing specific investments becomes obvious. Clearly, not only the owners of physical capital make considerable specific investments without being protected from holdup by a complete contract. Also employment contracts are a good example for incomplete contracts where specific investments play an important role. Employment contracts regulate initial wages or working hours but they are incomplete with respect to the conditions for layoffs, promotions or wage increases. A worker who acquires firm-specific know-how or who is working overtime without additional payment makes firm-specific investments, i.e. investments that have value for the “investor” (the worker) inside the firm but lose most of their value outside. The value for the investor inside the relationship is that the investor expects some kind of “return” of her investment in the form of promotions, future wage increases, appreciation or higher job satisfaction. However, there is no written and enforceable contract that specifies the return of the investment. The same holds true for customers who pay a higher price for the product expecting an extraordinary service or further product support after its production is dropped. On the other hand, firms invest in workers’ training hoping for better performance and they invest in customer relations hoping for customer loyalty. Typically, there is some kind of implicit agreement between the parties on such things. While explicit claims (e.g. initial wages

for workers, working hours, price and delivery of a good) are protected by law, implicit claims give room for bargaining ex post (i.e. after the parties started to cooperate).

Obviously, the willingness of each party to provide specific investments which contribute to firm success depends on this party's expectation on the return from the investment (which is unclear since contracts are incomplete). Not only the owners of physical capital but also owners of human capital, customers and suppliers contribute to the generation of rents in a firm when they provide specific investments. However, the incentives to provide such rent-generating specific investments depend on the expectations about the return from these investments (i.e. on the distribution of quasi-rents in the above terminology).

Incompleteness of contracts means that there is room for ex post bargaining over quasi-rents between the parties who have implicit claims at stake. Building on earlier work by Williamson (1985), Zingales (1998) argues that the core of corporate governance is the exercise of authority, direction, control or power in the ex post bargaining over the rents which arise from the cooperation. Owners of human capital as well as owners of physical assets can only be expected to make specific investments, which generate firm value if they in turn can expect to get an adequate share. With respect to corporate governance it is argued (on this line of argument see e.g. Zingales, 1998, p. 500; Williamson, 1985, pp. 302–304) that the owners of physical capital should be the primary stakeholders and hence possess the residual rights of control (which include the right to determine the primary objectives of the firm, the right to specify the corporate strategy and to make all management decisions) since owners of physical capital:

- make the largest, most valuable and most specific investments and
- are exposed to a particularly high holdup risk since an effective contractual protection of the claims from these investments is not possible.

3.2. Implications for the Design of Performance Management in For-Profit and Nonprofit Organizations

The above model of the firm has the following implications:

- (1) Value in a firm (and hence profit) is generated by specific investments of stakeholders. The corporate governance system protects the specific investments of shareholders by giving them the residual rights of control. Therefore, shareholders have the right to define the primary objectives of

the firm. In this sense, profit maximization is still the typical primary objective of firms.

- (2) While the specific investments of shareholders are protected by the governance system, it is a (strategic) management task to determine what kind of specific investments from which stakeholders are necessary to generate value (according to a specific firm strategy); as firm strategies differ, different firms rely on different stakeholders in different ways.
- (3) Stakeholders will only make value-enhancing specific investments if they can expect a return from their investment. Hence, value generation and value distribution among stakeholders are interdependent.
- (4) This task of balancing the contributions of all stakeholders against their share and hence determining the extent to which implicit claims are fulfilled can be seen as the core of strategic performance management.

The “incomplete-contract-view” of the firm can serve as a theoretical foundation of a modern stakeholder-oriented strategic performance measurement and management system (on this see [Atkinson et al., 1997](#)).

Interestingly, [Zingales \(1998, p. 498\)](#) notes that the above model applies for any economic relationship or organization.

As long as people cooperate on a simple quid pro quo basis (often called “market contracting”) there is no substantial problem of organizational governance. The terms of the exchange are specified by a contract and by the surrounding contract law and if problems occur, courts can decide quite efficiently. However, there exist economic relationships between people that are more complex and where it is too costly or even impossible to specify in advance exactly what each party will contribute and receive during the relationship. In such complex relationships a substantial governance problem occurs which is quite different from the governance of ordinary market contracts. If the cooperating parties specialize their efforts and resources to the relationship without exactly knowing whether “it’s worth it”, they become stakeholders to the relationship. Once they made relationship-specific investments with little value outside this relationship and with no explicit claim on the return from these investments, they are “locked-in” and they must be prepared for a holdup (i.e. the rents from their specific investments are appropriated by other parties). On the other hand, such relationships have the potential to generate additional value precisely because they are more complex than simple market contracting. Through the mutual specialization of assets and people it is possible to generate rents that could not be generated in an arm’s length exchange relationship. For example, such rents can materialize as unique products or services that have much higher

value than the resources spent to produce them. But rents could as well occur in the form of superior services for the clients in a nonprofit hospital.

However, the willingness of people to cooperate in such a value-generating relationship and their willingness to contribute and to specialize to that relationship depends on their expectation whether it's worth it, i.e. whether they expect that they can achieve the objectives they had in mind when they made the decision to enter the relationship. This causes a bargaining problem in the sense that each stakeholder takes action to make sure that the relationship contributes to the objectives he had in mind when he decided to contribute to the relationship.

While it can be argued that shareholders should possess the residual rights of control in profit-seeking firms it can as well be argued that donors and/or volunteers should possess these rights in nonprofit organizations (see [Speckbacher, 2005](#)). Consequently, these primary stakeholders determine the primary goals in the organization and they have to decide what kind of specific investments from which stakeholders are necessary to generate maximum value. Moreover, they have to manage the process of value generation and value distribution among stakeholders (strategic performance management).

4. BLURRING BOUNDARIES IN STRATEGIC PERFORMANCE MANAGEMENT: DIFFERENCES AND RELATIONSHIPS BETWEEN FOR-PROFIT AND NONPROFIT ORGANIZATIONS

The solution to the governance problem of traditional (industrial) profit-seeking firms used to be quite simple and highly effective. The physical capital (e.g. production machines, factory buildings) provided by the owners used to be by far the most important and most valuable resource in a firm and this physical capital was also by far the most specific resource. In contrast, the contribution of workers was relatively unspecific and it was easy to replace factory workers on the labor market. For the typical mass-production factories of the industrial age not only workers but also customers and suppliers were easily replaceable (see [Zingales, 1998](#)). Accordingly, it seemed obvious that the owners of physical capital (the shareholders) should have the residual rights of control in such industrial firms. Moreover, shareholders as primary stakeholders constitute an extremely homogeneous group and all shareholders unanimously support the maximization of profits as the overriding goal of corporate activity. This fact kept bargaining costs to a

minimum. Even the costs for delegation and the costs of control are relatively low since profit maximization is a relatively simple and clearly measurable objective. In such industrial firms specific investments from other stakeholders used to be not very important for corporate success and therefore other stakeholders did not play a powerful role in the bargaining process for the rents generated by the firm.

Consequently, strategic performance management used to be a relatively easy task, which rightly focused on financials i.e. on systems that gave information about the (financial) value of the implicit claims of shareholders. More or less, measuring and managing (financial) performance was a task that did not differ much between different firms and that did not change over time. Hence, one static system of financial performance measures could be applied to different kinds of firms.

In contrast, nonprofits have been characterized by multiple stakeholder interests, nebulous organizational objectives, and hence inefficient resource use. Since a clear “unique” primary objective is missing, the implementation of strategic performance management systems in nonprofits is quite difficult and has to acknowledge the specific mission of the organization, its constituency, etc. (on the implementation of performance management systems in nonprofits, see [Speckbacher, 2003](#)).

But this simplistic view of for-profit versus nonprofit organizations is not true any more. Modern knowledge-based firms often depend much more on specific investments from employees, suppliers or customers than on physical capital (which is almost zero in many knowledge-based firms). Maximizing the incentives for value-enhancing specific investments from strategically important stakeholders has become a vital task for modern firms. Knowledge-based firms that depend not only on specific physical investments but just the same on specific investments from specialized workers and specialized long-term suppliers are exposed to a substantial bargaining problem with respect to the rents simultaneously generated by these stakeholders. This seems to suggest that profit-seeking firms are becoming more and more “multi-dimensional” and stakeholder driven and hence also their strategic performance management systems should this multi-dimensionality be taken into account.

Nonprofits have much experience with such bargaining problems and multi-stakeholder relations, although bargaining in nonprofits is not about financial rents. Stakeholders of a nonprofit organization do not struggle for financial returns but about “ideal” intangible returns from their contribution to the organization, i.e. they bargain for the best way to use the invested resources for the mission (and even about the interpretation of the mission itself).

In contrast to profit-seeking firms, however, such struggles are not inevitable in nonprofits. The promotion of the organization's mission is typically not an exclusive good and hence there is no built-in rivalry among stakeholders. If all stakeholders share the same expectations about "returns" from their specific investment (i.e. if they share the same vision and mission) then there is no problem of sharing rents or of bargaining for rents among stakeholders at all. In this case, the incentives for all stakeholders to provide specific investments are maximized and costly power-seeking and bargaining activities among different stakeholders are minimized.

Nonprofits that are able to establish a shared mission provide a strong incentive for all stakeholders to make specific investments that contribute to this mission. Moreover, the mission can provide a common denominator for all (primary) stakeholders while a focus on profit necessarily implies conflicts. The existence of an investor who invests only to make a financial profit destroys the public good character of the mission, since the investor could increase his return by holding up the other parties.

Knowledge-based firms that rely heavily on specific investments from different (non-shareholder) stakeholders may as well use this mechanism to make complementarities among stakeholders explicit rather than conflicts (bargaining about rents). A similar idea was already expressed by Drucker (1989) when he proposed that firms should (like nonprofits do) start with the performance of their mission instead of financial returns. While it was reasonable for traditional industrial firms to focus on shareholders (as the by far most important providers of specific investments), modern knowledge-based firms have to coordinate the interests of different stakeholders who provide "equally important" specific investments. Unfortunately, it cannot be expected that there is a simple measure of success which is unanimously supported (like profit) by all these stakeholders. A strong mission can be a substitute for such a common goal and stress the common interest instead of putting emphasis on distribution conflicts. The more the organization needs specific investments by different stakeholders, the more such a mechanism becomes important.

It is interesting to note that the above theoretical reasoning is supported by the practical experience of the proponents of modern performance management systems, like the Balanced Scorecard (BSC). According to Kaplan and Norton, the starting point for the development of the BSC concept was the idea that traditional performance measurement systems were adequate in an industrial-age environment, but not for today's information age (see Kaplan & Norton, 1996, p. 2001a). While competitive advantage was mainly driven by superior management of tangible assets in the industrial age, it is

driven today by managing intangibles such as service, innovation, flexibility or knowledge (see also Chandler, 1990; Blair, 1995; Balkcom, Ittner, & Larcker, 1997). Traditional performance measurement uses an accounting model of the firm based on the assumption that all relevant information on performance can be expressed through financial measures and that the value creation process can be described (and managed) by a linear additive model. According to Kaplan and Norton (2001b) the additivity assumption is a reasonable simplification if the value creation process is mainly driven by the physical assets provided by shareholders. Industrial age companies mainly convert tangible resources (with individual market values) into products and create value as long as the sum of the price times the amount of output exceeds the (market) price times the amount of input. This value creation process can be adequately described using a financial, linear and additive accounting model (Kaplan & Norton, 2001b, p. 89). The situation, however, gets completely different if most of the firm's value comes from intangibles (which are provided by the stakeholders). Kaplan and Norton (2001b, p. 89) view company strategy as a specific way of linking tangible and intangible assets and they feel that in modern firms value is created by a strategy that links a set of (tangible and intangible) assets in a specific way. Consequently, value creation is not additive or linear and cannot be captured by linear and (mainly) financial cash flow driver models that try to link decisions to financial results in a "mathematical way".

It was argued above that the incomplete-contract-view of organizations confirms the primacy of shareholders in firms. Kaplan and Norton adopt this view and they place the shareholders' financial perspective on top of the BSC. They propose that a firm's strategy can be described by cause-and-effect-chains which show how a firm intends to build up human resources, internal business processes and relationships with its customers as drivers of financial performance (Kaplan & Norton, 1992, 1996). The cause-effect-logic is unidirectional with shareholder value as the ultimate effect to be achieved (see also Norreklit, 2000, p. 77). Hence, the BSC acknowledges the importance of stakeholders' implicit claims but it clearly uses an instrumental stakeholder approach (see Freeman & McVea, 2001, p. 199), which implies that implicit claims of stakeholders are fulfilled if and only if this increases shareholder value (in the long run). The BSC in its standard form, therefore, presupposes the existence of a primary stakeholder group (the shareholders) with unanimously definable (financial) goals on top of the hierarchy.

Other proponents of modern strategic performance management, however, do not adopt a purely "unidirectional approach" with primary stakeholders

(shareholders) on top and other stakeholders only as means to reach the end of shareholder value. For example, Atkinson et al. (1997) emphasize that for a strategic performance management system it is particularly important to define clearly what each stakeholder has to give to the organization and what each stakeholder expects from the organization in return.

The theoretical model provided in the previous section can be interpreted as the theoretical basis for such (multi-dimensional and multi-stakeholder) approaches to performance management.

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ALIGNING PERFORMANCE MEASUREMENT AND INCENTIVE SYSTEMS TO IMPROVE FINANCIAL PERFORMANCE

Adriana Rejc Buhovac and Sergeja Slapničar

ABSTRACT

One of the most challenging topics in the performance measurement literature relates to the question whether contemporary performance measurement systems improve financial performance and how is this improvement achieved. Are balanced performance measurement systems per se powerful enough to stimulate the efforts of organizational members and to channel these toward the achievement of the organizational goals? The paper discusses this dilemma and investigates the mediating role of the alignment between performance measurement and incentive systems for companies' improved financial performance. To provide empirical evidence, we use a multiple case-study approach with a survey and in-depth interviews. Our findings indicate that performance evaluations are based on a much narrower set of indicators than the one used for performance measurement and management control. However, alternative control mechanisms are in place to promote behavior and decision-making congruent with the company's strategy.

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1. INTRODUCTION

In the last 15 years, many new performance measurement models have been developed (Keegan, Eiler, & Jones, 1989; Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991; Lynch & Cross, 1995; Kaplan & Norton, 1996; Atkinson, Waterhouse, & Wells, 1997; Neely, Adams, & Crowe, 2001), which have considerably extended the perspectives of performance measurement. The authors of the contemporary models claim that there is a better alignment between the company's strategy and its performance measurement in the heart of the newly designed performance measurement systems (PMSs) whereby improved company profitability is supposed to follow. Empirical evidence about the positive association between the balanced performance measurement and increased financial performance is, however, inconclusive: the results of studies are mixed and partial (i.e. Abernethy & Lillis, 1995; Ittner & Larcker, 1995, 1997; Chenhall, 1997; Perera, Harrison, & Pole, 1997; Said, HassabElnaby, & Wier, 2002; Ittner, Larcker, & Meyer, 2003). It is therefore questionable whether balanced PMSs and their alignment with the corporate strategy per se are powerful enough to stimulate the efforts of the organizational members and to channel these efforts toward the achievement of the organizational goals.

Holmstrom and Milgrom's (1991) analytical model shows that management decisions are affected by performance measures included in their performance evaluation and compensation schemes. Similarly, Kaplan and Norton (2001) argue that balanced performance measurement should ultimately be linked to balanced performance compensation schemes. Although this claim is appealing, it provides no guidance how to overcome many difficulties associated with its actual implementation in practice, such as, how to avoid subjectivity in choosing and weighting the numerous and various new indicators used for compensation practices. Thus, empirical evidence confirms that, the evolution of contemporary PMSs has not yet been followed by the use of numerous (balanced) performance measures for incentive purposes.

The purpose of the study is to provide further empirical evidence on whether and how companies incorporate non-financial measures into their incentive schemes. We investigate whether the alignment of performance measurement with incentive systems is an important factor that mediates the relation between performance measurement and financial performance. We use a multiple case study approach that includes a survey and in-depth interviews with managers from different hierarchical levels to investigate these questions. Eight medium-sized companies from different industries were included in the study. Altogether, 112 managers from the first three

managerial levels participated in the survey and 47 managers were interviewed in addition.

The findings support the notion that in complex and dynamic business environments, companies rely on balanced performance measurement for improved management control and decision-making. However, we found that non-financial performance measures predominantly *indirectly* influence the superior's opinion about managerial performance. While the superiors' subjective evaluations rely on several non-financial performance measures, these performance measures are less often included in the management compensation contracts. More commonly, they are used in evaluations of overall long-term performance of managers and underlie promotions, dismissals, and consequent changes in managerial fixed pays. In addition, while companies see the alignment of incentive system with the balanced performance measurement as an internal source of efficiency, its effectiveness in practice depends on the combination of various other control mechanisms. These findings indicate that different performance measures have different roles in performance measurement and incentive systems.

The paper is organized as follows. Section 2 provides a discussion of the literature on contemporary performance measurement and develops the research questions. In Section 3, the research methodology is presented. A discussion of results follows in Section 4. Finally, conclusions, implications, and limitations are discussed in Section 5.

2. LITERATURE REVIEW AND RESEARCH QUESTIONS

The proponents of contemporary performance measurement models argue that measurement diversity will be positively associated with financial performance, if performance measurement is well aligned with strategy and value drivers. Extensive evidence indicates that the use of financial (accounting) performance measures in complex, dynamic, and uncertain environments results in dysfunctional managerial attitudes and behaviors, and low performance, which suggests that they should be complemented by qualitative or subjective performance measurement (Hartmann, 2005). However, the recognition that contemporary PMSs should encompass multiple financial and non-financial performance measures (Garrison, 1990; Eccles, 1991; Fisher, 1995; Merchant & Bruns, 1996; Kaplan & Norton, 1996, 2004) led to the question whether such enlarged sets of performance indicators should also be included in the managerial evaluations. Kaplan

and Norton (1996, 2004) promote that view, but they provide no specific guidance on how should the new performance measures be included in compensation schemes.

Literature is full of evidence of dysfunctional behavior, caused by inappropriate incentive system designs consisting of either distortional performance measurement and/or inappropriate pay-for-performance link. Exact monitoring of an individual's effort in a team production is not only costly but also quite impossible as non-separability of individual marginal productivity is the essence of team production resulting in a larger output than a sum of individual outputs (Alchian & Demsetz, 1972). In such situation, financial performance measures may give a distorted view of individual performance. The informativeness principle suggests that importance will be placed on additional, non-financial measures as long as they provide information beyond that contained in financial measures (Feltham & Xie, 1994).

Consequently, to mitigate the effects of one-sided financial measures, many companies consider non-financial aspects of performance for incentive purposes. While performance measurement literature underlines the importance of relying on a wide variety of performance measures, the psychological literature reveals that human cognitive limitations may prevent the desired effects. Baddeley (1994) shows that human information processing is limited to 7–9 items of information simultaneously. This implies that in an evaluation of a subordinate, superior's judgment will dominate in the process of choosing the measures. Hence, with the increased diversity of measurement, evaluator's discretion and subjectivity also increases. Subjectivity is manifested in numerous ways: by a decision which measures will be formally tied to the compensation and which will be considered in an indirect way over a longer term (the *choice* of measures). Subjective is also the *weighting* of various measures for the compensation scheme (even though all of them might be objective and quantitative). Non-financial measures are more often expressed qualitatively (such as project completion) and external benchmarks are less often available. Many important non-financial aspects of performance cannot be objectively measured. As a consequence, they remain outside the formal performance measurement but are nevertheless included into an overall superior's judgment (such examples are cooperation with employees, quality of the deals, problem solving, etc.). In addition, contrary to the financial performance measures, non-financial performance measures are less appropriate for decomposition, which results in the fact that they are unique to specific business units, whereas financial are common to many units. Also, subjectivity is involved in the judgment of how to consider them in the individual evaluations (Lipe & Salterio, 2000).

Baker, Gibbons, and Murphy (1994), on the other hand, argue that including subjective performance measurement, although in an imperfect way, may complement available objective performance measures. By doing that an implicit contract based on subjective performance assessment may improve or replace an explicit contract. In certain circumstances only a combination of both contracts can generate profit. However, this model assumes that superior is a principal and the residual claimant of subordinates' outputs. In reality, this is often not the case (Prendergast & Topel, 1993) which gives rise to biasing performance evaluations.

Moers (2005) provides evidence that an increasing number of performance measures and subjectivity in their choice and weights lead to less differentiating evaluations of employees. The incentives for such a lenient use of performance measures is in the psychological cost of communicating poor performance, favoritism, and preferences for equity in rewards (Prendergast & Topel, 1993). Similarly, Ittner, Larcker, and Randall (2003) documented that despite balanced performance measurement the use of subjectivity in weighting the measures allowed supervisors to ignore many performance measures even though some were leading indicators. This led managers to perceive rewarding system as uncertain in determining rewards and unjust (in the sense that it incorporates favoritism). Both papers conclude that under such circumstances there is little support for using diversified measures.

Lipe and Salterio (2000) highlight the cognitive difficulty involved with the BSC. They found that superior managers disregarded performance measures unique to the subordinate manager's unit. If unique performance measures do not affect subordinates' ex post performance evaluations, then the subordinate manager is unlikely to use those measures in ex ante decision-making. Whereas common performance measures often tend to be lagging (i.e. financial measures), unique measures are more often leading and the fact that they are found to be neglected for the evaluation purposes raises concern that they will not be sufficiently considered in decision-making. Banker, Chang, and Pizzini (2004) also confirm these findings, adding that reliance on unique measures will prevail when the evaluator has detailed business unit strategy information.

Moreover, the leader-member exchange theory posits that social context of performance evaluation may have a differential impact on obtained ratings: namely, the quality of superior-subordinate relationship decides about how relevant formally measured performance is for the subordinate's evaluation. Liking and tenure for some employees may exempt them from more objectively performance-based ratings (Duarte, Goodson, & Klich, 1993,

1994). However, evidence of that phenomenon is inconclusive (Vecchio, 1998).

The function of performance evaluation is both, in evaluating the contribution of each input-owner to the overall output, and in administering compensations conditional upon individual performance (Kunz & Pfaff, 2002). Acknowledging that the purpose of balanced performance measurement is also in providing a basis for more comprehensive performance evaluations and given the fact that companies invest considerable resources into it, many authors believe that performance evaluation is perfectly linked to rewarding. Empirical evidence does not confirm that. Roberts, Albright, and Hibbets (2004) observe that in the use of BSC performance evaluations, superiors are either inconsistent or they adjust bonus allocations for additional factors not included in the BSC.

Several theories provide explanations why performance evaluation is imperfectly linked to compensation. In many situations monitoring costs are higher than efficiency gains from using output-based pay. This explains why compensations are contingent on the hierarchical level and not on output level in many labor contracts. Such a scheme decreases the costs of individual performance evaluation whereas performance incentives exist in “the contest” for winning a higher rank (Lazear & Rosen, 1981). This suggests that empirical studies should separately study the performance evaluation effects on fixed and variable pay. While a variable pay is determined by a bonus formula and is evidently linked to performance indicators, it is much less clear how fixed pay is associated with performance on the long run. On the other hand, anecdotal evidence suggests that while bonuses are contingent on a handful of performance indicators, fixed pay depends on a holistic evaluation of managers by superiors. The question arises whether the introduction of contemporary balanced performance has changed both, the performance–bonus link and performance–fixed pay link. If so, to what extent has the focus been shifted from financial performance measures to non-financial ones? Given that motivation depends on two factors (Vroom, 1964): the expectancy that the effort will lead to certain outcome and the valence (attractiveness) of the outcome, this is not a trivial question. Fixed pay may have a larger valence for a manager with less well-understood relationship between his effort and the outcome levels, whereas for the variable pay the opposite may be true.

The presence of imperfect relation between formal evaluation and compensation is also related to the fact that incentive system is often complemented with alternative organizational controls and, as argued by Chenhall (2003), studies that do not control for these elements within the research

method may report spurious findings. Alternative controls comprise a wide range of formal and informal mechanisms whereby *informal* mechanisms relate to selection, training, transfer, career path of managers, etc. (Martinez & Jarillo, 1989; Bartlett & Ghoshal, 1989), and communication of values and beliefs (Simons, 1995). *Formal* control, on the other hand, is a group of mechanisms that along with performance measurement and incentive system (Ouchi, 1977) encompasses organizational structure, formalization and written rules, policies, job descriptions, etc.

In summary, presented evidence shows that the inclusion of diverse (financial and non-financial) performance measures for incentive purposes is not a straightforward process. Its consequences are far from being well understood and its effectiveness depends on a large set of economic, social, and psychological factors. The above discussion leads us to investigate the following research questions:

Overall research question. Is a positive association between the balanced performance measurement and financial performance achieved by the underlying alignment of performance measures for incentive purposes?

Research question 1. Based on the diversity of performance measurement, can we differentiate between companies of various financial performances?

Research question 2. Are various (financial and non-financial) performance measures included in managerial evaluations and how?

Research question 3. To what extent are evaluations based on diverse performance measures tied to rewards? Do they differently influence the fixed and variable pay?

Research question 4. Is there different intensity of the linkage between balanced performance evaluations and rewards among companies of various financial performances?

Research question 5. To what extent will a performance measure excluded from ex post managerial evaluation be considered by a manager in his or her ex ante decision making?

3. RESEARCH METHODOLOGY AND SAMPLE COMPANIES

We designed a research methodology that includes two distinct components: a survey and a field research based on multiple cases. The choice of research method arises from the complexity of the subject matter and the interrelation of variables. The study started in 2004. As we proceeded, we were continuously adding new companies to be able to replicate the methodology and permit empirical generalizations. Altogether, eight Slovenian companies are included in the study. The researcher's intimate connection with the

organizational reality along with the multiple data and cases facilitated discovering patterns among the comparison cases, obtaining the anecdotes explaining the patterns observed, detecting the boundaries that shape and limit relationships, and providing the construct validity that is ultimately required in developing high-level theory (Lindsay, 2004).

Companies come from different industries and have a wide variety of competitive and organizational characteristics, which introduces diversity into the sample. Table 1 provides a list of studied companies with their respective industries and selected basic indicators of financial performance. To provide anonymity to the companies, we named them after the industries they operate in. Financial performance is in the core of our interest but its direct comparison among studied companies is clearly inappropriate. Therefore, we subjectively clustered companies into three groups based on their financial performance compared to their industry: group 1 comprises of 'companies in financial distress'; group 2 includes 'average performers'; and group 3 'above-average performers'. The classification criteria rely on a combination of financial performance measures.

Table 1. Classification of Companies based on their Average Financial Performance in the Period 1999–2004.

Companies in Financial Distress	Average Performers	Above-Average Performers
<i>Company 1: Shoemaker 1</i> Loss from 1999 to 2002 Recovery in 2003 Negative real sales growth –9.8%	<i>Company 3: Food processing</i> ROA 5.3%, ROE 6.5% Real sales growth 2.7% Real profit growth –2.6%	<i>Company 7: Steel buildings</i> ROA 5%, ROE 10.1% Real sales growth 9.3% Real profit growth 7%
<i>Company 2: Ferrite and magnetic components</i> Loss from 2001 on A subsidiary company	<i>Company 4: Medical supplies</i> ROA 1.56%, ROE 1.84% Real sales growth 6.7% Real profit growth 25.4%	<i>Company 8: Telecommunication systems</i> ROA 4.5%, ROE 19% Real sales growth 8.6% Real profit growth 31.3%
	<i>Company 5: Warehouse and real estate renting</i> ROA 3.2%, ROE 6.9% Real sales growth 4.5% Real profit growth –1.4%	
	<i>Company 6: Shoemaker 2</i> ROA 2%, ROE 4% Real sales growth 3.6% Real profit growth 13.2%	

Each company is now briefly presented.

Company 1 – Shoemaker 1 is one of the biggest Slovenian producers of fashion women's and men's footwear. The company had 362 employees at the end of 2004 and is still in the ownership of the Republic of Slovenia (80 percent). Over 50 percent of its sales is created by its own collection; but it also produces footwear for recognized foreign trademarks. Its markets are in Slovenia, Italy, and Croatia.

Company 2 – Ferrite Components manufactures soft ferrite and magnetic components. Most of the products are exported to the well-known companies worldwide and used in various segments of application (telecommunications, industrial electronics, sensors, automotive industry, data processing systems, etc.). Company currently has 420 employees. In 2005, a start-up of the production in China is planned and 20 percent of the production range of ferrite cores will be redirected to the new manufacturing site in China.

Company 3 – Food Processing with 1100 employees is one of the leading producers of food and non-alcoholic beverages in Slovenia and in the Balkans. Company's most important product lines include water, non-alcoholic beverages, baby food, the Unilever line, and production of food additives. 70 percent of its products are sold in Slovenia; additional 20 percent are sold in South-Eastern Europe. Company has three production units in Slovenia and numerous subsidiaries in ex-Yugoslavia, Germany, and Russia.

Company 4 – Medical Supplies is engaging in the manufacture of hygienic-medical products (60 percent of the company's turnover) and general consumption line of products for personal hygiene, infants, and household. Manufacturing sites are all located in Slovenia; trading subsidiaries are established in ex-Yugoslav countries as well. With 740 employees it markets over 300 different products and 11 sets of products are protected by a trademark. About 15 percent of the company's turnover is generated by exports to demanding European markets, while two-thirds of production is sold on the Slovenian market.

Company 5 – Warehouse and Real Estate Renting is a privately held company whose activities include development and management of property intended for business, trading, entertainment, sports and recreation, together with development of business and technical process of logistics and distribution. It started up with warehousing; today, its premises include shopping malls, logistics, offices, sports and leisure, and parking garages, all within an area of over 360,000 m². It has 362 employees. With the recent investments, it has become the largest business, shopping, sport-leisure and cultural center of Europe.

Company 6 – Shoemaker 2 manufactures athletic and fashion footwear. It is the leading producer of cross-country ski boots with a 30 percent world market share. Sport lines also include downhill ski boots (2 percent of the world's downhill ski boots) and mountain climbing boots. The fashion lines in both women's and men's footwear account for two-thirds of its entire production. It has a well-organized network of retail stores in the Central and Eastern Europe as well as distributors and representatives around the world. Each year, 1,115 employees in manufacturing sites in Slovenia, Bosnia and Herzegovina, and Romania produce over 1.5 million pairs of shoes and boots. Over 65 percent of production is sold abroad under the company's own brand name.

Company 7 – Steel Buildings designs and produces steel structures widely used in modern building industry. It sells 65 percent of its production to foreign markets, in particular to the Western Europe (29 percent) and to the Eastern Europe (36 percent). The company has 460 employees.

Company 8 – Telecommunication Systems is a telecommunications equipment, service, and solution provider in the carrier and enterprise segments. The company has 1,000 employees of which more than 400 work in the R&D department. Company has established technological partnerships with Intel, Motorola, and Siemens. Target markets include countries from Central, Eastern, and South-Eastern Europe.

In the first phase of the study, we surveyed 112 managers (see Tables A1 and A2 in the Appendix) with a questionnaire that focused on the use of performance measures for decision-making as well as for incentive purposes. We surveyed managers at the first three managerial levels to provide different perspectives of the performance measurement system and in particular measures that managers at different hierarchical levels actually use.

In all studied companies, PMSs collect numerous performance measures. With respect to performance measurement diversity, a representative selection of both financial and non-financial performance measures was taken from the underlying literature. Altogether, 41 performance measures were listed. Each respondent was asked to grade the importance on a scale of 1–4. The distinction in performance measurement is not in the amount of information available but in the importance managers ascribe to different dimensions of performance. To find out about them we normatively grouped 41 financial and non-financial measures into eight dimensions of performance measurement. These dimensions are (see Table A3 in the Appendix): (1) Financial Performance, (2) Customer Perspective, (3) Quality, (4) Processes, (5) Environmental Performance, (6) Employee Relations,

(7) Supplier Perspective, and (8) Research and Development. Eight dimensions of performance are composed variables and the score each company gets on a dimension is calculated as a mean value of performance measures on all three hierarchical levels.

To provide an in-depth knowledge of the company context, a better understanding of the managers' views of performance measurement and its use for their evaluation and rewarding we conducted altogether 47 semi-structured interviews in all surveyed companies. Information from interviews helped to analyze the structure of performance measures for evaluations and rewarding. We also attempted to find reasons why some indicators used in the PMS are not used for incentive purposes.

With respect to the implications of the performance measurement on current and future financial performance, we analyzed the differences in performance measurement system designs between companies in financial distress, average performers, and above-average performers.

4. RESULTS AND DISCUSSION

The first research question relates to the *differences in the diversity of performance measurement systems among companies of various financial performances*. In other words, we are interested whether better performing companies have more balanced PMSs as others. We analyzed each company's PMS's profile by calculating the average grades the CEOs and executive directors (the board) ascribed to different dimensions. First level managers' responses allow for inferring about their corporate PMSs' multidimensionality and balance. Grouping them is justified by the fact that executive directors are in charge of the overall performance of the company. Companies' PMSs are presented in Figs. A1–A3 in the Appendix. As can be seen from these figures, CEOs and executive directors monitor several aspects of performance, however, with varying degrees of importance. Graphical presentation of PMSs shows that there are no significant pattern differences among the three groups of companies. In other words, there is no evidence that above-average performers would have more balanced performance measurement in comparison to average performers or companies in financial distress. The interviews revealed that some managers are aware of contemporary approaches in performance measurement and have intentionally started to develop an adapted version of Kaplan and Norton Balanced Scorecard model. Some other companies follow the practice of balanced measurement intuitively, because in their managers' own words "... it is

logical to do so". They have developed their measurement systems through time and with no reference to the Balanced Scorecard model.

The second question refers to the *inclusion of various (financial and non-financial) performance measures into managerial evaluations*. Despite a general consensus among managers interviewed that the alignment between PMSs and incentive systems is critical to channel employees' efforts toward the achievement of organizational goals, in practice it is managed with varying degrees of success. While interviewed managers and questionnaire respondents use several indicators for business decision-making and control, only a small number of performance measures are used for evaluation purposes.

An explicit, formal evaluation procedure is in place in only two out of eight sample companies: the first one is Company 2, Ferrite Components, a company in financial distress where the CEO sees explicit evaluations of managers as a step toward a revival of the company. The second company, Steel Buildings, is an above average performer. Its CEO has been found to be very knowledgeable about the new management approaches many of which she introduced in her CEO practice. Both companies have introduced explicit evaluations schemes also tied to bonuses in the year of the study (2004), which does not allow for making conclusions about the performance evaluation scheme effect on the company's financial performance. In both companies the evaluation scheme is general and applied to all managers. In the Steel Buildings, five dimensions of performance are considered for evaluation purposes – quantity, quality, customer relations, cost awareness, and innovations. Within these five dimensions, different performance indicators are chosen according to the dimension's relevance for the work of the evaluated manager. Eighty percent of indicators measure individual performance and 20 percent of indicators are common to more units. Among individual indicators, the quality of individual work and customer relations are subjectively assessed by a subordinate manager. An interesting performance indicator was found in the Ferrite Components: the CEO introduced subjective measure of the quality of relations with other departments. The intention was to overcome narrow horizon of departmental managers who may see the end of their tasks in the completion of a certain phase of the production with no interest in the overall costs and quality of products. This indicator promotes cooperation among departments and efforts to achieve common goals.

Both companies have intentionally postponed the tying of bonuses to the evaluation scores in the first couple of months after implementation. They decided to allow employees to adapt to the new evaluation practice. They

claimed that public disclosure of certain scores alone has already brought about enormous changes in employee behavior.

Company 5, Warehousing and Real Estate Renting, may be distinguished from others by its intensive reliance on financial performance measures. Managers of business units are monthly checked for their financial results and sanctioned for poor performance. Company ROA is decomposed to ROI of single buildings. The sanctions for not achieving targets, however, do not result in a decrease in pay but as a social pressure from colleagues and superiors. Every manager is aware that by not achieving targets “... he or she will lose position no later than in two years”.

The performance evaluation practices of the rest of the companies resemble a relaxed style of reliance on budgets. Their managers' performance is checked on a quarterly basis. Many evaluators claimed that the best evaluation of their subordinates is the one based on their subjective holistic evaluation of several aspects of performance. They observe achievements of targets but through time they also learn who is trustworthy, reliable, and committed and they consider the obtained ratings accordingly. This finding supports the leader–member exchange theory (Duarte, Goodson, & Klich, 1993, 1994). Social relations play an extremely important role in performance evaluation.

The third research question explores *the extent of evaluations tied to rewards and whether they differently influence the fixed and variable pay*. In most companies under study, only fixed compensation is in place. Changes in fixed pay and decisions about promotions and dismissals are still based on a holistic evaluation of superiors. In a holistic evaluation objective results matter only in a long run, whereas short-term variability of objective results does not affect compensation.

There are several explanations of this phenomenon. Firstly, the roots of prevailing fixed compensation can be found in the previous egalitarian compensation model (Warner, Edwards, Polonsky, Pučko, & Zhu, 2005) and in continuing old (outdated) compensation practices. Secondly, managers fear implementing formal incentive systems because of poor understanding of the magnitudes of the incentive effect (MacLeod, 1995). Several interviews revealed that fear. The underlying reason is explained by the fact that given the environmental complexity, complete contingent contracts cannot be written and, hence, principals use implicit contracts including high morale, loyalty, and team spirit. These so-called self-enforcing contracts help align the incentives of the group (Alchian & Demsetz, 1972).

In the Ferrite Component and the Steel Buildings, formal evaluations affect the variable part of the salary without exception. In the Ferrite

Company, the span of the bonus is up to 30 percent of the monthly fixed salary paid every quarter, which is as much as 10 percent per month (Table A4 in Appendix). In contrast, the other financially distressed company, Shoemaker 1, claims that the use of a performance-based incentive scheme is impossible due to a pressure for decreasing costs of labor and the managers' belief that an incentive system can only be put in place when the company's strategy (products, markets, and technology) is well determined and successfully launched, otherwise it does not produce any motivating effects. The difference between the two companies is in the stage of restructuring: while the first distressed company has been taken over by a larger company and has already finished restructuring and begun with the implementation of a growth strategy, the second company is still in the phase of restructuring. The Steel Buildings practices negative bonuses of maximum minus 15 percent of the fixed salary. This implies that an average performance yields no more than a fixed salary whereas below average performance is sanctioned. Given that every employee is evaluated and rewarded based on five performance indicators, it is actually difficult to maximize all of them, which renders the achievement of plus 30 percent over the fixed salary hardly attainable. According to the CEO, sanctions and rewards are much less monetary than psychological. In short, in both companies where explicit evaluation scheme is in place, the scheme is perfectly tied to the bonuses.

The fourth research question investigates the *intensity of the linkage between balanced performance evaluations and rewards among companies of various financial performances*. Despite the increasing trend to incorporate non-financial performance measures (such as customer satisfaction, quality, etc.) in PMSs, six of the sample companies rarely apply them. Their common argument was that their use for rewarding purposes might violate the principle requiring that a measure is controllable from the point of view of the controlled employee. In addition, as we discussed the importance of aligned performance measurement and incentive systems in interviews, the issue of measurability was often raised. Managers would imply that it is very difficult to design fair incentive systems, for middle management in charge of diverse projects and functions (i.e. quality manager, environmental manager, controller, etc.), whose job performance is often only indirectly linked to final outcomes, in particular. Although the notion of being accountable (only) for what one is able to directly influence may be viewed as conforming to a commonly held concept of justice, it should be noted that a strict application of the principle would imply that in most cases even the use of budgets for managerial performance evaluation would not be feasible, since

especially in uncertain and complex organizations, with people working in joint effort, the possibility to single out individual responsibilities is severely limited (Hartmann, 2000).

As reported, only in two companies (Ferrite Components and Steel Buildings) balanced performance evaluation is linked to the bonuses by an explicit formula. As these two companies are at both extremes of financial performance, we cannot conclude that this indicates a positive association between the intensity of linkage between performance evaluation and rewards and financial performance. However, it does suggest that both companies that have exhausted many other possibilities to improve their financial performance are seeking for additional improvements through their incentive systems.

Research question five investigates *to what extent will a performance measure excluded from ex post managerial evaluation be considered by a manager in his or her ex ante decision-making*. As presented so far, the evaluation schemes for bonuses include only a handful of performance measures whereas contemporary PMSs are very comprehensive and extensive. Our findings show that an explicit consideration of a performance indicator is not the only control mechanism and does not de-motivate from the use of other performance measures. Managers are well aware that they are being constantly monitored by their superiors and that their overall performance, objectively and subjectively determined, is considered for their long-term rewards, in particular fixed pay. Incentive systems as well as PMSs represent only a fraction of a management control system that is directed into influencing human behavior. Other control systems may assist in the achievement of organizational goals. Earlier studies reveal that there are systematic differences in management control systems applied in companies that compete in different ways (Simons, 1990). In our study, we were able to identify some contextual variables that influenced the nature of management control system in place.

A presence of a controlling shareholder has been found to be one of the major determinants of the tightness of a management control system. A major owner(s) can well articulate the interests, which are communicated by various mechanisms to lower level managers. As already mentioned, the Ferrite Components has been taken over by a larger company, which tightened the control of all processes including control of the company's performance measurement system. After a management buy-out, the Warehousing and Real Estate Renting has established very clear financial objectives and a financially focused performance measurement system. The Steel Buildings is to a large proportion owned by its employees, which

aroused the owner's interests in them. They all understand that financial performance will ultimately benefit them. All other companies have dispersed ownership structure and consequently, evidently less tight management control systems.

In most companies with a modest use of either financial or non-financial performance measures formally included in their incentive systems, other forms of motivating and stimulating human behavior are in place. These include public disclosures of individual results (on internet, in a company newspaper, or on company gatherings where the CEO publicly rewards best performing managers as is the case in Company 8); regular meetings and discussions of individual or team performance, promotions, training and education, as well as other fringe benefits.

In accordance with earlier empirical evidence, in complex and dynamic business environments effective organizations may combine tight controls with more open, informal, and flexible information and communication systems (Simons, 1987; Chenhall & Morris, 1995; Chapman, 1998) to channel employee behavior toward the achievement of overall organizational goals. We conclude that empirical evidence gained by studying eight companies is somewhat contrary to the belief that managers will neglect diversified performance indicators in their decision making if they are not used for their evaluation (Lipe & Salterio, 2000). The explanation for that is in the fact that performance evaluation and incentives is not the only type of control and should not be considered in isolation. There are various mechanisms in place, ranging from informal to formal that help promote congruent behavior and the use of diverse performance measures. Under specific circumstances, tight control may substitute incentive systems, whereas in other companies the level of trust is so high that it substitutes the need for tight control and explicit incentive systems.

5. CONCLUSIONS AND LIMITATIONS

Chenhall (2003) reports that a consistent stream of research over the past 20 years has confirmed that uncertainty has been associated with a need for more open, externally focused, non-financial styles of management control systems. Many of these findings were confirmed in our study. All in all, we found that companies of different financial performance have balanced PMSs in place, with or without a reference to the Balanced Scorecard. This suggests that the notion of diversified performance measurement can no longer be considered a potential competitive advantage per se.

In the conclusion, we return to our initial question: Is a positive association between balanced performance measurement and financial performance achieved by the underlying alignment of performance measures for incentive purposes? All in all, we cannot conclude that balanced performance measurement and its alignment to incentive systems alone will bring about better financial performance. Based on the evidence from eight studied companies we found that an explicit incentive system is necessarily narrower than a performance measurement system as it typically includes only a handful of measures. Despite formal PMSs, performance evaluations are subject to superior's subjective decisions. Subjectivity is not necessarily negative as it may mitigate distorting effects of objective measures in a rapidly changing external and internal environment. But it also allows favoritism, superficial evaluations, and perceptions of non-transparent incentive system. Even in the two companies with explicit bonus formulas, the formula contains measures that are only subjectively observable and not part of a formal performance measurement system. Weighting of the measures is also subjective and the controllability principle is not respected. By tying compensation to the overall performance, superiors communicate the message about each employee's contribution to it. In accordance with previous findings (Ittner, Larcker, & Meyer, 2003), we also found evidence that an explicitly balanced evaluation scheme is considered more fair, which beneficially influences performance measurement satisfaction. Managers of companies without such a system in place have expressed the need for more explicit performance evaluations.

As with many studies, this study has several limitations. One limitation is that the current selection of cases does not best suit the requirements posed by Eisenhardt (1989, 1991) about the replication logic of case studies. Another limitation is that the study uses self-reported survey data, which led to overly beneficial responses from the respondents on all managerial levels. The study based on eight cases is exploratory in nature, its qualitative method has the power of linking several aspects of the subject matter, but it does not allow generalizations. Our study has confirmed some of the earlier findings and hopefully invoked some ideas for future research in this field.

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APPENDIX

Table A1. Functional Position of Respondents of Questionnaires.

Company	Position					Total
	BF	BU	CEO	ED	SE	
1	5	1	1	0	5	12
2	1	2	1	1	7	12
3	6	4	1	1	10	22
4	2	2	1	4	3	12
5	0	4	1	4	4	13
6	4	2	1	1	7	15
7	2	7	1	0	8	18
8	2	4	0	2	7	15
Total	22	26	7	13	51	119

Note: CEO, Chief Executive Officer; ED, Executive Director (Member of the Board of Directors); BF, Business Function Manager (e.g. Purchasing, Human Resources, Manufacturing, Marketing); BU, Business Unit or Business Division Manager; SE, Sector Manager (units within main divisions, program managers, project managers).

Table A2. Position of the Interviewed Managers.

	CEO	ED	BU	BF	SE: Various Functions	Total
Hierarchical Level	1	1	2	2	3	
Shoemaker 1				3	2	5
Ferrite components	1	1	2		2	6
Food processing		2		1	3	6
Medical supplies	1	1	2		2	6
Warehouse and real estate		2	2	1	1	6
Shoemaker 2	1	1		2	2	6
Steel buildings	1	3		1	1	6
Telecommunication systems		1	1	3	1	6
	4	11	7	11	14	47

Note: CEO, Chief Executive Officer; ED, Executive Director (Member of the Board of Directors); BF, Business Function Manager (e.g. Purchasing, Human Resources, Manufacturing, Marketing); BU, Business Unit or Business Division Manager; SE, Sector Manager (units within main divisions, program managers, project managers).

Table A3. A List of PMSs' Dimensions and Performance Measures included in their Composition.

Financial	Return on equity (ROE)
	Return on assets (ROA)
	Sales growth
	Earnings growth
	Liquidity
	Economic value added (EVA TM)
	Return on investment (ROI)
	Value added
	Sales per employee
	Profit margin
Customer	Market share
	Share of customer's wallet
	% of new customers
	% of customers lost

Table A3. (Continued)

	% of sales to new customers
	Customer profitability
Quality	Total cost of quality
	On-time deliveries
	Customer complaints
	Cost of grievances
	Revenues lost related to low process quality
	Cost of scrap and waste
Environmental	Environmental impacts
	Environmental costs
Employees	Absenteeism
	Employee turnover
	Employee satisfaction
	Training hours per employee
	Training costs per employee
	Employee innovativeness
	Number of injuries
	% of highly educated employees
Supplier	Quality of material
	Supplier flexibility (e.g. % of supplier on-time deliveries)
	Supplier partnership (e.g. % of suppliers with whom you do business for 5 years or more)
R&D	Share of R&R expenditures in sales
	Share of new products/services in total sales
	New products/services introduction
	Time-to-market
Processes	Manufacturing cycle efficiency
	Capacity utilization (actual, planned)

Table A4. Incentive Systems in Sample Companies.

Company	Incentive System	Structure of Incentives
1. Shoemaker I	No	No
2. Ferrite components	Implementation phase	<ul style="list-style-type: none"> • 70% of the variable pay is based on individual performance (2 performance measures), team performance ('internal client' evaluations), and on employee work attitude (subjective evaluation by the superior) • 30% of the variable pay is based on the company performance measured by a cash flow indicator of financial performance • Incentives are paid to employees on a quarterly basis
3. Food processing	No	<ul style="list-style-type: none"> • Employee training and communications with employees are primary motivators • Incentives are eventually paid to employees based on subjective evaluation of superiors • Managerial compensation is fixed, variable pay is subject to the shareholders' assembly's approval of lump sum bonuses
4. Medical supplies	Yes/No	<ul style="list-style-type: none"> • Formal system of performance measures is developed but lacks criteria on many measures (triggers) • Annual performance evaluations for managers take place but goals are too high • Production workers are stimulated to exceed the preset quantitative norms • Subjective evaluations of employee work efforts • Proposed rewards are rarely approved by the top management
5. Real estate renting	No	<ul style="list-style-type: none"> • Managerial compensation is fixed, variable pay is subject to the general assembly's approval based on five financial indicators

Table A4. (Continued)

Company	Incentive System	Structure of Incentives
		<ul style="list-style-type: none"> • A mechanism of negative stimulation (dismissals) based on poor financial performance
6. Shoemaker 2	No	<ul style="list-style-type: none"> • Managerial compensation is fixed • Production workers are stimulated by exceeding the preset quantitative norms
7. Steel buildings	Yes/No	<ul style="list-style-type: none"> • Managerial compensation is composed of a fixed component and a negative and positive variable pay within that ranges from 15% to 30% of the fixed pay • Incentives for managers are related to bonus formula but negative stimulation (dismissals) based on poor financial performance is also present • Top management has no performance incentives
8. Telecommunication systems	Implementation phase	<ul style="list-style-type: none"> • Current employee compensation is primarily fixed • Employees' variable compensation is related to the success of completed projects (up to 30% of fixed compensation) and to annual subjective evaluation of superiors (a fixed reward is paid to recipients) • Managers have fixed salaries, variable compensation is related to annual goal achievement and varies from 14% to 16% of the fixed salary • A new incentive system is being implemented with specific incentive performance measures and criteria

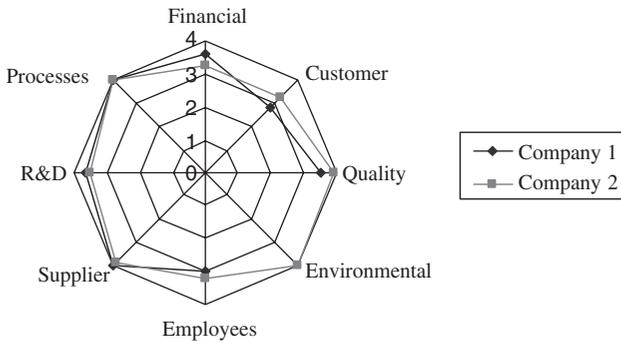


Fig. A1. Performance Measurement Systems in Financially Distressed Companies.

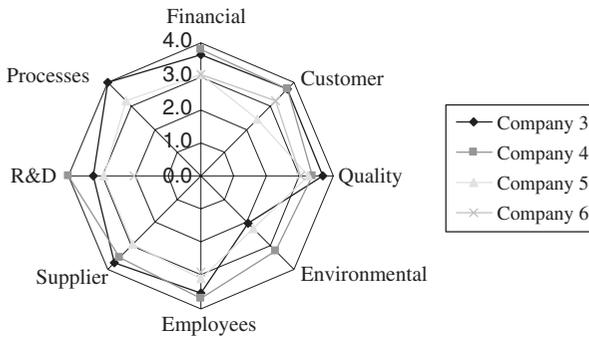


Fig. A2. Performance Measurement Systems of Average Performers.

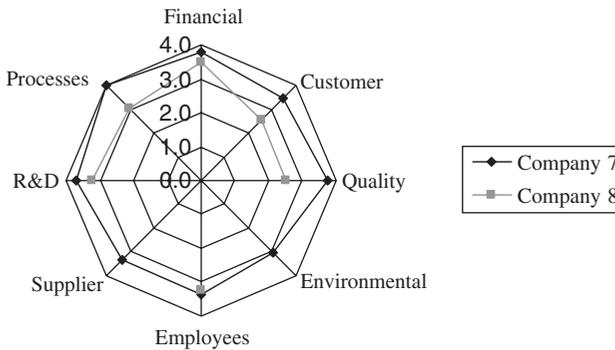


Fig. A3. Performance Measurement Systems of Above-Average Performers.

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