Business Performance Measurement and Management
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New Contexts, Themes and Challenges
This book is written in memory of Prof. Piero Lunghi, smart academic, brilliant innovator, great friend. Moreover, it is dedicated to Manuela, which has felt the pain and joy of this project, and I thank her for her love and support.
Foreword

I am delighted to be writing the foreword to this new book on performance measurement, not least because it introduces a new generation of performance measurement scholars. It is clear from the papers contained in this book that this new generation of scholars is building on work that has gone before, but taking performance measurement in new directions. These new directions can be conceptualized in three ways – by context, by theme and by challenge.

New contexts are illustrated by the papers on measurement in small and medium sized enterprises and measurement in fast moving organizations – e.g. the motor sport industry. These two contexts have been under-researched in the past. Much of the traditional research in performance measurement has focused on large private and public sector organizations, often operating in relatively slow moving environments. To enhance this work by exploring the challenges of measurement in small and medium sized enterprises, as well as in fast moving environments is welcome.

In terms of themes – the papers in this book extend the existing research literature by exploring issues such as the link between measurement and environmental performance and between measurement and risk. Two themes that are clearly growing in prominence and that are set to have significant implications for the world in which we live.

In terms of challenge – it is particularly pleasing to see new research on the dynamics of measurement systems. An underlying theme in many of the papers is the implicit – and sometimes explicit – criticism that much of the work on measurement to date assumes a static environment. The authors of these papers are right to highlight this shortcoming and clearly nothing can be further from the truth. Organisations are complex and dynamic entities. Their operating circumstances constantly change. Feedback and feed forward loops exist within and between organizations and these loops connect different dimensions of organizational performance. Too often our frameworks for performance measurement ignore this fundamental organizational complexity.

In drawing out these contexts, themes and challenges this book not only moves our understanding of performance measurement on, but also illustrates the rich stream of future research that is required.
Congratulations to all involved in pulling this book together and to the reader – enjoy the thought provoking papers you'll find within the book.

Cranfield, UK

Andy Neely
Eighteen years have passed since Eccles (1991), in the Harvard Business Review, proclaimed the “Performance Measurement Manifesto”. That publication could be identified as a radical innovation, seeing that it created a discontinuity in the research field evolution, based on decision to shift from treating financial figures as the foundation for performance measurement to treating them as one among a broader set of measures.

From then on, we attended the birth of many models, which tried to link strategy and operations by using performance measures, such as *The Determinants and Results Framework* (Fitzgerald et al., 1991), *The Balanced Scorecard* (Kaplan and Norton, 1992), *The Cambridge Performance Measurement Process* (Neely et al., 1996), *The Consistent Performance Measurement System* (Flapper et al., 1996), *The Integrated Performance Measurement System* (Bititci et al., 1997), *The Comparative Business Scorecard* (Kanji, 1998), *The Manufacturing System Design Decomposition – MSDD* (Cochran et al., 2001), *The Performance Prism* (Neely et al., 2001), *The EFQM Excellence Model* (EFQM, 2004), and others. In this evolution, transition from “Performance Measurement” (PM) to “Performance Measurement and Management” (PMM) is evident.

Neely et al. (2002) define “performance measurement” as the process of quantifying the efficiency and effectiveness of past action. Instead, a “performance measurement and management” system, it is a widely system, which has the role of collecting, integrating and analyzing performance measures for enhancing decision making processes, verifying strategies and creating alignment (Taticchi, 2008).

Nowadays, it is possible to affirm that PMM is a new consolidated discipline, that encompasses and gives more structured support to a large diversity of businesses.

Besides the traditional areas of applications, for instance production companies, service companies or public organizations, emerging research if focusing in new contexts, such as small and medium enterprises, collaborative environments and others.

Moreover, the multidisciplinarity of PMM is enlarging from the traditional perspectives of accounting, strategy and operations to new-ones, as confirmed by the growth of research exploring connections between PMM and project management, risk management, human resources management, or emerging topics as sustainability.
Finally, research on PMM is continuing its theoretical path so as to enhance the effectiveness of PMM systems and consequently their diffusion. Particular focus is given to the fulfillment of the “knowing-doing gap” (Cohen, 1998) which expresses the difficulty of companies in effectively translating information coming from the measurement of processes into effective tasks. As a consequence of that, emerging research focuses on the development of new PMM models, the test of traditional systems as well as the exploration of new way of measurement.

Therefore, the question “What is next?” in PMM research arises, and answer is needed in order to address future research and define a proper research agenda for next years.

The 1st International Summer School Piero Lunghi (ISSPL ’01) on “Perspectives of Business Performance Management”, New York – 2009, was an international event which grouped leading academics, scholars and practitioners to discuss PMM perspectives and present emerging areas of research.

This book includes a number of selected papers from the ISSPL ’01, providing a comprehensive overview of recent advances in PMM research.

The book is organized in three sections, so as to address futures research in terms of “What is Next?” by context, by theme and by challenge.

Perugia, Italy

Paolo Taticchi

References

I would like gratefully acknowledge some people, for their significant contribute in this book.

First, the Lecturers of the 1st International Summer School Piero Lunghi, New York 2009, on “Perspectives of Business Performance Management” of the University of Perugia, for having promoted research discussions in which the book contributions are developed.

Further, my mentors Professors Gianni Bidini and Paolo Carbone of University of Perugia for their support in this project; Eng. Luca Cagnazzo of University of Perugia for his effort in the revision of this book; Prof. Flavio Tonelli of University of Genoa for his general advice on the project; Prof. Lucio Ubertini and Salvatore Grimaldi of the H2CU Center for sponsoring the project. A special thanks to Prof. Kashi Balachandran, for introducing and driving my research on business performance measurement.

Moreover, a special thank to the chapters’ authors for their contributions and to Prof. Neely for writing the book’s foreword.

Finally, I would like to thank my family. Throughout all my endeavors, your love, support, guidance, and endless patience have been truly inspirational – “thanks” will never suffice.
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Part I
What is Next by Context: PMM in Small and Medium Enterprises
Chapter 1

Performance Measurement and Management in Smes: Discussion of Preliminary Results from an Italian Survey

Paolo Taticchi, Andrea Asfalti, and Francesco Sole

Abstract

Performance measurement and management (PMM) is a topic of increasing interest both in the academic and industrial ambits. While a large number of frameworks, case studies and surveys are available for large enterprises, little research has focused on small and medium enterprises (SMEs). As a consequence of that, little knowledge exist about the SME adoption of performance measurement systems, their use of financial and not financial indicators, the benefits in terms of strategy implementation and alignment. This paper present and discuss the preliminary results obtained from a survey research carried out within Italian SMEs. Interesting remarks are highlighted in terms of PMM diffusion, best practices and benefits in SMEs.

1.1 Introduction

The interest on Performance measurement systems (PMS), defined by Neely et al. (1995) as “the set of metrics used to quantify both the efficiency and effectiveness of actions”, has notably increased in the last 20 years.

Rose stated that “performance measurement is the language of progress for the organisation. It indicates where the organisation is and where it is heading. It functions as a guide to whether the organisation is en route to achieving its goals. It is also a powerful behavioural tool, since it communicates to the employee, what is important and what matters for the achievement of the organisation’s goal” (Rose, 1995).

While a control role was initially given to these systems, later emphasis was placed on the effective use of PMS in performance management processes. As a consequence of that, it is important to note the evolution of PMS as performance measurement and management (PMM) tool suitable to contribute to the continuous...
improvement of performance (Neely et al., 1995), to the definition, deployment and diffusion of strategy (Kaplan and Norton, 1996), to the alignment of operations with strategic objectives, to managerial development (Garengo et al., 2005), and to organisational learning (Kueng et al., 2001).

In recent years, literature has highlighted that PMM could play an important role also in supporting managerial development in small and medium-sized enterprises (SMEs). Moreover, some researchers point out that, even if general models were applied correctly, they would be inadequate for the particular characteristics of SMEs (Taticchi et al., 2008).

In particular Barnes have highlighted that “SMEs’ approach to performance measurement and management is often informal, not planned or based on a predefined model; performance measurement is introduced to solve specific problems and performance measures grow out of this process spontaneously rather than as a result of planning” (Barnes et al., 1998).

According to Garengo “in SMEs, planning is usually absent or limited only to the operation levels where performance is measured. In addition, performance measures usually focus on past activities. In other words, the aim is to gather information to support the control activities rather than the forecasting and planning processes” (Garengo et al., 2005).

Consequently, SMEs do not take advantage of the implementation of the PMM as a holistic tool aimed to plan strategy and to establish strong linkages from strategy to operations.

However, there is a lack of survey-based investigations of the current practices related to the implementation and use of PMM in SMEs. In order to fill this gap, an exploratory survey research has been carried out in 2009 aimed to investigate the characteristics of the PMM practices in the Italian SME context.

The goal of the research presented here is to contribute to a better understanding of the adoption and use of PMM in SMEs, with specific attention to the presence of a PMM system in these companies, the use of performance indicators, the design of the PMM system. The level of satisfaction expressed by the managers about the PMM they have implemented.

The remainder of this paper is organized in four sections. First, the research methodology is presented and the main research phases described. Second, the structure of the questionnaire is analysed making reference to the five sections it is composed. Third, the survey’s results are explained and finally some conclusions are summarized.

1.2 Research Methodology

The research methodology at the base of this paper relies on the work of Forza (2002), which provides the guidelines for conducting survey research in the field of operations management and related topics.

First of all, Forza (2002) classifies the different typologies of survey research as “exploratory survey research”, “theory testing research” and “descriptive survey
research”. Based on the different definitions, this work can be classified as “exploratory survey research”, since the main objective of gaining preliminary insights on the topic of performance measurement and management in the SME context.

Moreover, while “theory testing” is not part of this work, “descriptive survey research” fits partially in the scope of the survey, since the willing of exploring the diffusion of performance measurement and management systems within SMEs.

The choice of using “exploratory research” is justified by fact that performance measurement and management is not yet a consolidate theory such as manufacturing strategy or quality management, and therefore exploratory research is needed. In the case of “exploratory survey research”, the guidelines suggested by Forza (2002) are an adaptation of Pinsonneault and Kraemer (1993) work.

Particularly, it is highlighted the need of describing and justifying the following: unit of analysis, respondents, research hypotheses, representativeness of sample frame, representativeness of the sample and sample size, pre-test of questionnaire, response rate and data collection method. Remarks on the mentioned aspects are presented ahead.

The survey unit of analysis is the company as overall (the same unit will be used for interpreting the results). Consequently, since the company can not give answers, the respondent of the survey is identified in a person working in the company.

Particularly, in order to select the proper respondents for the questionnaire, entrepreneurs, plant directors, financial managers and quality managers have been identified as the people knowledgeable about PMM facts. Since the exploratory nature of the survey, hypotheses have not been formulated as not necessary.

Regarding the population frame, sample and sample size the survey focuses on SMEs as defined by the European legislation. Particularly, the survey is not sector dependent and the planned number of respondents for the exploratory study is fixed in 100. To date, 27 questionnaires have been compiled after 50 companies were contacted.

Regarding the data collection methodology, the authors asked respondents to visit a website (www.knowledgeasset.org/CVM/PMI) where the questionnaire could be filled while an assistant supported the respondent in the explanation of questions and questionnaire fulfillment over the telephone.

Such a solution has advantages in terms of costs and resource employment; and, at the same time, offers advantages in terms of data collection and analysis.

In fact, the fulfillment of the electronic questionnaire records data in an access database, from which a dedicated matlab application extracts automatically data and plots graphs and results of analyses.

The questionnaire wording (measurement instrument) relies on closed questions with nominal scaling (multiple choice items).

In order to increase the probability of the success of data collection, as indicated by Forza (2002), the protocol to be followed in approaching sampling units and administering the questionnaire has been developed and two scholars have been carefully trained on it.
Moreover, a pilot test of the questionnaire has been done through its submission to a target respondent. Such a test highlighted a good design of the survey as well as an excessive length for fulfillment. As a consequence of that, the authors went over the questionnaire and cut it of about 20%.

1.3 Structure of the Questionnaire

The questionnaire used for the survey is structured in five sections.

Section 1 is composed by the respondents and company contacts, company sector of business (ATECO code), company number of employees and turnover, market information.

Section 2 is composed by questions related to the presence of a PMM system in the company, the use of performance indicators, the implementation of the project in terms of reference frameworks used and problematic experienced.

Sections three refers to the design of the PMM system. A first group of questions focuses on the understanding of the company strategy definition and implementation. Particularly, the company strategy is defined through the SME’s Strategic Box (Fig. 1.1) proposed by Lunghi and Taticchi (2007), which has been developed starting from the Ansoff Matrix (Ansoff, 1957) and from the adaptation, accomplished by D’Amboise and Muldowney (1988) of Porter model to be applied in the SME’s contest.

Fig. 1.1  Smes strategic box
Each strategy, available for a company to be pursued, is represented by a “little cube” in the Strategic Box. The building of SME’s Strategic Box is based on the idea that, for SMEs, two parameters are needed in order to completely identify a strategy, respectively a “positioning choice” and a “strategic leverage”.

Positioning choices concern the market and the product. In these two fields SMEs can be considered as “Master of the Game”. This status implies that they can adopt, during their decision making process, a proactive approach instead of a simple reactive approach based on the choices made by other larger companies.

The third dimension (Martinez and Bititci, 2001) of the Strategic Box allows to evolve from the Ansoff model. The following Strategic Leverages are indeed considered:

- **Cost**: reduction of total costs related to the transformation and sale of product/service;
- **Quality**: enhance the quality level of the product/service by modifying the main product’s features;
- **Innovation**: innovate products, production processes and services;
- **Marketing**: improve the perception for customers of company’s brand.

The mix of Positioning choices and Strategic Leverages utilised by a company allows to identify 16 different typology of strategies that are therefore properly identified through the questionnaire.

Thereafter, the remaining questions of Section 3 focus on exploring PMM practices in terms of informatics systems, costs, stakeholders, planning, benchmarking, communication and alignment actions. Such information is essential to evaluate the integration and effectiveness of the PMM system, as highlighted by Taticchi and Balachandran (2008).

Section 4, the largest of the questionnaire, explore the use of performance indicators with reference to stakeholders, processes and capabilities available. SMEs’ stakeholders have been identified in suppliers, customers, shareholders, legislators, partners and employees (Taticchi, 2008). SMEs’ processes have been classified based on the the value chain representation of Porter (1985): logistics, operations, marketing & sales, service, procurement, technology development, human resource management, firm infrastructure and value creation. Capabilities affecting performances have been classified in IT capabilities and HR capabilities (Taticchi, 2008).

Finally, Section 5 poses a number of questions regarding PMM system effectiveness, benefits and satisfaction by using a Likert (1932) scale.

### 1.4 Results of the Survey

As before mentioned, the objective of this survey is to investigate the current practice about performance measurement and management systems in SMEs. The population frame was taken from the Chamber of Commerce database and we
used ATECO code to identify SMEs operating both in manufacturing and service sectors.

Using a random sampling process, 50 organizations were targeted and 27 companies have participated in the survey. In the following table (Table 1.1) the most significative survey results are shown gathered in four sections (the data of the first section are not reported due to privacy issues).

<table>
<thead>
<tr>
<th>Table 1.1 Survey’s results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 2</strong></td>
</tr>
<tr>
<td>Has your company implemented a structured PMS? 11 89</td>
</tr>
<tr>
<td>Has your company implemented Key Performance Indicators (KPIs)? 52 48</td>
</tr>
</tbody>
</table>

| **Section 3**             |
| Has your company implemented a business strategy? 89 11 |
| Is your strategy focused on a new market? 75 25 |
| Is your strategy focused on an existing market? 58 42 |
| Is your strategy based on a new product? 38 62 |
| Is your strategy based on an existing product? 71 29 |
| Is the price a key factor of your competitiveness? 29 71 |
| Is the quality a key factor of your competitiveness? 92 8 |
| Is the innovation a key factor of your competitiveness? 46 54 |
| Is the marketing a key factor of your competitiveness? 42 58 |
| Has your company implemented a systematic KPIs review process? 42 58 |
| Has your company implemented a performance reporting system? 38 62 |
| Are performance objectives linked to a rewards system? 42 58 |
| Are strategic performance objectives communicated to all organizational levels? 63 37 |

| **Section 4**             |
| Have you defined customers’ KPIs? 83 17 |
| Have you defined suppliers’ KPIs? 62 38 |
| Have you defined investors’ KPIs? 4 96 |
| Have you defined employees’ KPIs? 29 71 |
| Have you defined partners’ KPIs? 13 87 |
| Have you defined legislators’ KPIs? 4 96 |
| Have you defined KPIs for logistics? 81 19 |
| Have you defined KPIs for operations? 89 11 |
| Have you defined KPIs for marketing and sales? 70 30 |
| Have you defined KPIs for service? 56 44 |
| Have you defined KPIs for procurement? 85 15 |
| Have you defined KPIs for R&D? 56 44 |
| Have you defined KPIs for Human Resource management? 63 37 |
| Have you defined KPIs for firm infrastructure? 67 33 |
| Have you defined KPIs for financial value creation? 85 15 |
Table 1.1 (continued)

<table>
<thead>
<tr>
<th>Section 5</th>
<th>1(%)</th>
<th>2(%)</th>
<th>3(%)</th>
<th>4(%)</th>
<th>5(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>On a scale of 1–5, how is important for your company a PMS? (1 = not important; 5 = very important)</td>
<td>4</td>
<td>0</td>
<td>22</td>
<td>41</td>
<td>33</td>
</tr>
<tr>
<td>On a scale of 1–5, what is your level of satisfaction about the actual PMS of your company? (1 = not satisfied; 5 = very satisfied)</td>
<td>0</td>
<td>11</td>
<td>44</td>
<td>26</td>
<td>19</td>
</tr>
</tbody>
</table>

The results of Section 2, related to the presence of a PMM system in the company, highlight that only 11% of SMEs have implemented a structured PMS but 52% of them use key performance indicators (KPIs).

This suggests that there are substantial barriers to structured PMS development and implementation in SMEs.

The results of Section 3 related to the characteristics of the company strategy show that 89% of SMEs have implemented a business strategy which is focused more on a new market (75%) than on an existing market (58%).

The answers of the managers highlight that some SMEs are implementing a strategy focused both on a new market and an existing market. Otherwise 71% of companies have based the strategy on an existing product and only 38% have developed a new product.

About the key factors of their competitiveness, the results reveal that quality is the most important (92%) then innovation (46%), marketing (42%) and price (29%). The other results of Section 3 strictly linked to the practice of performance management point out that only 42% of companies have implemented a systematic KPIs review process and only 38% have developed a performance reporting system.

The data suggest that a lot of SMEs have KPIs which are not used in an effective way. Finally the results of Section 3 highlight that 63% of SMEs communicate the strategic performance objectives to all levels of the organization and 42% of them have linked the rewards system to the performance objectives agreed on.

The more interesting results of Section 4 are relating to the use of performance indicators with reference to stakeholders and processes. The table shows that most used KPIs about stakeholders are focused on customers (83%) and suppliers (62%), while only 29% of companies have implemented KPIs related to employees.

Very few SMEs have adopted KPIs aimed to analyze the performances related to investors (4%) and legislators (4%). In this case the results suggest that SMEs focus the attention on the stakeholders strictly connected to the revenues dimension (customers) and cost and quality dimensions (suppliers).

Finally, the answers of the managers about the use of KPIs aimed to investigate the performance of the processes shown in Porter’s value chain, highlight that all the processes are monitored.

In particular 89% of companies have implemented KPIs for operations, then 85% for procurement and financial value creation, 81% for logistics, 70% for marketing
and sales and 67% for firm infrastructure. The human resource management process is monitored by 63% of SMEs while service process and research and development (R&D) by 56% of companies.

The results of the last section (Section 5) point out that the managers evaluate the PMS as an important tool in order to correctly manage company’s performance and at the same time they are satisfied about the actual PMS currently implemented, even if, as we know, it is not a structured PMS.

1.5 Conclusions

This paper has presented the results of an exploratory survey research aimed to investigate performance measurement and management best practices within the SME context. Substantial barriers to structured PMS development and implementation in SMEs have been highlighted, while the use of KPIs is today quite popular. Moreover, assessment procedures and structured reporting find little space as well. Interesting results arose in terms of performance measurement versus stakeholders, where customers and suppliers receive large attention, while the contrary happens for company employees. The measurement of processes is definitely developed, and operations represent the process most controlled.

Finally, companies’ owners and managers consider PMS essential tools to drive businesses, and declare to be satisfied about the effectiveness of their today systems.

Such a consideration, in relation to the poor structure of PMS available today in SMEs, opens the need of future research in this field, as well as big margins for PMS effectiveness improvement in such a context.

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Chapter 2
New Integrated Information Systems
and Management Control Change in Small
and Medium Enterprises

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Abstract  This research attempts to explore the process of change and to examine in more depth the nature of the changes in management control which accompany the adoption of the new information technologies within small and medium enterprises. In particular, recognizing that management control change is a continuous organizational process (rather than an outcome), the trajectory of which is shaped by an incessant inter-play of several influences, this research intends to explore the way in which the implementation of a new integrated information system contributes to this process. To address this issue, the current research combines theoretical and empirical insights. After having reviewed the literature on the main topics and produced a theoretical understanding to illuminate the nature of the aforementioned changes, the research relies upon an illustrative case study concerning a medium-size cooperative society based in Italy. Recognising the complexity of organizational life, the field study does not aspire to isolate and define how and by how much ICT has been a driver of the management control change, but rather to explore the whole process of change in order to appreciate the diversity of interrelated influences which have shaped its trajectory and how these influences interacted with each-other. Among this inter-play of influences, the study aims then to investigate the particular role played by the two-way relationship between ICT and management control. The implementation of the new integrated information system has opened up several opportunities for the business management and in particular for the management control. However, so far, only part of these opportunities have been exploited. Furthermore, while it could be acknowledged that the new system facilitated the changes in management control both in its material and immaterial dimensions, it could not be concluded that they were the result of the implementation of the new system. Many other factors have interacted within the process of management control change. For example, of paramount importance has been the controller’s determination to enact the change. The case study analyzes
these factors and the way in which they have jointly facilitated and/or hindered the management control change.

2.1 Introduction

Management control in Small and Medium Enterprises (SMEs) is usually very simple: unstructured, centralized upon the entrepreneur and generally based on “historical information”.

However, nowadays several factors are pushing SMEs towards the adoption of more sophisticated (or structured at least) management control systems.

Above all, the globalization of the markets and the consequent increased competition, the context instability and the SMEs’ often severe financial situation lead to the need for much more information (and more efficient – i.e. reliable and quick) for the enterprise management.

Furthermore, some specific requests to adopt more sophisticated management control practices are now coming from the institutional context (requests which sometimes become obligations – i.e.: Basel II). Several more generic calls have also been made by public officers in charge of economic development, trade associations and professional bodies, and also by academics. In this sense, in the last few years particularly vigorous has been the push made by the consultants and software houses which try to persuade firms of the need for more control in order to sell their services and/or computer packages to management.

But is management control in SMEs actually changing? And, if so, how (what is the nature of the change) and by how much? Who or what leads the change? In particular, what is the contribution of the implementation of the new Information and Communication Technologies (ICT), especially integrated information systems?

The numbers of adopters of these ICT solutions among SMEs (mainly medium enterprises) is increasing rapidly. The reasons for implementing a new integrated information system in a SME are various (economic, technical, strategic and/or institutional reasons).

Despite the numerous arguments that could jointly explain the decision to adopt a new integrated information system within a SME, the roots of such decisions seldom reside in management control.

Although the new integrated information systems are not primarily designed to facilitate management control, it does not mean that they have no significant implications for the latter. Many changes could be expected due to increased integration of the business information flows and consequently easier and faster access to operational data (for example, see Johnson and Kaplan, 1987; Henson, 1997; Anastas, 1997; Wagle, 1998; Cooper and Kaplan, 1998; Sutton, 2000; Chapman and Chua, 2000; Quattrone and Hopper, 2000). Also, it is a common practice that when major scale changes are carried out regarding information systems, the logic of accounting and control also becomes a subject of evaluation and possible change.
However, so far there exists little published scientific evidence on the actual manifestation of these changes. After several calls to study the interrelationship between accounting and information technology (for example, Chapman and Chua, 2000; Hunton, 2002), in the last few years some experimental, field and analytical research has explored the effects of the new ICT systems on management accounting and management accountant’s work (for example see: Fahy and Lynch, 1999; Maccarone, 2000; Booth et al., 2000; Beretta, 2001; Granlund and Malmi, 2002; Caglio, 2003; Hyvönen, 2003, Scapens and Jazayery, 2003). However, these studies seldom focus on management control, especially in SMEs: the effects of the adoption of the new integrated information systems (mainly enterprise resource planning systems – ERPs) are usually studied within multinational organizations or large companies at least (Caglio, 2003, provides a longitudinal case study of a medium-sized company which explores the change in accountants’ expertise and role). On the other hand, it is also a fact that so far only large firms have experience of these systems for a relatively long time period: few SMEs have adopted a new integrated information system and most of the implementation projects still tend to be ongoing. We felt, however, that now is the right time to study these issues, as the actual developments in the firms can be observed. We are thus not forced to rely on accounts of what happened a long time after the fact (Granlund and Malmi, 2002).

Recognizing that, this study focuses on two different research questions:

– How does the process of implementing new ICT, especially integrated information systems, affect and is affected by management control change?
– What is the impact of the new integrated information systems upon traditional control methods, systems, practices, tasks, organization and role?

2.2 Background

The theoretical framework that informed our research combines the so-called “structurational model of technology” (Orlikowski, 1992) and its “practice-based extension” (Orlikowski, 2000) for analyzing the nature and role of technology in organizations, with the institutional framework provided by Burns and Scapens (2000) for studying processes of change (and particularly management accounting change). Both of these frameworks refer to the fundamental contribution of structuration theory (Giddens, 1976, 1979, 1984).

In particular, in the context of our study, we look at ICT as one of the factors that could affect (and which is affected by) the continuous process of management control change. More specifically, we recognize management control systems and practices as organizational rules, roles and routines that encode the existing institutions within the organization (see also Scapens, 1994; Busco, et al., 2001). The adoption of new information and communication technologies can lead to a change of these rules, roles and routines. If it actually does modify them, how and with what magnitude is neither predictable a priori, nor generalizable. It depends on many disparate factors which are different, not only from one company to another,
but also within the same organization if we consider two different points in time. Furthermore, these various factors interact with each other in a continuous, dynamic and dialectical process which make it very difficult, if not impossible, to agree on what has determined the trajectory of change and to what degree.

Recognising the complexity of organizational life, our research does not aspire to isolate and define how and by how much ICT has been a driver of the management control change, but rather to explore the whole process of change in order to appreciate the diversity of interrelated influences which have shaped its trajectory and how these influences interact with each-other. Among this inter-play of influences, we propose to investigate the particular role played by the two-way relationship between ICT and management control (we speak about a two-way relationship because ICT can both shape and be shaped by the management control).

More specifically, two main aims are central to this research: first, to produce a theoretical understanding to illuminate the nature of the aforementioned changes; second to provide detailed empirical evidence of such a change process by means of an interpretative longitudinal case study.

2.3 Theoretical Foundations: Conceptualizing the Role of ICT in the Management Control Change Process

For understanding the nature and role of ICT and management control in organizations we refer to the fundamental contribution of structuration theory (Giddens, 1976, 1979, 1984).

The usefulness of structuration theory in studying management accounting, and hence management control, has already been explored by Macintosh and Scapens (1990) who argued that management accounting can be theorized as modalities of structuration in each of the three dimensions of signification, domination and legitimation. The same has been done by Orlikowski (1992) with reference to technology in general and by Caglio (2003) with regard to ICT in particular (specifically ERPs).

Hence, recognizing that human activities (action) and institutions which structure these activities are not independent (as there is a duality between action and institutions), we identify ICT and management control as modalities of structuration. As such, they can both shape and be shaped by the human action and the institutions which govern organizational activity.

However, as noted by Archer (1995) structuration theory, since it does not incorporate historical time, is not particularly helpful for exploring process of change. Recognizing that, Barley and Tolbert (1997), starting from structuration theory, explored the relationship between agency and structure over time, and then outlined a framework describing the process of institutionalization. Afterwards, Burns and Scapens (2000) modified the Barley and Tolbert’s framework to develop an institutional framework for studying management accounting change (Fig. 2.1).

We will apply their institutional framework to explain some of our observations. This framework has been demonstrated to offer a credible and intelligible basis for the analysis and explanation of the forces that may drive accounting change and continuity (see Granlund, 2001; Busco et al., 2001).