RE-EXAMINING THE LEVERS OF CONTROL-FRAMEWORK: FROM INTERACTIVE CONTROLS TOWARDS "INTERACTIVE TRANSPARENCY" Case Rautaruukki Oyj.

Accounting
Master's thesis
Joanna Tero
2009

Department of Accounting and Finance
HELSINGIN KAUPPAKORKEAKOULU
HELSINKI SCHOOL OF ECONOMICS

HELSINKI SCHOOL OF ECONOMICS (HSE)
Department of Accounting and Finance
Joanna Tero

ABSTRACT
3.9.2009

RE-EXAMINING THE LEVERS OF CONTROL-FRAMEWORK: FROM INTERACTIVE CONTROL TOWARDS "INTERACTIVE TRANSPARENCY"
Case Rautaruukki Oyj.

Objectives of the study

The objective of this study is to critically re-examine Simons' (1995) levers of control-framework, which has been widely used in previous research, but received only limited attempts of further refinement. More specifically, this study takes a critical perspective with the attempt to see how the constructs of interactive and diagnostic control fare against empirics in a contemporary organization, which faces the challenges of today's business environment. The role of the controller in deploying interactive controls is also examined in this study.

Research method and data

The theoretical framework rests on literature concerning the use of interactive and diagnostic controls as well as the previous studies conducted on the role of the controller. In addition the study adopts new perspectives from action rationality (Brunsson 1982) and sensemaking in organizations (Weick 1995), when examining the role of the controller. The research method is a single-company case study. The empirical data was gathered by conducting ten semi-structured interviews mostly at corporate and divisional top-management level in March – May 2009.

Findings of the study

Based on the empirical evidence gathered in this study, contemporary organizations are characterized by data overload and transparency in accounting numbers. In this context the use of interactive controls is moving towards interactive transparency. In order to achieve organized action, the role of interactive controls rise as they offer the way of creating meaning around the abundance of accounting numbers. Diagnostic controls, on the other hand, may gradually become obsolete, as they remain too distanced form the organizational reality to prompt action. In this novel context of interactive transparency, the role of the controller can be understood as a sensemaker and a mobilizer. By selecting and framing important issues and encouraging the interpretation and sensemaking process, s/he builds the foundations for organized action.

Key words

Interactive control, diagnostic control, controller's role, action rationality, sensemaking in organizations

HELSINGIN KAUPPAKORKEAKOULU
Laskentatoimen ja Rahoituksen Laitos
Joanna Tero

TIIVISTELMÄ
3.9.2009

LEVERS OF CONTROL-VIITEKEHYKSEN KRIITTINEN TARKASTELU: INTERAKTIIVISESTA KONTROLLISTA KOHTI KÄSITETTÄ "INTERAKTIIVINEN LÄPINÄKYVYYS"

Case Rautaruukki Oyj.

Tutkimuksen tavoitteet

Tutkimuksen tavoitteena on kriittisesti tarkastella Simonsin (1995) levers of control-viitekehystä. Viitekehystä on käytetty laajasti aikaisemmassa tutkimuksessa, mutta sen kriittinen tarkastelu ja viitekehyksen edelleen kehittäminen on ollut melko vaatimatonta. Tässä tutkimuksessa keskitytään erityisesti tarkastelemaan, kuinka interaktiivisen ja diagnostisen kontrollin käsitteet vastaavat empiiristä todellisuutta nykyajan yrityksessä, joka kohtaa tämän päivän liiketoimintaympäristön haasteet. Tutkimuksessa tarkastellaan myös kontrollerin roolia interaktiivisen kontrollin toimeenpanijana.

Tutkimusmenetelmä ja lähdeaineisto

Tutkimuksen teoreettinen viitekehys pohjautuu kirjallisuuteen interaktiivisen ja diagnostisen kontrollin käytöstä, sekä aikaisempiin tutkimukseen kontrollerin roolista. Lisäksi tutkimuksessa tarkastellaan kontrollerin roolia uudesta näkökulmasta käyttäen Brunssonin (1982) toiminnan rationaliteetin sekä Weickin (1995) merkityksen luomisen käsitteitä. Tutkimusmetodina on yhden yrityksen case-tutkimus. Empiirinen aineisto kerättiin suorittamalla kymmenen semi-strukturoitua haastattelua pääasiassa konsernin ja divisioonan johtoryhmätasolla. Haastattelut tehtiin aikavälillä maaliskuu-toukokuu 2009.

Tutkimustulokset

Empiirisen aineiston perusteella, nykyajan organisaatioita luonnehtii informaatiotulva sekä laskentanumeroiden läpinäkyvyys. Tässä kontekstissa, interaktiivisen kontrollin käyttö on siirtymässä kohti käsitettä interaktiivinen läpinäkyvyys. Interaktiivisten kontrollien tärkeys korostuu, sillä ne luovat merkitystä laskentanumeroiden ympärille, mikä on kriittistä organisatorisen toiminnan aikaansaamiseksi. Sen sijaan, diagnostisten kontrollien merkitys toiminnan ohjauksen näkökulmasta saattaa heikentyä sillä ne jäävät liian etäisiksi organisatorisesta todellisuudesta aikaansaadakseen toimintaa. Kontrollerin rooli voidaan ymmärtää tässä uudessa kontekstissa mobilisaattorina ja merkityksen luojana. Selektiivisesti nostamalla tärkeitä asioita esille laskentanumeroiden massasta ja rohkaisemalla tulkinnan ja merkityksenluomisen prosessia, hän rakentaa pohjaa organisatoriselle toiminnalle.

Avainsanat

Interaktiivinen kontrolli, diagnostinen kontrolli, kontrollerin rooli, toiminnan rationaliteetti, merkityksen luominen organisaatiossa

TABLE OF CONTENTS

LIST OF FIGURES

1 Introduction

1.1 Motivation and background of the study

Ever since the introduction of Simons' levers of control-framework in 1995, it has received considerable attention in academic accounting research. Researchers have readily endorsed the model using it as theoretical frame of reference in various management accounting studies (e.g. Tuomela 2005; Granlund & Taipaleenmäki 2005; Widener 2007; Henri 2006). Especially the concepts of diagnostic and interactive controls have been widely applied when examining, for instance, budgets and strategic change (e.g. Abernethy & Powell 1999), product innovation (e.g. Bisbe & Otley 2004), and non-financial measurement (e.g. Vaivio, 1999a, 2004). However, despite the widespread adoption of Simons' framework, critical analysis of the model has been modest. Also, only limited attempts to empirically test and further develop the levers of control-framework have been made (see however Ferreira & Otley 2005). Therefore, instead of providing an additional pillar to the stream of research corroborating Simons' model, the purpose of this study is to take a more distanced and critical perspective with the attempt to see how the constructs of interactive and diagnostic control fare against empirics in a contemporary organization, which faces the challenges of today's business environment.

Initially, the levers of control-framework was developed based on field studies dating back to the 1980's and early 1990's. However, even with the various studies conducted, the theoretical foundations of the model have largely been left without systematic questioning. The business environment, organizational parameters and strategic challenges have, however, changed significantly after the model's introduction. Corporations have entered a new era characterised by advanced IT and data systems. The pace at which the business environment is changing is likely to be ever increasing. In fact there are concerns expressed by academics and managers alike that the existing frameworks of management control may be irrelevant. The control needs of the current environment are significantly different from those developed in earlier periods. Therefore, it has been argued that improvements are urgently required (Nixon & Burns 2005).

Thus, in light of these developments, it seems justified to raise the following questions: Has Simons' model still enough explanatory power in contemporary organizations? Does it still illuminate and explain the way accounting controls are used as tools for management control? With this study we attempt to critically examine the notion of diagnostic and interactive controls in contemporary organizations.

In a more general level, it has been acknowledged that even today the way management control systems are used is an important area of research. In the light of recent field research in particular, it seems that, when studying the relationship between strategy and management accounting systems, emphasis should be placed on examining how management accounting systems are used, as opposed to studying whether they are used (Tuomela 2005). Especially the need of examining interactive controls has been acknowledged in management accounting literature (Byrne & Pierce 2007) and it has been suggested that interactive controls gain importance in today's businesses due to the increasing dynamic environment in which companies operate (de Haas & Kleingeld 1999). Therefore, according to Byrne & Pierce (2007) management control theory needs to attach greater significance to the impact of control being deployed by management accountants in a more interactive (Simons 1995) and adaptive sense as opposed to focusing merely on the tools of management control. These arguments can be seen as providing additional motivation to this study.

Earlier studies have revealed interactive controls as powerful controls. They have also suggested problems related to the interactive use of control systems, for instance in terms of resistance and increased costs (see e.g. Vaivio 2004; Tuomela 2005). Interactive controls have been additionally criticized in terms of the extensive managerial attention they require (see e.g. Tuomela 2005). These studies have, however, mainly focused on the positive effects of interactive controls on organizational learning, innovations, and strategy formulation. In promoting the use of interactive controls, these studies have, nevertheless, left the role of diagnostic controls somewhat in the shadow. Given the strong role of interactive controls, what is the role of diagnostic controls as tools for management control in today's organizations? Considering the limited critical research related to the levers of control-framework, which clearly has left some issues unanswered, it seems that there

is a call for further examination into the model. This study thus takes the concepts of diagnostic and interactive controls under a critical eye. Shedding new light on the concepts based on the empirical findings, it introduces a contemporary view on the real workings of interactive and diagnostic controls in a specific organizational context.

This study also acknowledges that the discussion surrounding the ways control systems are used is closely related to the expanding role of management accountants, which has received academic attention recently (see e.g. Järvenpää 2007; Grandlund & Lukka 1997; Vaivio & Kokko 2006). Therefore, examining the use of interactive and diagnostic controls from the perspective of the controller's role can be seen as an intriguing area of research adding to the previous academic discussion. In order to offer further insight to this vastly studied phenomenon, this study takes a new perspective from the theoretical ideas of action rationality (Brunsson 1982) and sensemaking in organizations (Weick 1995) when examining the controller's role in contemporary organizations.

According to Brunsson (1982) the key challenge for organizations is to take organized action. Instead of choosing what to do, the main challenge in the organization is to implement the chosen actions. Furthermore, in order to achieve organizational action, information must first be interpreted and made sense of (Weick 1995). If the ultimate goal of the organization is to achieve action, the use of accounting controls should be examined in terms of their ability to serve this purpose of mobilizing the organization for action. In aiming for action, the ideas of sensemaking might also be beneficial when studying the role of the controller in using accounting controls. What is the controller's role in making accounting numbers meaningful in the organization? How does the controller mobilize interactive controls in order to prompt action? These are questions, which have not been addressed in the previous research concerning the role of the controller. However, the amount of formal data available in organizations has increased dramatically due to advanced IT systems. And the process of interpretation and sensemaking around the numbers is likely to rise in value. Therefore, examining the use of interactive and diagnostic controls, and the role of the controller, from the action and sensemaking perspective seems in place.

1.2 Research objectives

Hence, this study takes a more critical perspective, problematizing the concepts of diagnostic and interactive controls, as we traditionally know them. The study focuses on the use of performance measures in one Finnish case company, examining its implications from the perspective of interactive and diagnostic controls as well as the controller's role. Taking a closer look at how accounting controls are employed in the case company, the study aims at offering a refinement of the lever's of control framework.

More specifically, the aim is to address the following research questions:

1) How is interactive control realized in today's companies?
2) What is the role of diagnostic controls in the management process?

3) What is the role of the controller in deploying interactive controls?

Given the suggested increasing importance of interactive controls, and the limited amount of research conducted in this area, this study aims at increasing our knowledge of how interactive controls are actually deployed in the organization and what the role of diagnostic controls actually is. Therefore, by examining the research questions above, the study adds to the previous management accounting literature in the following ways. First, it provides a critical examination of how control systems are used in organizations. It re-evaluates the widely adopted concepts of interactive and diagnostic controls. Secondly, the study adds to the academic discussion around the new expanding role of management accountant by examining the interactive role of the controller in more detail, probing into how controllers actually adopt interactive controls to achieve effective control and to drive organizational action.

1.3 Methodology of the study

This qualitative study will be conducted as a single-company case study using an interpretive case study method (Scapens 1990). Data will be collected by conducting

interviews mainly at the top management level of the corporation, and three divisions of the case-organization. In addition to interviews, other sources such as document analysis will be used as far as possible, in order to improve the validity of the study. A more detailed discussion of the chosen research method is provided in chapter three.

The case company used in this study is a Finnish based, international, basic industry corporation operating in 26 countries, mostly in Europe. The core market areas are Finland, Nordic countries, Central Eastern Europe, Russia and Ukraine. From being a traditional steel manufacturer, the case corporation has during the last years, focused on a more customer oriented approach. It has developed its business to a more solutions-based direction, providing its customers with metal-based components and systems as well as integrated systems for construction and engineering industries. The main customer segments are residential construction, industrial construction as well as companies operating in lifting, handling, and transportation businesses.

The interviews were conducted as a part of a customer satisfaction survey of the accounting and finance function. The ten interviews included people from both the accounting and controlling function as well as the presidents of the three business divisions.

1.4 Structure of the study

The main theoretical foundation of this study rests on management control literature, and more precisely the previous case studies of Simons' interactive controls (Simons 1995; Vaivio 1999a, 1999b, 2004; Tuomela 2005; Kober et al. 2007) as well as on the studies of controller's roles especially when it comes to interactive controls (Byrne & Pierce 2007; Vaivio 2004; Partanen 2001; Granlund & Lukka 1998; Järvenpää 2007; Vaivio & Kokko 2006). In addition, the theoretical notions of action rationality (Brunsson 1982) and sensemaking in organizations (Weick 1995; Weick et al. 2005) will be used as theoretical pillars in this study.

The following section presents this previous literature and the theoretical framework used in this study. We will first discuss the concept of management control systems and the definition used in this study. Subsequently, the discussion will be followed by the introduction of Simons' levers of control framework after which the focus will be

on the studies conducted on the interactive use of control systems. We will end the theoretical discussion by presenting the previous literature surrounding the changing role of the controller's vis-à-vis interactive controls.

The rest of the paper is structured as follows. The methodological issues related to this study are discussed in chapter three and the case description will be provided in chapter four. Chapter five entails a discussion on the findings and, finally, chapter six will present the conclusions that can be drawn based on this study.

1.5 The study's findings in brief

The main findings of this study relate to the use of interactive controls in contemporary organizations. The empirical findings show how contemporary organizations are characterized by transparency in accounting numbers and data overload, caused by extensive and intensive IT systems. As a result of the transparent accounting numbers, financial and quantitative non-financial accounting information has spread beyond the traditional boundaries of accounting and finance function. It has become accessible from different corners and from different levels of the organization. Thus, interactive control is moving towards a new form of control – *interactive transparency* – where accounting information no longer rests exclusively in the hands of the controller.

In this context of *interactive transparency,* where the abundance of accounting information becomes transparent and accessible to a wider organizational audience, the importance of interactive controls increases. Interactive discussions become a way of interpreting and creating meaning around the wide net of accounting numbers, so that they are able to mobilize the organization for action. By contrast, while the interactive controls gain importance in contemporary organizations, this study shows how role of diagnostic controls as tools for management control may gradually become obsolete. Producing only distanced information, which is not coupled to organizational actors' everyday reality and urgencies, they are not able to prompt action. At worst, these diagnostic controls only add frustration in the organization as they add to the controller's workload and to the already exhausting volume of accounting data.

In relation to the controller's role, the main findings of this study suggest the need of understanding the controller's role in creating meaning and achieving organizational action. By driving interactive discussions around accounting numbers, the controller encourages the organization to arrive at a commonly shared understanding and interpretation of performance measures. The skills of the controller in lifting and framing important cues of the abundance of accounting data, and making them meaningful to the organization, get accentuated. The sensemaking process catalyzed by the interactive discussions serves as a foundation for achieving joint action. The role of the controller can thus be understood in terms of being a sensemaker and a mobilizer for organizational action.

2 Theoretical framework

2.1 Management control systems

Management accounting and control systems, which are central concepts in this study, have been defined in various ways in previous research. These definitions have also reflected prevailing understanding of the role of management accounting.

When studying management control systems it is important to understand the division between different controls in order to understand how some management control aspects relate to broader control systems (Chenhall 2003). One of the groundbreaking categorisations related to controls is the division between formal and informal controls. Formal controls, which are the focus of this study relate to more visible, objective components of the control system. By contrast, informal controls are controls that are not consciously designed but instead derive from the organization's culture or are an artefact of it. However, formal controls may also have their roots in organizational culture. For example, values and beliefs of the dominant organizational culture may be reflected in the formal organizational mission and objectives. Research concerning management control systems and strategy has been primarily focused on formal controls. (Langfield-Smith 1997)

Another way of classifying controls is to divide them as ranging from mechanistic to organic controls. According to Chenhall (2003), mechanistic controls are characterized by formal rules, standard procedures, and routines whereas organic controls are more flexible, responsive and entail richer data. According to this classification, diagnostic controls can be seen as mechanistic controls. They are used to track and review predictable goals and provide feedback on operations. On the other hand, interactive controls relate to the more flexible organic controls by having elements associated with co-operation, communication and more free information flow. (Chenhall 2003; Henri 2006)

Also management control systems have been defined in numerous ways. Conventionally management controls systems were seen as passive tools providing formal, financial and quantifiable information to assist managerial decision-making.

Over the years the definition of management control systems has, however, evolved towards a more comprehensive view highlighting a larger scope of information. Today, management control systems are seen as comprising external information on customers, markets and competitors as well as non-financial information from e.g. production processes. Also predictive information is considered part of management control systems. Furthermore, in addition to formal controls, management control systems are also seen as having elements of informal controls, such as personal and cultural controls. (Chenhall 2003)

This study adopts Simons' (1995, 5) definition of control systems as "the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities". According to Simons (2000), there are four important aspects related to this definition. First, management control systems are information-based systems that focus on conveying financial or non-financial data that influences decision-making and managerial action. Second, management control systems represent formal routines and procedures, meaning that information is recorded and restored in standard formats in either computer-based systems or paper documents. Informal control processes, such as group norms, socialization and culture are, thus, not included in the definition (Simons, 1994). Third, only those systems that are designed to be used by top management, and have the purpose of creating information that is relevant to top management, are considered as management control systems. The last noteworthy aspect embedded in the definition is that management control systems are used in order to maintain or alter patterns in organizational activities. (Simons 2000) As this definition points out the purpose of control systems is to produce information that will affect organizational members' activities. This last aspect is therefore closely linked to Brunsson's (1982) ideas of achieving organized action, which will be used as a theoretical lens in this study.

2.2 The levers of control-framework

This study focuses on the real workings of interactive and diagnostic controls of Simons' levers of control-framework. In this section, the levers of control-framework is presented, and the four different forms of control embedded in the framework are discussed, with a focus on interactive and diagnostic controls. Previous research related to interactive control and Simons' framework will also be addressed and some critical pronouncements will be identified as well.

2.2.1 Four levers of control

Based on a series of case studies in the late 80's and early 90's (see Simons 1987, 1990, 1991, 1994) Simons (1995) developed the levers of control-framework – to provide a theory for the control of business strategy. According to Simons the need to balance innovation and control is a central managerial challenge. Using the four different control systems simultaneously provides the means to balance conflicting demands. Two of the control systems, belief systems and interactive controls, are used as positive control systems encouraging the search for new opportunities and motivating organizational members to engage in creative behaviour. By contrast, the negative control systems, boundary and diagnostic systems, are used to balance these positive systems, by constraining search behaviour and allocating attention. (Simons 1995)

Taking a larger perspective as opposed to the traditional top-down view of strategy, Simons' framework takes into account multiple definitions of strategy. It also acknowledges the intended and emergent aspects of strategy development (Tuomela 2005). Ferreira and Otley (2005) concluded that the Simons' framework has a clear strategic focus, and encompasses a wider perspective on the operation of an organization's whole control system. The framework focuses not only on considering the choices of controls, but also on the different purposes they are used for. Hence, it provides a useful typology for the classification of different uses (Ferreira & Otley 2005).

However, it seems that Simons' framework has limitations in terms of its inability to be generally applied to different kinds of organizations, such as small and entrepreneurial companies, where social and cultural forms of control tend to dominate (see Collier 2005). Simons' framework has thus been criticized as being too much focused on the formal controls, allotting too little attention to informal, social controls (see also Ferreira & Otley 2005). For the purposes of this study, the framework is however seen as being applicable, as the study focuses on the use of management accounting controls in a large international company. In this context the emphasis is likely to be on formal controls.

In the following sections, these four levers of control will be discussed in more detail. But the focus is on diagnostic and interactive controls, as these are of main interest in this study.

2.2.2 Belief and boundary systems

We will begin the discussion of the different forms of control by briefly examining belief and boundary systems. Simons (2000, 276) defines beliefs systems as: "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose and direction for the organization". Beliefs systems are controls, designed to respond to the demands of innovation and encourage the employees to search for new opportunities. By communicating the core values and organization's purpose in e.g. mission statements or credos, top management aims at inspiring organizational members in their search for new ways of creating value. Belief systems are broad and inspirational in order to appeal to all organizational levels. Thus, they are not specific enough to be used as standards or as a basis for performance evaluation. Since they are highly inspirational and encourage the organization to unfocused search for new opportunities, the organization risks a dispersion of energy and resources. (Simons 1995)

In order to balance the positive effects of belief systems, and focus organizational behaviour, top managers use boundary systems to define the acceptable domain for opportunity-seeking behaviour. This is done by two kinds of boundaries: business conduct boundaries, and strategic boundaries. Business conduct boundaries rely on formal codes of conduct. Strategic boundaries, on the other hand, are used to specify

the range of opportunity-seeking behaviour to support explicit strategy. These two boundaries enable the organization to achieve creativity and flexibility by allowing managers to delegate decision-making to lower levels in the organization. Consequently, the positive belief systems and negative boundary systems work together, to create the possibility for opportunity-seeking behaviour. (Simons 1995)

2.2.3 Diagnostic and interactive controls

After the brief discussion on belief and boundary systems, we now turn to examine diagnostic and interactive controls. According to Simons (1995), management accounting and control systems can be divided into two different kinds of controls depending on the way these control systems are used. The key differentiator is the amount of management attention allocated to the system, as opposed to the technical features of the control system. Therefore, the same control systems can be used either diagnostically or interactively.

According to Simons (1995), diagnostic control systems refer to the traditional view of the control system as a vehicle for strategy implementation. Diagnostic control systems, serving mainly as management by exception tools, are used to monitor organizational outputs and compare them to the preset standards, in order to correct possible deviations and keep the intended strategy (see Mintzberg 1978) on track.

The critical performance variables monitored by diagnostic control systems can be both financial and non-financial by nature, depending on the factors that the management sees as crucial for the success in the current intended strategy. Examples of controls that can be used as diagnostic controls are profit plans and budgets, goals and objective systems, balanced scorecards, project monitoring systems and strategic planning systems. (Simons 2000)

Diagnostic controls do not receive attention from top management, unless in case of substantial deviations from the targets. In practice, staff accountants draw periodic exception reports from the diagnostic control systems to senior management. If everything is on track, these reports will be reviewed very quickly – after which the scarce management attention will be moved into other issues. Only in case of

substantial deviations, attention will be focused to the causes of the deviation, and to the initiation of remedial action plans. Diagnostic controls are a way of ensuring that the company achieves its goals, without the management having to engage in constant monitoring. Diagnostic controls thus have the purpose of saving management time. They offer a self-regulating system, which needs top management's personal attention only if there's substantial deviation between the preset standards and the organization's performance. (Simons 1995, 2000)

Using diagnostic control systems is, however, not without challenges and risks. The risks relate to measuring the wrong variables, building slack to the targets and the possibility of gaming the system. In order to realize the benefits of diagnostic controls in implementing the intended strategy, it is crucial that the critical performance variables are identified correctly. Otherwise attention risks to be misdirected at wrong variables, which may lead to putting the intended strategy off track. The other risks, related to building slack to the targets and gaming the system, are especially high if diagnostic controls are coupled with employee reward systems. Building slack to targets in order to ensure the rewards can lead to underperformance, unless managers make sure that the goals are set at challenging levels. Tying compensation to diagnostic controls can also encourage gaming in organizations. Individuals may try to reach the pre-set targets by smoothing or biasing measures. Consequently, there is a need for the boundary systems to be in place in order to restrict subordinates' actions to certain boundaries. Together with boundary systems, diagnostic controls constitute the negative controls. (Simons 1995, 2000)

As opposed to diagnostic controls that serve the monitoring purposes, and relate to Mintzberg's (1978) ideas of intended strategy, Simons (1995) classified interactive controls to demonstrate how control systems can have a role in the formation of strategies. This connects with the notion of emergent strategy process. By contrast to diagnostic controls, which strive for predictable goal achievement, interactive controls systems focus on the need for innovation and creativity. They encourage the search for new opportunities. They foster organizational learning, which can lead to emergent strategy formation. (Simons 1995)

Interactive controls are used to monitor changes in strategic uncertainties, (such as e.g. changes in customer preferences, competitor actions, new technology, government regulations). These represent risks that could be a threat to the organization's current strategy. According to Simons (1990), the choice of control system to be used interactively depends on the strategic uncertainties. However, Gray (1990) points out that the choice of controls to be used interactively is also affected by managerial characteristics such as aspiration level, tolerance for ambiguity, need for achievement etc., which Simons' model doesn't take into account (Gray 1990).

By contrast to diagnostic control systems, interactive control systems require extensive management attention. Simons (1995, 95) defines interactive control systems as "formal information systems that managers use to involve themselves regularly and personally in the decision activities of subordinates". According to Simons (1994) top management can turn any diagnostic control system to interactive control system, by constant interest and attention. Interactive control systems require much top management attention. They are therefore expensive to maintain. Thus, Simons (1995) argues that top management will usually choose only one control system to be used interactively. The number of interactive controls used is also affected by cognitive and strategic reasons. Focusing intensively on all control systems will lead to risks of information overload. In addition, it will be difficult to send clear signals of important strategic uncertainties to the organization. However, research shows that in some cases, usually in a crisis situation, top management might use all control systems interactively during short periods of time (Simons 1991). Similarly, Simons (1991) found that some managers do not have any control systems in interactive use. This was due to the managers not having a clear vision of their business.

There are several features that distinguish interactive control systems from diagnostic controls (Simons 1995):

1. The information generated by the interactive control system is regularly addressed and heavily used by the highest level of management
2. The interactive control system is used throughout the organization, demanding frequent and regular attention from operating managers at all levels of the organization

3. Data generated by the interactive systems are best interpreted and discussed in face-to-face meetings of superiors, subordinates and peers
4. The interactive control systems deal with strategic uncertainties and create debate about underlying data and assumptions. They generate new action plans.

The data from the system is used to challenge subordinates and their action plans in face-to-face meetings including accounting personnel, senior management and operations managers. These meetings are used to brainstorm and to collectively make sense of the information produced by the interactive control system. Subordinates are probed for explanations concerning unforeseen changes in their businesses. They will be challenged to come up with alternative action plans. In anticipation of this challenging and questioning from the management, subordinates will take time to collect additional information as much as possible, in order to be able to draw up new action plans. The hallmarks of interactive controls are thus debate and dialogue, leading to new action plans. Instead of a cursory check to see that plans are on track, the purpose of interactive controls is to trigger the search for new information and meaning. Interactive controls probe deeper into the details and background of the numbers. (Simons 1990, 1995, 2000)

In practice, however, it seems that the division between interactive and diagnostic controls is not straightforward. According to the research by Ferreira and Otley (2005), the difficulty of categorizing controls to a certain lever shows how theoretical formulations can be different from practical applications. They also point out that there is some ambiguity and subjectivity to the different concepts of the levers of control-framework, which increases the risk of subjective interpretations and reduces the power of the conceptual model. Bisbe et al. (2007) continue that especially the concept of interactive control system seems problematic, as it has not been defined by a single definition, but instead by providing several references on the features related to the interactive use of control systems (see Simons 1987, 1990, 1991 1994, 1995).

Despite the vast use of the concept of interactive controls in management accounting research, there have been only limited attempts to further categorize and specify interactive use. However, Ferreira and Otley's study (2005) of control systems in four

case companies identified two distinct concepts embedded in the definition of interactive control. They suggest that the concept of interactive control system should be divided into two concepts: interactive use and strategic validity control. According to this categorization, the interactive use describes the manner in which a certain diagnostic control is used to give that particular control importance and prominence. On the other hand, the concept of strategic validity control should be referred to when the question is of a control system that monitors strategic assumptions providing leading indicators for the need of refining the current strategic plan (Ferreira & Otley 2005).

In recent literature interactive controls have been linked with the discussion on the role of accounting. According to Tuomela (2005), interactive controls can be seen as relating to the alternative role of management accounting as an idea or learning machine (Burchell et al. 1980). Furthermore, the nature of interactive controls has been coupled with an alternative view of rationality. Even though not originally suggested by Simons, interactive controls seem to be in line with a more relaxed view of rationality (Tuomela 2005). Therefore, certain similarities between interactive control and the garbage can model or managing the organizational anarchy (see Cooper et al., 1981) can been seen.

2.3 A closer look at interactive control systems

After the introduction of Simons' model a line of research relying on the levers of control-framework and adopting its classification of controls, has emerged (see e.g. Henri 2006; Widener 2007; Ferreira & Otley 2005; Tuomela 2005; Marginson 2002; Granlund & Taipaleenmäki 2006). A number of studies have also adopted and examined diagnostic and interactive controls for instance in relation to different control systems, such as budgets, performance measurement systems, non financial-measurement and so on (see e.g. Abernethy & Powell 1999; Tuomela 2005; Vaivio 1999a, 2004). The effects of interactive systems on innovation, capabilities and strategic change have also been studied (see e.g. Abernethy & Powell 1999; Bisbe & Otley 2004; Kober et al. 2007; Henri 2006).

2.3.1 Interactive controls favouring strategic change and innovations

Previous studies have emphasized the potential of interactive controls in situations of strategic change. Abernethy and Powell's (1999) study was one of the first studies focusing on the interactive use of control systems. Their study examined the use of budgets as an interactive control system facilitating strategic change in the organization. According to Abernethy and Powell the demands of organizational learning and adaptation relating to the strategic change are better met by using budgets in an interactive way. Similar results have been reported in recent research as well. Kober et al. (2007) showed how the introduction of interactive meetings, to discuss operational and business issues, together with a more participative budgeting process enhanced inter-hierarchical discussion and debate. This helped the organization implement a change in its strategy. The findings support Simons' (1995) argument that interactive control systems facilitate strategic change. They promote inter-hierarchical discussion, dialogue and debate, resulting in greater information sharing and increased search for new possibilities (Kober et al. 2007).

Statistical studies concerning the effects of interactive controls have focused on the relationship between interactive controls and innovations. Bisbe and Otley (2004) point out that in their study it seemed that interactive controls do not necessarily favour innovation. Instead, the relationship between interactive and diagnostic use depends on the level of innovativeness. Interactive use may favour innovation in low-innovative firms, but has the opposite effect in high-innovative firms. According to Bisbe and Otley, these contradictory results can be explained by interactive control system as contributing to reducing a risk of reaching a too high level of innovation. On the other hand, however, they concluded that by using formal management control systems interactively, the relationship between innovations and company performance is increased. The results, thus, verify Simons' (1995) claim that successful innovating companies use control systems interactively.

Henri's (2006) study, on the other hand, suggested that the interactive use of management control systems has positive effects on capabilities such as market orientation, entrepreneurship, innovativeness and organizational learning. By contrast

to Bisbe and Otley's findings (2004) Henri found a direct and positive relationship between interactive controls and innovations. Henri and also reported a negative impact of diagnostic controls on these capabilities, therefore lending support to Simons' (1995) view on diagnostic controls as a more restricting form of control, limiting innovative behaviour.

2.3.2 Interactive controls triggering organizational learning

Several claims have been made in the academic literature for the use of controls in an interactive way in order to encourage organizational learning. For instance, Argyris (1990, 1991) argues that accounting systems should be used in the manner that promotes learning, in order to overcome the adoption of defensive routines[1].

As diagnostic controls leave only limited room for discussion around the validity of the measures, and do not encourage the articulation of diverging opinions, their potential for promoting organizational learning is limited. In fact, diagnostic controls, focusing on strict monitoring of pre-determined measures may discourage experimentations, controversy and ambiguous proposals. These could however be important in stimulating organizational learning and in bringing out elements of an emergent strategy. (Kloot 1997; Vaivio 2004).

By contrast to diagnostic controls, it seems that interactive controls have more potential of promoting learning as they stress learning instead of supervision and control (Tuomela 2005). Tuomela argues that the interactive use of performance measurement systems has several implications for the quality of strategic management by enhancing the detection of strategic matters and by increasing organizational dialogue.

Also Vaivio (1999a, 1999b, 2004) promotes the use of interactive controls as enhancing organizational learning. Vaivio (1999a) highlights the interactive "focus potential" of non-financial measures. According to Vaivio's findings, non-financial

[1] These are any routine policies or actions that are intended to circumvent the experience of embarrassment or threat by bypassing the situations that may trigger these responses (Argyris 1990, 505)

measures provide top management the means to focus interactive control to specific strategic targets. These measures guide interaction to strategically relevant objects. This interactive use opens new visibility to problems, management processes and organizational routines. It provides a mechanism for probing into operational issues. By provoking horizontal debate and discussion, interactive controls can lead to the discovery of local knowledge, which can be a source of new competitive initiatives and contribute to the emergence of new strategies (Vaivio 2004).

2.3.3 Interactive controls leading to increased visibility and resistance

Despite the reported positive effects of interactive controls on organizational learning and strategic change, previous studies have indicated that the use of interactive controls in fostering emergent strategy formation might not be as straightforward as originally suggested by Simons (1995). Studies have reported interactive controls as powerful controls that are sometimes likely to provoke strong reactions in the subjects of control, triggering organizational defensive routines. As organizational defensive routines are anti-learning and over-protective (Argyris 1990), they make it unlikely that the organization will address the factors that caused the embarrassment in the first place. Therefore the learning benefits of interactive controls may not become realized.

Despite the reported implications for the quality of strategic management, the results of Tuomela's (2005) study point out to problems related to the interactive use of performance measurement systems in terms of resistance caused by an increased visibility towards the actions of the organizational individuals. Compared to diagnostic use, it seems that certain individuals in the organization may view the interactive performance measures as even more threatening, as they make individual actions become more exposed to examination and discussion. Tuomela (2005) points out that as a contrast to interactive controls, in the case of diagnostic controls it is possible that the results will be smoothed by external factors. This leads to the fact that prevailing problems are ignored. Also, the individual actions of the organization's members will never become visible to others.

Similar evidence of resistance caused by an increased visibility resulting from the interactive use of non-financial measurement has been shown in Vaivio's studies (1999a, 1999b, 2004). The introduction of this new kind of interactive measurement led to increased visibility and established a new disciplinary order. This destabilized existing power relations (Vaivio 1999a, 1999b). The measures had the potential of probing deeper into the operations and the interactive use of the measures caused changes for individual agents in the organization. They now became more exposed in terms of a more transparent and public responsibility. New areas of performance became visible, and even tough this meant that previously hidden successes appeared and became celebrated, also the previously hidden problems became visible to the wider audience. This new kind of individual and public responsibility, which "put people on the spot" was therefore not always positively received, as it meant that "a lot of blame was laid on somebody's door" (Vaivio 1999a, 427).

The resistance caused by the interactive use of non-financial measures took many forms. Vaivio (1999a) reported discursive and non-discursive resistance in the case-organization. In addition to the counter-discourse of the sales managers opposing the new measurement system, the resistance was mobilized by other means such as choosing not to attend the meetings held by the controller. The purpose was to undermine the credibility of these meetings by reducing the organizational support to them. (Vaivio 1999a) Also Tuomela (2005) reported how the organization engaged in counterproductive behaviour by skipping the interactive meetings and leading discussion into the details of the measures instead of addressing the actual results and drafting future action plans. As illustrated by this example, resistance can take the subtle form of manifesting itself, for instance, in endless discussions around issues that in fact are unimportant. The discussion will never proceed to the issues, which are actually of importance (see Ezzamel et al. 2001).

In addition to increased resistance, Tuomela's (2005) study problematizes interactive control with respect to increasing workload. In the case company, middle managers and functional heads were required to collect some of the data needed for the interactive performance measurement system. The new reporting requirements were not always met with enthusiasm and some managers continually tended to ignore the deadlines for providing the required information. This resulted in an increase in the

controllers' workloads as well. They needed to continually remind and instruct the functional and middle managers to take care of the new reporting responsibilities. In addition to the additional time needed for the data gathering, the discussions and meetings, which were specifically due to the interactive use of the system, consumed a lot of managerial time. This makes the use of interactive controls expensive. (Tuomela 2005)

Simons' (1990) theory of how interactive controls benefit strategy development has also been criticized in terms that it ignores the need for political pressure to change strategy. According to Simons (1990) interactive controls signal management's values and preferences and will lead to organizational learning, which then – in the form of subordinates' strategic initiatives – will lead to revised strategy and strategy formulation. However, as argued by Gray (1990), the acceptance of strategic initiatives suggested by lower level managers and employees, cannot be taken for granted. Instead, political pressure and political manoeuvring may be necessary in order to overcome the inertia created by the existing control systems. Gray (1990) points out that Simons model, although recognizing the existence of debate surrounding planning and budgeting procedures in the organization, takes for granted that once the learning at the lower levels of the organization has occurred, strategic initiatives will be accepted without political gaming and pressure

This chapter has presented the main findings of a large body of previous research surrounding interactive controls. These studies have reported the positive implications of interactive controls on the quality of strategic management – as well as the nature of interactive controls as controversial controls triggering resistance. However, as interactive controls highlight the interpersonal communication surrounding accounting numbers, should they also be discussed in terms of what their implications are on the role of the controller using these controls? By definition, it is precisely the personal attention given to the control system that defines whether or not the control system is used interactively or diagnostically. As these two controls are very different in nature, their implications on the role and identity of the controller are likely to differ. Furthermore, control systems cannot be turned interactive without the controllers engaging in face-to-face communication around the accounting numbers. The controller, thus, lies in the centre of deploying interactive controls in the

organization. Therefore, a discussion of how interactive controls relate to the discussion on the controller's contemporary role is a critical issue, which is addressed below.

2.4 The changing role of the controller & interactive controls

Previous speculations on the use of interactive controls vis-à-vis the controller's role lead us naturally to examine the previous literature on the role of management accountants. Depending on the way management control systems are used in the organizations, the management accountant must namely adopt different ways of working in the organization. The controller must adapt different communication styles, seek different levels of engagement with, as well as different levels of visibility towards the operative organization. The use of interactive management accounting systems in order to stimulate organizational learning and assist in the emergent strategy process, therefore places new kinds of demands on the management accountant. The traditional monitoring role coupled with the use of diagnostic control systems has to be broadened to cover new kinds of roles in which the management accountant works close to the operations and takes part in strategic discussions. In the following sections the previous literature around the role of the controller will be discussed in more detail.

2.4.1 From a traditional role to an expanded role

Traditionally management accountants have been seen as being merely concerned with the monitoring tasks in the organization. This can be coupled with the diagnostic use of controls. The traditional role of management accountants has been characterized with the terms of "bean counter", "watchdog" and "historian" (Granlund & Lukka 1997, 1998; Järvenpää 2001). The bean counter type of person is characterized as being historically oriented, responding to formal information needs. In addition his communication outside the accounting function is limited to producing written reports. (Granlund & Lukka 1997) According to Granlund and Lukka, the bean counter controller is not expected to have a deeper understanding and knowledge of the business. This view is also shared by Järvenpää (2001) as he depicts the typical bean counter as having relatively poor business knowledge, focusing inside his or her

own function and not seeking greater participation and input from the rest of the organization.

In their study conducted about a decade ago Granlund and Lukka (1998) point out that the most important task of the controller is still to bring the financial perspective into decision-making situations and to ensure that this financial information will be received and understood by managers. However, they also emphasize that today's business environment requires that management accountants adopt a more commercially oriented approach as being true members of management teams and acting as change agents. At least many normative arguments have been advanced for enlarging and expanding the management accountant's role towards a more strategic and business-oriented direction. (Granlund & Lukka 1998)

Empirical findings have supported these normative claims concerning the changing role of management accountants in the Finnish context (Järvenpää 2001; Granlund & Lukka 1997, 1998; Vaivio & Kokko 2006). Furthermore, the evidence is not limited to Finnish studies; also the study of Byrne and Pierce (2007) supports the view of the contemporary management accountant as a more business-oriented actor. Granlund and Lukka (1998) point out, however, that instead of a true expansion in the role of the controller, the evidence could be explained by the institutional theory outlined by DiMaggio and Powell (1983). Companies might promote the adoption of the new role only for the legitimizing purposes, regardless of whether or not they actually apply this new role in practice. The changing role is also seen in rhetorical issues as the traditional title, *accountant,* has largely been replaced by the more business-oriented title of *controller,* in Finnish companies[2]. (Granlund & Lukka 1998)

Despite the speculations, empirical evidence has reported a change in the role of the controller. This change is linked with the increasing decentralization of the management accounting function, which allows for the management accountant to have a deeper access to the real operations of the firm (Granlund & Lukka 1998). It seems that much of management accounting information and knowledge is, in fact,

[2] See Granlund and Lukka (1998) for a further discussion of the term controller, and the different meanings of the term in Finnish and US literature

mobilized by the controller, who engages in team processes within the organization (Ahrens 1997; Vaivio 2004; Vaivio & Kokko 2006).

This closer proximity between management accountants and operations is reported in Vaivio's studies (1999a, 1999b, 2004). Relating to Simons' ideas of interactive control, Vaivio (2004) suggests that the evolution in the role of the management accountant can be seen as a move towards an interactive role, where the controller is adopting a change agent role. Moving away from the traditional monitoring of financial aggregates, and involving a deeper focus and influence over operational issues, controllers become more involved with day-to-day issues. They are more active with regard to operational decision-making (Vaivio 1999b). Byrne and Pierce (2007) found supporting evidence for Vaivio's claims of the interactive role of the controller, suggesting that management accountants can influence management control systems through their interaction. Adopting a more interactive role led to an enhanced use and quality of accounting information. It also increased the value management placed to this information.

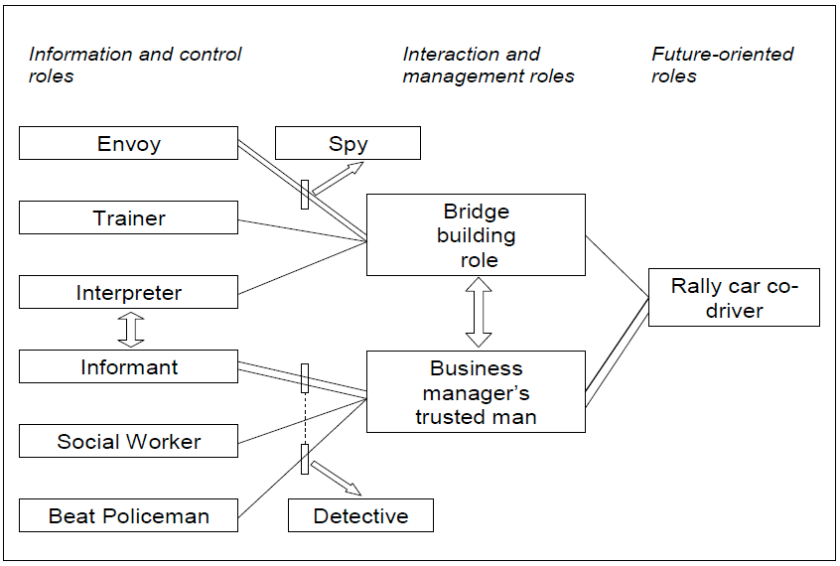
Granlund and Lukka (1998), however, point out that the traditional bean counter role is not dead. Instead, the transformation in the controller's role should be understood as *an expansion of that role*. Grandlung and Lukka argue that the contemporary controller must take part in the decision-making process and work close to the real operations. But financial monitoring should not be overlooked, as it still is a part of the controllers' role. According to Granlund and Lukka, the previous roles of historian, watchdog, adviser and consultant are included in the contemporary job description of management accountants as change agents. The suggestions of the role expansion have been backed up by more recent studies as well. Byrne and Pierce (2007) noted that the combined role of the accountant covering both the monitoring and business partner roles was the most common way of organizing the management accountant's role, thus lending support to the conception of "hybrid accountants" (Burns & Balvindsdottir 2005) as well as to the role enlargement suggested by Granlund and Lukka (1998).

Vaivio and Kokko (2006), on the other hand, found contradictory evidence of the existence of the bean counter controller. In their study of contemporary Finnish

controllers, they were not able to identify the typical bean counter controller – an accountant, who would be narrow minded, historically focused and unsocial. Instead, they argue that the bean counter controller no longer represents the Finnish controller's stereotype. The contemporary Finnish controller has a larger perspective and a management-oriented, broad mind. Instead of being obsessed with accounting details they were concerned with the big financial picture. The contemporary controller was an active organizational actor, who sought involvement and used the social networks and the tacit knowledge of other organizational members, in order to better interpret the quantitative financial data. Vaivio and Kokko (2006, 64) also revealed how sometimes the company CEO would "tip off" the controller of some urgent matter, to which the controller would then probe deeper into. The controller was, thus, sometimes acting as a top management agent, working closely together with the company CEO.

Also Partanen's (2001) study depicts the role of the controller as evolutionary. However, emphasising more the social aspects of controller's role in, for instance, creating a common language and in building unifying meaning structures in the organization, this study provides an alternative typology for understanding the role of the controller. This investigation divides the roles into three broad categories: information and control roles, interaction and management roles, and future-oriented roles. (See Figure 1)

Figure 1: The role model of controllers in the light of different metaphors



Source: Partanen 2001, 328

Information and control roles can be seen as antecedents to the interaction and management roles, which may then evolve into future-oriented roles. The roles of the envoy, the trainer and the interpreter form the basis for the bridge building role – whereas the informant, the social worker and the beat policeman are closely related to the role of business manager's trusted man. These interaction and management roles highlight the negotiation skills of the controller. By developing their skills in these roles, controllers can reach the challenging, future-oriented role of the rally car co-driver. However, in case the controller fails in the information and control roles, there is a risk of the controller being negatively labelled as a detective or spy. (Partanen 2001)

From the viewpoint of this study, the roles describing the interaction between the controller and rest of the organization might be useful in understanding how the controller actually mobilizes interactive controls. By focusing on the communicational aspects of controller's role, instead of technical capabilities, Partanen's (2001) typology may be fruitful in understanding how management accountants work together with the operative organization. It also suggests something about how they communicate around the accounting numbers.

Partanen (2001) depicts the role of the informant as the traditional role of the controller in producing and disseminating information, and in being responsible for basic reporting. However, in making the accounting information understandable to others in the organization, the controller assumes the role of the interpreter. Using the language and meaning structures of the recipient, he communicates and simplifies the message so that it becomes meaningful to the receiver. He can also act as a creator of meaning structures between people who have adopted differing concepts and ideas, resulting e.g. from their work in different functions. The metaphor of the controller as an interpreter responds to the important task of bringing financial information into managers' awareness and ensuring that the information will be well received by them (see Granlund & Lukka 1998).

When assuming the role of the social worker the skills of the controller in identifying problems become heightened. The controller can discover these problems

independently. Or the controller can serve as a channel through which the problem matures into awareness. Independent problem identification naturally calls for substantial understanding of the business. Furthermore, the ability of the controller in compressing the complicated reality into clear entities that can be easily communicated, become crucial in the actual problem-solving process. (Partanen 2001)

The information and control roles serve as a platform to interaction and management roles of the bridge-builder and the business manager's trusted man. As a bridge-builder the task of the controller relates to creating interdependencies and common meaning structures between different organizational actors. Communication becomes facilitated as people share common meaning structures. This is why the bridge builder role is especially common on the interfaces of different functions. The role of operating as a mediator between the organization's various functions requires a high level of social and interpersonal skills. In addition, the creation of meaning structures calls for vast amount of operational knowledge and business understanding. This means that the controller needs to understand the logic of the business, have knowledge of the key processes in the organization, as well as the ability to take a wide and strategic perspective. In addition, he needs to have courage to question prevailing assumptions. (Partanen 2001)

The second interaction and management role is that of business manager's trusted man. In this capacity the controller's tasks are to support the business unit manager, as well as to act in a challenging role, being a sparring partner. The controller lifts up issues from the accounting data that s/he then brings to the attention of the rest of the management team. Furthermore, Partanen (2001) argues that by being the producer and expert of financial information, and selectively choosing the issues to which s/he directs attention, the controller has substantial organizational power. These two interaction- and management-related roles create the stepping-stone for the future-oriented roles of the controller, of which Partanen (2001) gives the example of the rally car co-driver. The essential task of the controller in this role is to analyze strategic risks and identify future possibilities.

2.4.2 Challenges relating to the controller's role expansion

The empirical studies presented above provide evidence of a role evolution of management accountants – beyond the narrow bean counter role to a more business-oriented, change agent role. On the other hand, there is some evidence suggesting that the extent of management accountants' involvement in business processes is not entirely reaching the managerial expectations for example in the context of change programs (Chenhall & Langfield-Smith 1998). As Byrne and Pierce (2007) point out in their study, possible tensions, frictions and contradictions related to the transformation of the role should be taken into account. According to them it seems that many ambiguities, contingencies and conflicts relate to the new roles adopted by management accountants. This means that the notion of management accountant adopting a business partner role is not as straightforward and problem-free as previously suggested.

As Vaivio (2004) points out, the fact that management accountants are willing to act in the alternative role of change agents, should not be taken for granted. The adoption of a more interactive role might endanger the neutrality and objectivity of the trusted bean counter and number cruncher role. It could therefore be that the new more active role is not compatible with the traditional role of the controller. In fact some controllers might prefer the traditional bean counter role. They may have clear and rational reasons for not identifying and presenting themselves as change agents (Burns & Balvindsdottir 2005).

Vaivio (2004) also raises the question whether it is possible for the controller to achieve efficient organizational control, especially if the independence and organizational neutrality of the controller becomes endangered. Contradictory statements have, however, also been provided. Byrne and Pierce (2007) see that the role conflict resulting from the two very different tasks of the controller may in fact result in more effective management control, since the business-oriented controller is much more aware of the company's operations. Hence, the controller can design better controls. In this sense, Byrne and Pierce (2007) challenge the argument that accountants need complete independence in order to achieve effective control. The role conflict may, however, lead to controllers experiencing divided loyalties in their

overlapping roles as involved partners of operational management and as independent financially objective informers of the top management team (Ahrens 1997).

Järvenpää (2007) points out that the new role of the controller may not be well received by other organizational members such as line managers. This may lead to conflicts between the controller and other organizational agents (see also Vaivio, 2004). In fact, Burns and Balvindsdottir (2005) argue that as the "hybrid accountants" approach the operational level, they will encounter substantial barriers of localized power. It is possible that they will not be welcomed by everyone. Sometimes the new role and the new organizational influence can be attained at the expense of another organizational group, e.g. sales (see Vaivio 1999b). Vaivio showed how the controller, taking the interactive role, became involved in the operational day-to-day issues and decision-making. This increased accounting's organizational influence. Accounting became involved with issues that were the interest of other organizational experts as well. When accounting became more and more influential in relation to operations, the previous influence of the sales function over operations was weakened. This caused tensions between these two functions. The new role of accounting and the controller led to distortion of the previously well-established power relations, which decreased the influence that the sales function used to have over other functional units.

Consequently, previous studies have emphasised the importance of a mutual understanding of the controller's new role between controllers and business managers (Partanen 2001; Järvenpää 2007). Also Byrne and Pierce (2007) argue that organizational recognition affects widely the possibilities for the management accountant to embrace the more extended role. They stress the role selling capacity of management accountants especially towards operations managers, if they wish to achieve greater operational involvement. According to them, even though management accountants would seek greater involvement, operations managers might be sceptical of such advances. Furthermore, they conclude that top management support is crucial. This is also supported by Järvenpää (2007), who argues that in addition to structural arrangements such as decentralization, managerial role modelling and management attention are essential. Especially the role modelling of top managers and top financial executives seems to have a remarkable effect on the

accounting culture in the organization. This is due to the fact that these actors are seen as organizational "heroes". Their actions are highly visible in day-to-day operations.

The more interactive role of the controller also means an increased workload (Vaivio 2004). Especially as it has been argued that the bean counter and financial monitoring role is still needed (Granlund & Lukka 1998). This raises the question: Is it realistic for the controller to serve this new interactive role due to time and resource limitations? The wide scope of the tasks related to the combined role of the controller also suggests novel professional requirements for controllers (Vaivio 2004).

2.4.3 New perspectives on the controller's role

As presented in the earlier sections, there are numerous studies conducted on the changing role of management accountants. These have reported the emergence of the new more business-oriented controller. As perspectives determine which data is observed and how it becomes theoretically interpreted (Brunsson 1982), adopting a new theoretical perspective to the already studied phenomenon of the changing role of the controller could be essential in widening our understanding of the contemporary roles of the controllers.

Brunsson (1982, 37) argues that organizations face two kinds of challenges: to choose the right thing to do and to get it done. Of these two challenges, implementing the chosen action is the main goal of organization. It is not the choices that the organization makes, but the actual implementation of these choices that keep the organization alive. Achieving action is thus the raison d'être of organizations. Without actions organizations would not survive, and the entire existence of the organization would be threatened. Therefore, in order to understand the controller's role in mobilizing the organization for action, a new perspective could be taken from Brunsson's (1982) ideas of action rationality. Action rationality relates to situations, where seemingly irrational behaviour – when examined from the point of view of achieving action – can be rational. Although founded in decision-making context and having its roots in investment calculations, Brunsson's (1982) views on bounded rationality in organizations could provide an interesting viewpoint into the examination of controller's role in situations of management control. If accounting

numbers are perceived as drivers and key factors, which influence organizational action, it could be that Brunsson's (1982) action rationality would prove to be a useful theoretical lens to re-examine the role of the controller with, in terms of: How do business controllers create the foundations for action?

Brunsson (1982) initially studied the decision-making processes in organizations. The study argues that instead of a rational decision-making process, organizational decision procedures seem rather irrational – if evaluated according to traditional decision-making criteria. Instead of considering as many alternatives as possible, as suggested by normative theory, it seems that organizations actually evaluate only a few. Furthermore, instead of objectively evaluating all positive and negative consequences relating to these different options, Brunsson (1982) argues that organizations sometimes depress negative consequences, highlighting only the positive outcomes. Similarly, when evaluating different alternatives, the relationship between the different alternatives and objectives are not investigated thoroughly, but rather just to show some positive links. These positive links are then used as arguments to support the chosen alternative. All this seemingly irrational behaviour can, according to Brunsson (1982), actually be rational from the action perspective. In fact, this irrationality can be seen as affording a better base for organizational action, as compared to a completely rational decision-making procedure.

Brunsson (1982) argues that in order to achieve action, the decision-making process needs to create a motivational and cognitive base. And it must create commitment. The decision-making process must give the actors expectations that action really will take place. It must build the enthusiasm and the commitment that actors need to engage themselves in the activity. According to Brunsson (1982) it is precisely the irrationalities in the decision-making process, which build the ground for organizational action. For example, when considering investment decisions, the evaluation of several alternatives would lead to dispersed commitments and weak motivations. This would undermine the foundations for action. Similarly, the irrationality of concentrating only on promoting the positive consequences of the alternative most likely to be chosen is a way of building enthusiasm and motivation. This ultimately affects how well a decision gets implemented. The irrationality in the decision-making process reveals that instead of a thorough use of all possible

information that can be gathered from the organization, the key is to be selective. From a large mass of information, some amount of data is selected, rather violently interpreted and finally pushed to support one action plan – in order for it to mobilize the organization for this chosen course of action. (Brunsson 1982)

In the same vein, it could be assumed that in situations of management control, rationality could partly be abandoned to make way for the achievement of good grounds for action. Instead of expecting and looking for complete rationality in the adoption and usage of accounting numbers and performance measures, we may ask, whether management accountants are adopting a role in mobilizing the organization for action, in terms of radically simplifying rather than elaborating the accounting numbers? If the purpose of the organization is to achieve action, then similarly in management control situations, the more commitment building, motivational, and cognitive aspects can be created through the use of accounting measures, the better the foundations for actions are. As modern corporations armed with IT systems and the possibility to measure and track huge amounts of accounting data, the examination of the role of the management accountant may benefit from this new perspective. Action rationality and selective use of accounting measures brings new light to the actual roles of controllers within organizations – especially when adopting the interactive role of mobilizing accounting numbers to prompt action.

Furthermore, when discussing the controller's role in mobilizing the organization for action, the discussion could also benefit from the notion of sensemaking (see Weick 1995). Sensemaking can be described as the process of turning circumstances into explicit situations that serve as catalysts for action. In this process of sensemaking, language, communication and words are used to produce meaning to situations so that they can be comprehended. Comprehension is crucial for action, and that is why sensemaking can be perceived as imperative for achieving action. (Weick et al. 2005)

According to Weick et al. (2005) sensemaking is a necessary way station to action, as equivocal inputs must be made sense of before they are able to initiate action. Sensemaking is a way of organising chaos and ambiguity. The process of sensemaking begins when people extract certain cues from the huge mass of potential inputs and stimuli that surround them. Weick (1995) points out that as the control over

which cues will serve as a point of reference is an important source of power, directing people's attention to something is a powerful act. This can be seen as bearing certain similarities with Partanen's (2001) argument that the controller, by selectively directing the attention of the organization to issues of his choice, holds substantial organizational power.

In Weick's (1995) sensemaking perspective, after the cues are extracted, they become bracketed and labelled. This eventually makes the world more simplified and more suitable for *functional deployment* (Weick et al. 2005). Weick et al. (2005) point out that noticing and bracketing are rather crude acts of categorisation. The resulting data could be interpreted in several ways, bearing several different meanings. Therefore the number of possible meanings must be reduced by the process of selection. This process encompasses the continuous redrafting of a locally plausible story that becomes comprehensive, incorporating more and more of the observed data. Weick et al. (2005) warn against seeing sensemaking as more abstract than it actually is. They argue that, in fact, making sense means connecting the abstract with the concrete.

Sensemaking is about creating meanings and materializing them in such a way as to inform and constrain action. The materialization of meanings occurs when situations, organizations and environments are *talked into existence*. Therefore, language, talk and communication can be seen as central components of sensemaking. When organizations strive to arrive to a plausible story, they must gain access to more cues and more varied cues, in which rich personal media, such as meetings and direct contact will help. Weick (1995) states that impersonal media, such as formal information systems and specific reports are less important. When people are faced with ambiguous situations, they need to negotiate some understanding of what they face and what the solution would look like. Therefore, merely providing more information will not help them. Instead the answer is to provide people with a necessary setting, such as face-to-face meeting, where they can argue and debate about the data pulled from a variety of media. (Weick 1995)

Weick (1995) also points out that sensemaking with the word sense is actually misleading. It implies that there is something out there to be registered and sensed accurately. Linking to Brunsson's (1982) ideas of bounded rationality in

organizations, Weick argues that instead one should take a relative approach to truth when it comes to sensemaking. Weick emphasises that sensemaking is actually more about plausibility than accuracy. According to Weick et al. (2005) the key problem for organizations is not to accurately assess scarce data. In fact, the key challenge is to interpret the abundance of data into *actionable knowledge*.

In reality it is the abundance of data, with its complexity related to the quantity, ambiguity and variety of the information that serves as a call for sensemaking. When the information load increases, people need to rely on sensemaking as a way of managing the complexity of the situation. In order to arrive at some sensible interpretation, large portions of the information must be neglected. Only some cues can be extracted for closer examination. (Weick 1995)

When examining these cues, instead of arriving at an accurate and objective story, which would reflect the "true" state of things, sensemaking is guided by the search for plausibility. Plausibility in sensemaking is linked to creating an account, which is socially acceptable and credible. This plausible story that emerges as a result of the sensemaking process is only one of many possible stories. But it is considered sufficient to the purposes of the organization. Bearing similarities to Brunsson's (1982) ideas on action rationality, Weick (1995) argues that the key thing to notice is that plausible stories are successful in keeping things going. As elaborated by Brunsson (1982), when aiming at achieving action, simplifying rather than elaborating seems to be crucial. Therefore, assuming that the ultimate purpose of the organization is to achieve action, plausibility can be deemed sufficient (Weick 1995).

Consequently, due to several reasons, plausibility can be seen as overriding accuracy when it comes to sensemaking. Situations of sensemaking often involve large amounts of data. People need to filter, distort and separate it, in order not to be overwhelmed. In other words, striving for accuracy could risk immobilizing the organization. Another reason why accuracy seems inferior to plausibility when it comes to sensemaking and achieving action is that often it is better to start with *some* interpretation, rather than postpone action before arriving at *the* interpretation. The importance of getting to action can be seen in the fact that actions allow the emergence of new data. This in turn creates opportunities for further dialogue,

bargaining, negotiation and persuasion, which are all beneficial for sensemaking. (Weick 1995)

The two perspectives presented in this chapter – action rationality and sensemaking – could potentially be useful in providing new avenues for understanding the role of the controller in contemporary corporations. Instead of expecting a rational use of performance measures, the adoption of the ideas of bounded rationality and sensemaking offer the means to examine the role of the controller in terms of how s/he uses the measures in order to achieve organized action. Adopting these new perspectives to the controller's role might help us understand more precisely what the role of the controller is in making the accounting information meaningful in the organization. Being the mobilizer of the accounting numbers, s/he might not use them in the traditionally expected rational way. In a similar vein as in the investment decision situations described by Brunsson (1982), accounting numbers might not be thoroughly examined in the situations of management control. Especially, in contemporary organizations where the number of data available has grown, it could be expected that the value of using numbers in a way that creates meaning around them becomes imperative. Not all measures can be rationally examined, or otherwise if would lead to immobilizing the organization in a similar manner as in the case of investment decisions. Linking the controller's role with the ideas of sensemaking and action rationality might therefore be beneficial also in situations of management control.

3 Methodology

In this chapter, the methodological underpinnings and choices of this empirical research will be laid out. First this chapter discusses the chosen research methods and provides the motivation for this. Secondly, the issues of generalizability as well as the validity and reliability of the empirical basis will be discussed in relation to the chosen research method. The third part of this chapter is devoted to explaining how the empirical work was carried out. This includes the choice of case company, the preparation and conduct of the interviews, observations and document analysis, as well as the theoretical interpretation process of the field data. In the last part of this chapter, the case organization and its context are presented.

3.1 Research method

The research method can be described as being an explanatory case study. It seeks explanations of the ways accounting is practiced in the organization and about how meaning is created in an organizational setting (see Scapens 1990). The purpose is to focus on interactive and diagnostic controls, with the aim to specify and further develop our theory, so the study can be categorised as a theory refinement case (Keating 1995), and more precisely as a theory specification case where theory if "taken to the field" and set against empirical observations – to see how its explanatory power can be developed, with regard to the phenomenon it purports to explain.

Case studies have gained popularity among management accounting researchers during the last decades and field studies have gained substantial ground in management accounting research (Scapens 1990; Lukka & Kasanen 1995; Ahrens & Dent 1998). The growing amount of case studies can be related to the shortcomings of the traditional normative and positive, mainstream research approaches. Especially the positivistic research perspective relies on key assumptions of neoclassical economics concerning the rationalization in decision-making and the assumption of utility maximisation. While these research approaches can be successful in predicting large, general trends, they fail to explain accounting practices at the organizational and individual level. (Scapens 1990)

Recently there has been a growing interest towards understanding the nature of accounting as practice and towards studying accounting in action (Scapens 1990; Ahrens & Dent 1998). Unlike traditional research approaches, the case study method provides the means to study accounting practices at the level of organizational actors. It allows the researcher to gain a deeper understanding of accounting practices in their organizational context. It allows accounting practices to be studied both in terms of which techniques and systems are used and in terms of the ways in which they are used (Scapens 1990). Field research can be seen as the answer to the need of achieving a rich and plausible description of accounting in action (Ahrens & Dent 1998).

The usefulness of case studies has been debated in academic literature. According to the positivistic research approach, the case study is often seen as a small sample study, and their usefulness is limited to developing hypothesis that can later be tested with other research methods such as wider surveys. Case studies can however be seen from another perspective as well, namely that of social theory. This view sees accounting practices as socially constructed and acknowledges that they can be changed by the social actors. Also, accounting practices are constitutive technologies. They create organizational reality. They make organizational meaning and "make sense" in organizational life. (Hopwood 1983, 1986; Weick 1995) Understanding accounting practices, thus, require specific and deep research, where accounting is interpreted in its historical, economic, social and organizational context.

The purpose of the case study is not to produce predictive theory, as would be the case in positivistic research. Instead, case studies are useful in aiming to provide social accounting theories – theories which explain accounting as social reality – that have interpretive and explanatory power towards the empirical observations the researcher has made in real-life settings. (Scapens 1990)

The benefits of case study method in relation to research concerning management control systems have been acknowledged. Langfield-Smith (1997) argues that case study research has the potential in the deeper examination of the process involved in the relationships between management control systems and strategy formulation and

implementation. Langfield-Smith (1997) continues that case studies are useful, as they allow the researcher to examine a wide range of controls, including such controls that would be very difficult to capture and measure with surveys.

3.2 Generalizability, validity and reliability of the study

The generalizability of case study results has been widely discussed in methodological papers (see e.g. Lukka & Kasanen 1995) Despite the growing number of case studies, they are sometimes considered as having a low potential to theory development, being considered merely as producing anecdotal evidence (Lukka & Kasanen 1995). Case studies have frequently apologized for not being able to produce generalizable findings (Scapens 1990), and case researchers have been almost overly cautious of implying any kind of generalizability in their results (Lukka & Kasanen 1995).

The reason why case studies are usually seen as non-theoretical, is that theory is seen in a narrow sense, following ideals of the natural sciences, and it is forgotten that theory can be more speculative (Ahrens & Dent 1998). Lukka and Kasanen (1995) argue that in accounting research, generalization is often seen narrowly as covering only statistical generalization. They point out that statistical generalization is only one form of generalization, and argue that a well-conducted case study can produce results that can be *theoretically* generalized. Also Vaivio (2008) argues that qualitative research can be used in adding to the theoretical knowledge of management accounting practices even though generalization in a statistical sense cannot be made. Ahrens and Chapman (2006) stress that theorizing in qualitative research should be seen as a means for understanding and communication, and that the researcher should continuously position data, theory and the research question, in order to produce results that are interesting at a more general level. Thus, even though the examples and observations are grounded in their own specific context, qualitative field studies have the potential of contributing to theory development.

According to Scapens (1990), case studies should not even be compared to statistical research but rather to experimental research, where theory is used to explain observations. Those theories that are unable to explain empirical observations will be modified or rejected. And those theories that are able to produce satisfactory

explanations will be used in other cases. Thus, the aim of theoretical generalization is to generalize theories so that they will be able to explain the empirical observation made in the field. (Scapens 1990)

The objective of statistical studies is to produce general laws and simplify our understanding of the empirical observations, whereas case studies aim at expanding our understanding by producing meaningful hypothesis and theories, which are able to explain individual empirical and context-bound observations (Scapens 1990). Scapens points out that although general laws can be applied in general, they may not hold in every case, and can therefore be unable to produce satisfactory explanations in every case. Case studies, on the contrary contain a lot of potential, as they are powerful in producing "local theory" as well as explanations of individual cases.

Lukka and Kasanen (1995) also point out that in generalizability in accounting research is always difficult (regardless whether the method is statistical or case) due to the fact that the institutions and the social context of accounting change over time and place. Statistical studies thus, cannot be seen as having the upper hand in producing generalizable results in dynamic and fluid empirical settings.

3.3 Realization of the study

After discussing the general foundations of case studies and its suitability for management accounting research, the purpose of this part is to depict how this study's empirical part was realized. The process is described with sufficient accuracy so that the validity and reliability of the study can be evaluated (McKinnon 1988).

The case company was selected using the size of the company and accessibility as criteria. The researcher did not have a prior relationship with the company, entering this organization only as an outside researcher. Therefore, the study might suffer from access limitations, as the researcher did not have the possibility for participant observation, and was able to spend only a limited time on the field, in interviews, which were limited both in number and duration. However, being an outsider to the organization can partly be seen in a positive light. It reduced the risk of the researcher

being blind to basic assumptions and preconceptions deeply rooted in the organization.

The theoretical background of the study was used to guide the empirical work. However, care was taken not to be overly restricted by a too structured theoretical orientation. Instead, empirical work remained sensitive for the emergent insight from the field (Dent 1991). This study was conducted in accordance with a customer satisfaction survey of the accounting and finance function in the case company. The main source of empirical evidence was gathered from interviews. But in order to widen the understanding of the case company context, both inside and outside documentation was investigated to complement the interview material, placing the interview quotes in the right context. This material included annual reports and internal educational and promotional material.

The ten semi-structured interviews were conducted in March – May 2009, during which the researcher made several visits to the field. Originally the number of interviews was set at eight, but at the request of the researcher additional two interviews were arranged. The interviewees included people both from the accounting and controlling function, as well as senior executives from the three business divisions. A full list of the interviewees as well as the duration of each interview can be found in Appendix 1. In addition to the semi-structured interviews, several informal meetings with the chief of corporate controlling and finance during the data collection phase were used, to improve the understanding of the case company context, so that meaningful theoretical interpretations of the empirical material could be made.

The interviews took place at the company headquarters in order to have a natural setting for the respondents. Other methods were also used to keep the interview situation as relaxed and informal as possible. Emphasizing the independence and neutrality of the researcher, as well as beginning the interview with casual conversation, were used to gain confidence. This reduced observer-caused threats to the validity and reliability (McKinnon 1988). All official interviews were tape-recorded. But the interviewees were given the opportunity to pause the recorder at any times if they wished to speak “off the record”. None of the interviewees used this

option, which could be seen as indicating that they perceived the relationship with the researcher as non-threatening and confidential.

The interview form that was used can be found in Appendix 2. Instead of keeping strictly to pre-formulated questions, probing questions were used to "understand the full implications of what was said" (McKinnon 1988, 52). The interview form was further developed in the course of the interviews, as the researcher gained more insight to the relevant issues. Questions were naturally also modified to fit the status and background of each interviewee.

The tape recordings were transcribed after the interviews in order to achieve a factual record of the data and safeguard its contamination with premature interpretation, which according to McKinnon (1988) is crucial in field research. In order to arrive at an interpretation of the events at the field, the empirical data was mirrored against the theoretical background. Being careful not to jump hastily to the interpretation, the empirical evidence was positioned against theory during several iterative rounds, seeking possible alternative patterns in the data (Dent 1991) before arriving at the suggested theoretical interpretation of the empirical findings.

3.4 Description of the case company and industry

3.4.1 Description of the case company

The study's empirical part was realized at Rautaruukki Oyj., which is a Finnish based international corporation. Rautaruukki Oyj., hereafter referred to as Ruukki according to its marketing name, is a basic industry corporation operating in 26 countries, mostly in Europe. The core market areas are Finland, Nordic countries, Central Eastern Europe, Russia and Ukraine. The company employs some 14 300 people, of which around 7000 in Finland.

The company was established in 1960 as a state owned company, after which it has grown by several acquisitions and mergers. Ruukki became a listed company in 1989, and the state of Finland gave up its position as a majority owner in 1997. Today the

company's share is quoted on Nasdaq OMX Helsinki. With the net sales amounting to over 3800 m€ in 2009 the company is currently among the twenty largest companies in Finland.

The history of the company started when the iron production was put into operation at Raahe Steel Works in 1964. In 2003, after the current CEO took over, Ruukki embarked on a major strategic turnaround program with the goal set to year 2010. From being a traditional steel manufacturer, the corporation has during the last years focused on a more customer oriented approach, developing its business to a more solutions based direction. Entering the headquarters in Helsinki, the business of the company cannot be left unnoticed. The visitor is handed a metal Ruukki visitor pass plate to be placed on the chest – highlighting the pride of the company in the traditional steel-production business. Otherwise the remains of the traditional production-centred orientation seem long gone. The polished corporate image and the steel facades of the headquarters sparkling in spring light, convey the picture of a modern enterprise.

Moving towards the solutions business, Ruukki is providing its customers with metal-based components and systems as well as integrated systems for construction and engineering industries. In the traditional metal business, the company takes pride in offering customers with a wide range of metal products and services, with the focus on growing the share of less price sensitive special steels. The main customer segments are residential construction, industrial construction as well as companies operating in lifting, handling, and transportation businesses.

In line with the strategy reform, the organization of the company's operations is structured along three customer-focused divisions. Two of the three divisions, Ruukki Construction and Ruukki Engineering, are responsible for the solutions businesses whereas Ruukki Metals operates in more traditional business. The structural transformation from being a traditional steel manufacturer into operating as a solutions provider is aimed at protecting the company against strong fluctuations in steel prices. By offering customers with more customized products the company intends to boost its competitive edge. The strategic goal is to increase the share of the solution businesses to over 50% of the net sales. Strong progress has been made. In

the year 2008 the solutions businesses accounted for 48% of the consolidated net sales.

The wider strategic restructuring program has, naturally, also brought along substantial changes to the way accounting function is organized. The structuring of the company into customer divisions placed new demands for accounting data, which now had to incorporate customer oriented accounting as well. The new ways of organizing accounting, lead to rather complicated systems. The validity and ownership of the figures got lost for a while, as the chief of corporate control and finance states:

> We sort of got into some problems in it… We kind of, well not anymore so much than compared to the situation for two years ago, but we've had some problems with the credibility of the numbers. That became as a result of the whole turnaround of the accounting system. We have allocated numbers criss-cross, so the ownership of the numbers has been a bit lost. (Chief of corporate control and finance)

The interviews constituting the empirical part of this study were conducted as a part of a customer satisfaction survey of the accounting and finance function. The accounting and business controlling function has been undergoing a development program during the last few years, in line with the larger reconstruction of the whole business. The objective of the development program concerning the business-controlling function has been to move away from standard accounting, focusing more on business-oriented and supporting role.

3.4.2 Description of the three divisions

Ruukki Construction serves customers in the building construction industry, especially in commercial and industrial building as well as customers in the infrastructure construction industry. The goal of the division is to become the industry leader in steel construction in Europe, supplying steel-based solutions and components to speed up and rationalize new construction. In year 2008 the division accounted for 28% of the corporation's consolidated net sales. The division has grown through acquisitions. And the accounting environment, from the IT systems point of view, has provided the accounting and management personnel with many challenges.

The myriad of different data systems used in different business units have meant that the consolidation of accounting data has been difficult.

Ruukki Engineering, the other of the two solutions divisions, has its goal on being the leading solutions supplier to its customers operating in producing equipments for lifting, handling and transportation as well as the energy industry. Ruukki Engineering's competitive advantage lies in offering customers total deliveries and a complete value chain for fully assembled systems and components. In recent years the division has grown through several acquisitions. It currently accounts for around 20% of the consolidated net sales of Ruukki Corporation. In 2008 the management model and organization underwent a restructuring: from being a matrix organization it moved to a line organization.

The third division, Ruukki Metals, relates to the traditional steel business. This has been the core of the company ever since it was established. From being a traditional bulk steel producer, the focus has, however, shifted to strengthening the company's competitive edge by focusing on special steels. These are less price sensitive than bulk steel. Ruukki Metals aims at special steel products accounting for an increasing share of the division's net sales. During the last years the company has managed to increase the portion of the special steels of net sales, and in year 2008 special steels brought around 27 % of the division's net sales. In February 2009, the production division was merged to Ruukki Metals. From the three divisions, Ruukki Metals is the most established one. It still brings the largest part of the corporation's net sales.

3.4.3 Industry and market situation:

After the company embarked on the new strategic direction in 2004 the development has been in many ways positive. That can be demonstrated by the steady growth in Ruukki's comparable net sales, as well as by the company's ability to exceed the EBIT margin target every year.

Even in the beginning of year 2008 the outlook for the company remained bright. Demand in all market areas and customer industries were good during the first months of the year. The company continued on a steady growth path. However, during the

third quarter of the year 2008, in accordance with the global credit crunch, the market situation started to show signs of weakening, resulting in a dramatic change towards the end of the year, as stated by the company CEO in the annual report:

> There was a dramatic change in the market environment during the fourth quarter, especially in December, since the international credit crunch has affected almost all Rautaruukki's customer industries. (Annual Report 2008, 2)

The downturn was unanticipated, strong and rapid. As stated in the annual report:

> The fact that multinational steelmakers had to considerably scale back production shows just how rapid the turnaround in the steel market was. (Annual Report 2008, 6)

After the successful years in the past the company thus was facing a totally new situation, as the CFO of the company illustrates in the following quote reflecting on the seriousness of the current outlook:

> I mean we did have the last five years, there you see the turnover and gross profit, the business has been going really well, and the balance sheet structure is looking really different, our return on capital ratios has been over 25% the whole time, our goal is only 20%, so these are pretty great numbers. Now it is going like really bad. It has been going bad as hell in the beginning of the year. I don't know how long this recession is going to last, but if we look at Europe and North-America and South-America then 40% of the world's blast furnaces are closed. And everybody knows that if you need to shut down a blast furnace, then it is really not going good... (CFO)

The strategic turnaround designed to protect the company in weaker market situations is currently put to test. Furthermore, due to the global credit crunch and the impact it has on the real economy the near term outlooks for the company remain uncertain. The length and depth of the global downturn are impossible to predict.

4 Case description

This chapter presents the empirical evidence gathered from the field. Key observations and other illustrative pieces of data are presented, as well as the organizational context are presented and described with as much accuracy as possible, so that the empirical material can be later analyzed and theoretically interpreted in sufficient depth.

4.1 The accounting context under reconstruction – building activity to controller function

We begin this empirical journey by a description of the general context in which the controllers work at Ruukki, by taking a look at the way the accounting and controlling function is organized. We also examine the organizational influence given to accounting numbers and accounting personnel.

As stated earlier, Ruukki embarked on a major strategy turnaround-program in 2003 after the current CEO took over the company. From being a traditional production-oriented and functionally structured metal producer, the company was restructured according to four divisions. The strategic aim was to move upwards in the supply chain, not only operating as a raw materials producer. Instead, clear goals were set to increase the solutions businesses' proportion of the whole business. In line with these strategic objectives, the former functional structure was changed. The four divisions were structured around customer orientation. This new direction meant a radical change also in the way management accounting was organized, and the chief of corporate control and finance even suggested that accounting systems changed "all too radically":

> Yeah, all too radically, I'd say. When the customer divisions were established, for example all the steel factories, their net sales and costs are divided according to customers. So we had to go through all customers and name the division they belonged to. And then costs were divided accordingly – using all kinds of allocation formulas and so on. So it became a bit too complicated you could say. (Chief of corporate control and finance)

As the accounting systems were turned upside down, and were perceived as being "too complicated", there was a period of time where the ownership of the figures was lost. This created some problems for the organization. Toning down the complexities of the system and going back to basics has been the major aim in the last years. This has been the goal in order to achieve more validity to numbers and to increase their legitimacy in management control and the organizational processes surrounding it.

As a result of this lager management reform, the role and the actual functioning of the management accounting function have also been under major development scheme after the current CEO took charge. As the business controller of one of the divisions revealed, the company's strong accounting based culture, where numbers are seen as key part of the business instead of a necessary evil, is partly seen as originating from the finance background of the current CEO:

> We have a pretty strong culture in managing through the accounting numbers. We have the CEO, a former finance guy, and the CFO of course as a partner – so we have quite a lot of that kind of culture in the house that things are looked in light of the numbers. And they do have a role in decision-making. (Business controller B)

Accounting numbers are given a strong role in the management process, as the quote from one of the division presidents also reveals:

> I have seen that in companies as well... Very distanced accounting, I mean. The use of accounting merely in the reporting side. But I myself use the accounting numbers a lot in my management. (Division president C)

The customer satisfaction survey of the functioning of the finance and accounting function, which was undergoing at the time of the interviews, signals the commitment to build and sustain a constructive and active role for controllers. The role of business controllers in the company has significantly changed towards a more challenging and sparring role throughout the organization, as opposed to the former management model, where "it was the CEO who challenged the whole company" as stated by the division president C. Increasing the initiative and the activity as well as strengthening the role of controllers even further, is seen as an important area of development. This stems from the corporate management philosophy of "leading by numbers". The chief of corporate control and finance stated:

> The culture is there, and there is a demand and place for it (active controlling). And it is expected that finance takes a strong role. (Chief of corporate control and finance)

Elaborating further the influence of the culture as a strong determinant of the role of the controllers and finance function, he continued as follows:

> I'd say that it is more a question of character, and then secondly it is the culture of the firm, if it is the kind of result and profit oriented culture – and management by numbers – then there is a call (for accounting people) to be prominent and active. Then there are organizations that are sales- or engineer-led. And they are like "yeah, I guess the profit must also be calculated…". So they have a totally different kind of management philosophy. (Chief of corporate control and finance)

"Leading by numbers", as a management philosophy, is strongly reflected in the encouragement that management accountants receive for taking on more responsibility in the management process. The active role of controllers is strongly emphasized.

The ability of the controllers to achieve organizational influence and an expansion in their role are also encouraged by structural arrangements. In accordance with the strategic turnaround program**,** in which the functioning of the company was organized according to customer segments, attention was focused to the structural arrangements concerning the controller function. Controllers were placed in all business units and paired up with the business manager of the unit. The logic in this was to achieve closer physical proximity to operations:

> That's why they have been placed into business units, so that they wouldn't have the whole market-area's numbers to figure out and make sense of. (Division president A)

> Actually, ever since 2005, we have been trying to build up a partner system [--] Already when I came here in 2005, the organization was restructured so that each and every business unit had its on controller function. The idea was that it would form a partner with the business. The biggest concern that I in general have of the challenges in accounting function is that, is it possible to understand the business and the market-area sufficiently well. So that was the idea behind pairing the business controller (with the business manager). That the controller would strongly participate in the management of the business unit. That way the information from the customer, industry, markets and so on would emerge. (Division president A)

The quotes above reflect the reasoning behind the structural arrangements. Controllers were given clear responsibilities over well-defined organizational units, in order to

facilitate the active role of the controller at an operational level. They would now have the chance to better understand the operative business. It seems that the operative knowledge and the necessary business understanding were seen as prerequisites for a more active business orientation and steering. Business controllers were given prominence, responsibility and authority in the overall management process of the business unit, together with the business manager.

In addition to the structural arrangements to promote operational proximity, also the philosophy of the controller as "a substitute business manager" as stated by the CFO of the company, signals the more prominent role in management process. Instead of being mentally and physically remote and distanced accountants, business controllers were soon perceived as "being where the business is" as the division controller A put it. Their "mental accountability" and their responsibilities now leaned towards the business manager instead of the official higher superior in the finance function. This became evident in the following quote by one of the business controllers:

> My official superior is the CFO of the division. But less do I talk to him than with the business manager of my business unit! (Business controller B)

The division controller A further explained the kind of "mental presence" needed from the controller with the following words:

> It is the kind of thing, that you (as a business controller) are either in or you're not, it's a kind of a clock frequency. If they make a deal, or some changes, you keep the wheels turning So you have to be there in the same clock frequency – and be in the swim when decisions are made. (Division controller A)

The controllers were clearly perceived as being very close to the operational level of the organization. Accounting could not be seen as separate function. Instead close personal presence on the business side was emphasized:

> Oh, yes, my guys (business controllers) at least are totally hands on! That's what I expect of them. Accounting function cannot be barricaded into corner offices. They must travel to business units and challenge people – it's like they are partners with the business. And they must have hands on information so that they can make the right moves, and also evaluate afterwards if it was the right move to make or if we still need to change course. (Division president C)

4.2 Linking accounting numbers to management processes

After examining the positioning and overall accounting context in the company, we now turn to focus on how accounting numbers are linked with the management process in this empirical setting. This chapter entails a description of how performance is measured and managed. Instead of focusing strictly on technical features of the management accounting systems the purpose is to shed light on how accounting controls are actually used in the organization, and how they link to the management process. We begin by taking an overall look at what kinds of measures are used in the organization. And, we look at how they are perceived by organizational members. We will then describe how the measures are discussed – argued, questioned, and explained – then used to manage performance. We keep an eye, of course, on what kind of role the controller plays in the management process.

4.2.1 Performance measurement in its local context: the monthly management meetings

Clearly, performance is monitored and followed by tracking a wide spectrum of measures. Traditional financial, profit and balance sheet measures are complemented with key performance indicators (KPI), which are more operational in nature. Key performance indicators can be divided into key areas relating to delivery accuracy, safety measures, inventory measures and customer measures. These measures are tracked and followed throughout the organizational hierarchy. They are gathered by the controller function and reported in the monthly performance report. In addition to the measures common to all divisions, smaller business units on the lower level of divisional hierarchy had their own indicators. These were more detailed in nature. As the CFO explains, the performance measurement system can be seen as forming a pyramid:

> Well, of course (the same measures are used on all organizational levels), and in addition they have their own measures that they follow on a more detailed level. So it is a kind of a hierarchic system in a way. (CFO)

With the variety of measures tracked and followed the amount of information collected monthly rises to significant volumes. In the following quote the CFO characterizes the monthly report – acknowledging the huge information content it has:

> These are the things we track, the accidents, the safety measures they are important in the entire corporation, and then delivery accuracy. Then we monitor the turnover in employees, growth in sales and EBIT and capital employed, so the usual stuff. Then we have the portion of the solution business of the total net sales and the portion of Eastern Europe as well as the portion of special steel products of the net sales of metals division and the portion of SGAs. [--] So this is a heavy bundle, this monthly report. (CFO)

By contrast to the more aggregate financial measures such as net sales, operating profit and several balance sheet measures, the KPI measures cover a large variety of the company's operations. They are seen as leading indicators to the financial measures. Furthermore, as the number coverage is high, the measures provide the means to probe rather deep into the organization, as one division president explained:

> Oh, yes, I can dig from here... I can grab the guys in Hungary by the scruff of the neck if they don't do their jobs! (Division president C)

Even if the KPI:s are not financial measures, the controllers are responsible for collecting and reporting the measures on a monthly basis. As there KPI:s cover a wide array of different measures, they allow the controller an astonishing visibility into the details of the operations. By examining the different KPI:s in conjunction, the controller thus possesses a powerful tool. It provides the controller access to various sources of quantitative, hard information that he can mobilize when engaging in discussion with the operational organization. The information offered by this extensive measurement system can thus be seen as a factor enabling interactive control.

> And this is what I do a lot: I look, for example if net sales in some unit is something, I check from the KPI side how many tons were delivered or what the order backlog was the previous month? Has the order backlog given us the prior information that this is the amount that we are going to deliver? Then I check how many hours thy have worked, how many order lines there is, how many overtime hours they have possibly worked and so on.. For these purposes it is a pretty easy set of measures – where you can always go into details and check all the indicators. (Division controller A)

> So this is my way of doing things. And then when I next time give the guys a call, when I have the discussion with the person accountable, I have directly all the

> information about what they have done, what the numbers tell me, and therefore it allows me to easily have a very in-depth discussion! Have they been on three shifts, four shifts – a thing other people would not have a clue of – but I mean you can see it directly of the numbers! [--] So you know immediately that some things need to be lifted up. And when business controllers do this (check the KPI:s), they can understand and trust the information and when you do it every month you get the understanding and you see that ok, this is possible and this is not, so you get a good touch to it. (Division controller A)

As the quote from the division controller A illustrates, this variety of numbers can be seen as the tool enabling a deep visibility into operations for the controller. Furthermore, as one the business controllers of the same division reflects in the following quote, the numbers are seen as having a huge informational content. They seem to be perceived as neutral and objective measures by these organizational actors.

> I'm always totally excited over how you can see so many things by looking at the numbers! When you chew them a little, and when you have a business unit you are familiar with, you see sort of immediately that ahaa, okay now there is something going on! And then you look that, okay this and this has now happened here. And when you then give them a call to that business unit, they are totally like "damn! Where did she see that?" So there are a lot of issues behind (the numbers) that if you don't work with numbers, and when you (as a business controller) make the analysis and discuss the issue with the person from the business unit and then when they don't understand that the numbers show so obviously the things, they might even dare to object. But the camera never lies. And similarly, well, assuming that there are no typos and no systems failures, the numbers do reveal the truth. (Business controller A)

After this brief introduction of the nature of indicators and performance measures used in the case company, the purpose of this section is also to portray how they are being mobilized as a tool for management control, and what role the business controllers play in this critical process. How are the measures discussed and addressed and what role does the business controller play in these argumentative processes where measurements gradually are given meaning and significance?

Once the performance measures were collected they were reported in the monthly performance report. This was seen as central in the organization. It formed the basis of the monthly management meetings. The measures and accounting numbers gathered in monthly performance reports were used on all organizational levels, and they were discussed in monthly management meetings, at the local unit in question. The performance reports were therefore addressed in all management groups –

ranging from small units to corporate management board. With the purpose of addressing the same issues throughout the organization, the platform of the monthly management meeting was used as a standardized forum, a preset social space for the discussion.

> The monthly performance report will be always systematically reviewed in the monthly management meetings. Market situation, costs, sales, investments, we will go through them all with a certain agenda every month, for about two to three hours, with all of the divisions. There is usually always one person from the division. We'll sort of take a person from one step below to tell us how they are doing. And in a similar manner they will then hold similar meetings with their own people one step below. They will cover the same issues so that it goes in a way hierarchically a few steps below in the organization. So we are at the same field, the control system (performance report) is the foundation, and all essential information should then emerge from there. (CFO)

The division president C continued by also stressing the bottom up nature of this central discussion process that related to the performance measures, in the micro-setting of the monthly management meetings:

> If we take a look at how I run my division, so I have here 13 smaller units, they have their KPI:s according to which they are measured [--] And then I have here two business units, so these two business units have their monthly management meetings where the smaller units report how they were doing. And then I have a similar kind of meeting with them (business units) as soon as they have gone through the report with the smaller units. Usually the following day or in the same week. Then we (the president and the controller of the division) go and report to the management of the corporation so the CEO and CFO… (Division president C)

The monthly management meetings brought together operational managers and were chaired by the head of the business unit in question. The presence and role of the CEO or local business controller was, however, seemingly central – he possessed a central role in setting the agenda and directing the meeting that was based on the monthly performance figures. In fact, the controller was, at times, perceived as being the primary leader of the discussion. The business controller in one of the divisions depicted the organizing role of controller in these meetings with the following words:

> Well, it is really I won't say strong but really significant in the sense that the monthly management meeting rests very much on the discussion around the numbers. In a way that is the pulse of the business. It tells us the pulse and it is obviously the responsibility of the controller to present it, go through it, give the comparative numbers, tell how we are doing compared to last month, last year [--] In a sense I could imagine that the controller is kind of like the chairman during certain parts of the meeting. He runs the discussion and the goes through the accounting numbers; he

> collects the reasons around the numbers from the real life and confirms his own insight and intuition with the operative organization. (Business controller A)

As outlined by one business controller, the role of the controller is far from being only the technical producer of the figures and measures, even though this remains one part of the controller's responsibility. Quite the opposite: the discussions around the number – and being able to involve the operative organization to express their views around the actual numbers and measures – seemed central. This opened a way of achieving a meaningful interpretation of the performance figures. Instead of being a detached producer of performance reports, only scanning the reports in order to lift up only the measures under the specification range, the business controller directed discussion around the numbers. The aim was to arrive at an interpretation of the situation. This is done as outlined in the controller's comment above, by combining the quantitative accounting data with the relevant operational knowledge that could be "fished out" by engaging in dialogue with the operative organization. Thus the role of the controller is to ensure that the numbers get discussed and coupled with the more qualitative operational field view, which is articulated in the setting of the meetings.

The controller became thus responsible for digging into the measures. In the words of the company CFO: "Finding explanations behind every number is a must". One of the business controllers elaborated the role of the controller in probing behind the numbers and accentuated that the controller himself cannot have all the explanations. Instead, collaboration, cooperation and intensive communication with the operative organization was needed:

> The controller collects all the KPI:s. But the thing that the controller doesn't however have is *all* the explanations to all the numbers. [--] He only gives the analysis, what could be interpreted from it. And then the operative organization must explain the business reason behind it. Of course when the controller develops and knows better his own area he can interpret the numbers better, but that is kind of co-operation with the operative organization. You sort of are like, "ok, our price level has dropped, is it because we have priced our products lower or have we sold a batch of 2nd quality which pulls the average price lower?" So you need to discuss together with the sales, that "yes, this is exactly what has happened, we have made a deal of this kind of products and this much". (Business controller A)

The monthly management meetings became a medium for rooting the aimed challenging role of accounting numbers. Local controllers or CFO:s were in charge of

ensuring that numbers truly get crunched and thoroughly examined form various perspectives with a bottom up approach. The monthly performance reports and monthly management meetings formed a constitutive medium for management control. They provided the means for challenging the organization. The president of one of the divisions shed light on the role of performance measures and monthly management meetings in challenging the organization in these words:

> It has previously, in fact, been the CEO's role. He has challenged the whole organization, and it has not spread lower. But now it is like one step at a time, so the CEO doesn't have to challenge the whole chain. When the information reaches the top of the organization, it is already information that has been challenged many times. And therefore it reflects like the best opinion and understanding of the guys. (Division president C)

One business controller shed even more light on how one of the KPI:s, related to delivery accuracy, got discussed in this organizational space, and emphasised the role of discussion on all organizational levels – in order for the measure to truly achieve the intention of effective management control:

> Well, as a matter of fact, they (the measures) do influence behaviour quite well. For instance the delivery accuracy – measure… the information comes from the site, so there is a person in the site organization who reports these figures to us. And there is naturally, well, depending on the site location, but in most sites there is a weekly session where the delivery accuracy-measure will be discussed. And the reasons why the delivery accuracy numbers are lacking from the target value are then reported. These delivery accuracy numbers get reported from the site to the controller team, which then collects the figures. Then they will be discussed in the business unit management team and everybody knows that they go all the way up to the division management as well. And the feedback comes the same way downwards. But the most important thing is not so much that the management team follows them and draws their conclusions. The most important thing is that they are discussed on the site. (Business controller A)

Instead of being a cursory check for following the achievement of strategic targets, interviewees emphasised the ideology of the reporting practice, as collecting information and achieving discussion around the underlying factors that influence the business. As the division president C put it "the reporting practice is one with tracking and explaining", and the numbers get discussed "surprisingly comprehensively" at the top management level, as one division controller (A) acknowledged. Discussing the numbers in the corporate management board, the president and controller of division C stressed that, instead of only presenting the divisional figures, they were expected to come up with explanations to the numbers. They would also provide preliminary

action plans on how to address the relevant issues. The same procedure applied downwards in the organization as well.

> If there is a change (in the numbers) we need to know why. Has something radical happened over there, has some client left us? Or it can be something positive as well, like have we made a new good deal? So the guys cannot only march in and say that ”okay the numbers changed like this” They have to know why! And they have to explain them to us completely! (Division president C)

The mere production and presentation of performance figures for the previous month was by far not enough. The head of the business unit as well as the local business controller or CFO were expected to have “cracked down” the numbers beforehand. And they were expected to have drafted action plans accordingly.

> If there is something here in the figures, I need to be able to explain it and provide action plans on how we are going to deal with it. (Division president C)

Instead of using measures as only diagnostic instruments, as management by exception tools, they were widely and deliberately discussed in the organization. Not only measures that were below the specification range but also “green” measures could be lifted up and highlighted in the discussion: They could be celebrated and mounted by the controller to focus the organization not only to dwell on negative measures, but instead to motivate organizational members to learn from areas where progress had been made.

> Kind of like ”okay, let’s take some of the positive stuff as well, so these are the good deals, we have them too! Here we make things right.” So I wanted the sales organization to go through them and think what the right things are in these deals. Because we have really been great in these deals, and done the right things, whereas in these deals we are not doing the right things. And we should find out what we do right here and wrong here, and how we are going to change that. (Business controller A)

Discussing and lifting up measures above specification range was also considered important in order to get the whole picture of the business. Numbers were mere numbers after all. They were too aggregate to be solely relied on to give the right picture of the business and its performance. Especially in the current situation the company was facing due to the difficult market situation, the understanding of the reasons behind the “green” numbers was rising in importance. As previously held assumptions and heuristics behind the numbers did not hold in the new situation,

business controllers could not afford to rely solely on the familiar measures to tell the right story of the performance. There was a sudden call for even more deep-probing control. All numbers had to be cracked down, in order to fully understand the novel, pressing situation, where ordinary causalities needed to be re-evaluated. This became clear from the quote of one of the division controllers when asked if also the numbers well above specification range would ever be probed into and lifted up to discussion.

> Yes, absolutely, just today in fact. So in this situation, if you think what has happened in the markets, then more or less the business is kind of collapsing, and now it is more like if you see a good indication somewhere, you got to lift it up. (Division controller C)

This view was backed by the division controller B, who explained the reasoning behind the discussion of the green measures with the following words:

> Let's just say, for instance, the number of offers out, if it keeps on growing then is our business going to a better direction? Well in this situation, not necessarily. It is possible that the customers have now more time to ask for competing offers. Everybody's asking for offers like crazy. But how many of the projects really are put to action? It is a bit like "comme ci, comme ça". (Division controller B)

4.2.2 Performance measures in day-to-day context – creating a sense of urgency

The role of accounting numbers in the management process was not limited to a discussion in the monthly management meetings. Rather, they were visible and prominent in the day-to-day context as well, especially now that the situation in the company had suddenly changed, due to the global recession and credit crunch. Accounting numbers became the means to open the eyes of the organization. They created a new awareness. Especially, the global credit crunch and downfall in order books brought accounting measures under close scrutiny and made "controllers rise to an unexpected value" as the business controller A stated. Also one of the division presidents emphasized the everyday prominence of the accounting numbers:

> They keep turning up in everyday discussions and communication inside the organization. I mean I have a management team of five people, and they discuss about the numbers daily. So I don't wait for the management meeting to analyze something, but instead they can be seen in the everyday work, especially now when the situation is what it is. (Division president A)

As the quote reveals, it was stressed that merely formal reporting practices and monthly meetings were not enough. Instead, the interviewees emphasized the use and prominence of accounting numbers and performance measures in the ongoing daily context. This was naturally reflected on the role of the controller as well. The division controller in the same division also emphasized the role of the controller in the everyday context, instead of being a distant producer of a monthly report and "lifting his head up from his chamber only once a month". He further stressed the constant and everyday prominence of the accounting numbers in the management process by stating the following:

> It is not enough that you produce certain figures once a month, you are either in in the business or you're not. You keep the wheels turning. (Division controller A)

The CFO of the company further elaborated the role of the controller in keeping up with the operations of the unit – on a daily basis instead of only producing a report once a month. Producing a report once a month was deemed rather as a verifying "back up" tool. The actual presence of the controller and the accounting numbers in the daily organizational context was in fact seen as a key constitutive element of controller's role. It was the factor enabling management control.

> The controller should kind of continuously know how the unit is performing in a running rate sense, even without calculating any profit, he needs to know that net sales is 10 million and operating profit is 3 million. So if he gets the sales figure, he should know on average how the profit looks like; he has to know the costs that well. And if something extraordinary is happening, he should know that in advance as well. So in theory there shouldn't even need to be any reporting – or the report should actually be only the means to verify what is already known. (CFO)

This pro-activeness expected from the controller is also at odds with the notion of the controller being a purely diagnostic watchdog in the organization. Controllers were expected to challenge the organization. And they were expected to prompt action plans even before the difficulties would be reflected in the performance measures. This naturally required a strong business understanding of the controller.

> ..pretty often they (controllers) see that okay, now there's some problem on the way, if you look at the sales volumes, they see that okay, that area has dropped and they know that we need to make some operational changes. If nobody has already taken any action regarding that, he starts to ask that should something be done about it. So yes, it

> is a noteworthy role for them! And the more experienced they are, the more they start to understand the business. (Division president C)

Furthermore, the controllers were given responsibility in the management of their unit. An active role of the controller, in the sense of being both "mentally" and physically present and visible in the local context, was seemingly preferred. This meant, in the words of one CFO, being "where the business is" on a daily level. Armed with the detailed visibility achieved by the KPI:s towards operations, and having a strong mandate from the business unit manager, the role of the controller was far from being a distant observer. The role as being the right hand of the business manager can be seen from the following comment made by one division president:

> I do use the CFO of my division as a filling my shoes pretty often, when I cannot be in two places at the same time, and he has gotten into full speed. So I send him alone there (to the business unit) and he does a hell of a good job. (Division president C)

The comment made by the division president B further reflects the way the controller's role is perceived in relation to the management process in the case company. The business controller is strongly seen as operating in a leadership role, instead of being only a distant producer of financial data or number cruncher. Controlling function cannot be seen as being separate from the overall management context:

> When the overall market situation is bad, the controller has to adopt a more aggressive role, as in the management in general. In the same manner, as the whole management style changes, so in the same way the controller function needs to change. (Division president B)

Working close to the operations, with strong powers from the divisional president, the controllers were seen to be very much "hands on". The presence of the controller in his own business unit was central, as explained by one division president.

> Oh yes, my guys are very hands on! [--] Controllers have a pretty strong veto right. And I think we have been able to create a pretty good partnership (controller and the head of business) relationship, one of them being the expert on the operational and business side and the other mastering the finance – and they can then together consider the actions to take. (Division president C)

The CFO in one division further depicted the role of his business controllers:

> They are where the business is, they do communicate. (Division controller A)

4.3 Illustrating the nature of interactive control

In this field investigation, it soon became clear that interactive use of accounting numbers was largely dominating the management practices of the case company. Discussion around accounting numbers and performance measures was seen as a constitutive part of the controller's role. It was essential for the actual workings of management control.

The previous section depicted how accounting numbers were entwined with the management process. It showed how the monthly reporting meeting became a forum for interactive discussions practices and how the performance measurement system was used as an interactive control system. This chapter offers a deeper and more specific insight into the nature of this interactive control in the case organization, by depicting how the interactive controls were perceived by the organization, and by illustrating how interactive controls became the essential medium for mobilizing the organization.

4.3.1 Transparency in accounting numbers – positive interactiveness

Even though interactive controls are by nature potentially considered as opening too much visibility, perhaps generating resistance in other organizational members, this was not seen as being the case especially in one of the divisions. When discussing the accounting numbers, controllers took advantage of the deep visibility they had towards the operational organization, gained by the examination of the various KPI measures. However, despite the potentially revealing nature of these interactive controls, there was rather limited resistance from the operational organization and business managers. This was explained by the one of the division controllers in the following words:

> We do probe behind and ask questions concerning the factors behind the numbers, we do it a lot. We have a very good transparency. We can follow and check numbers criss-cross and then we ask for the reasons behind them. But the guys know that. And we do not have that kind of culture in our company that there would be any (covering up) [--] contemporary corporate culture is more like, and management accounting in particular, that people know that numbers are transparent. And you've got to do your job well because your actions will show up in the numbers anyways. They know that they would be revealed in any case. (Division controller C)

The president of the division also emphasised the increased transparency in accounting numbers – and the fact that the organization had become used to "getting caught", if trying to cover up mistakes. This had led to the fact that ultimately organizational members had accepted that their actions would be visible through the transparent accounting numbers. They no longer felt the urge or need to hide their actions. Interactive controls were no longer perceived threatening, as people were accustomed to the revealing nature of transparent accounting numbers. In addition, the controllers themselves were seen as being more satisfied with their role in being active towards operations and deploying interactive controls.

> They (the controllers) are far more satisfied at the moment throughout the organization. And the transparency in the numbers, that is also one factor. So we can suddenly probe all the way to the lower levels and their numbers. And there's been a big development in the past year, that they do not try to cover any mistakes here (at the BU level) in the way like " Okay here's a mistake but if I move some money around like this, it won't show up there (in the division level)." So that has totally stopped because they always got caught and then they got carried by the ear! So there has been a pretty radical change during the last year. (Division president C)

However, transparency in accounting numbers did not only reflect to the possibility of digging deep into the operations and achieving wide visibility into the operational detail. Transparency meant also the accounting data and performance measures became accessible to other organizational members as well. The IT systems allowed the financial data to be accessed not only from the accounting function. Consequently, accounting numbers became not only the property of the business controller. Accounting became instead a matter for the whole organization. Different actors could access and dig into the numbers. In the following quotes, the CEO of the division sheds light on this intriguing phenomenon, on how the contemporary management accounting IT systems facilitated the access to accounting numbers, at different levels of the organization.

> Actually the reason why I have learned to use these accounting systems, even if I'm not a controller, is that it is so convenient. If I have a question I don't need to bother people, call my controller or the CFO and tell them that I need that or that number, I can dig it out of the system myself. Or then if in a meeting if somebody asks I can say that "Give me a minute I'll dig it up for you". So you kind of have the online information all the time. (Division president C)

> I get the sales figures by the week and by customers I can dig pretty deep. I can see all the units, how they are doing, what seems to be the problem. So that is a big difference compared to what I was used to in the "old life" [--] Information is so much more accessible these days. (Division controller C)

One of the most important observations of this field study was that, in effect, the accounting knowledge and corresponding understanding of the numbers was perceived to be important outside the accounting function as well. Accounting numbers had taken a wider significance.

> The business manager needs to learn to become a "controller" as well, that is kind of like the message here. He needs to understand his own figures and know that if you get that number to turn that much, it affects the profit by this amount. (Chief of corporate control and finance)

As can be understood from the quotes above, the field data suggests that the modern corporations employing extensive data and IT systems, which are able to track a variety of measures, places the interactive use of controls into a radically different setting. Accounting numbers previously in the hands of the controllers, are now like a common currency. Information reported in the IT portals is accessible throughout the organization – regardless of the function or organizational level. The seemingly transparent nature of the easily accessible accounting numbers, as well as the organization's openness related to information disclosure, was a factor influencing the rather unproblematic acceptance of the interactive use of numbers.

In fact, it appeared as if the usage of accounting numbers as mere diagnostic controls, with no links to everyday reality, would cause even more frustration in the organization. Instead of being concerned or frustrated by the increased visibility, and opposing the interactive use of controls, it seemed that other organizational members actually expected the controller to work in close contact with operations. They wished to see the accounting numbers used in an interactive way.

> If the controller's role is nothing more than to send some excels and templates to be filled, then I totally understand the reaction "What are those, I have never seen them.

> Never do I hear any feedback from them about the reports". So yes, I totally understand if they are thinking like "What is the purpose of these guys?!" (Division controller C)

> These days, I'm sure that business people understand that accounting data is an essential part of running the business. They get that it is not all about just selling and so on. But there's much more to it, and they all know it. But then there are also businessmen from different backgrounds, and I mean these division level accounting things. You do learn them very quickly, and they might think that I don't need any help (from the controller), I can calculate this and that... So the thing is, how to produce the added value in that situation. [--] They (business men) are very much aware of the business all the time: What kind of deals we are making? What king of deliveries are we making? How did the price negotiations go? So they have a lot of hands on information. And if then the controller is only there hanging and calculating something that you can see from the system, then I totally do get it (the frustration). (Division controller B)

Along the lines of the previous statements made by the two division controllers, the president of one of the divisions also explained how the interactive role of controllers was seen as being welcomed by the other organizational members. The meaning and purpose given to numbers by the interactive discussion was rather seen as motivating and encouraging by the business managers. He also pointed out that interactive controls, which open visibility into organization, could not only make mistakes appear more easily. They also had the power to reveal any success in the measures. This would then be celebrated.

> "Well yes they (the business side) take it pretty well. I think in fact they get motivated by having someone to follow what they are doing. And they do receive positive comments as well. For example concerning KPI:s, I send them information that this is the first week with no accidents in the whole Division, so they do get positive comments as well" TM

4.3.2 Negotiating around the numbers – linking with operative knowledge

When discussing the interactive performance measures in the monthly management meeting, the emphasis was placed on linking accounting numbers to operational knowledge. The importance of lifting up locally generated cues and interpretations from lower levels of the organization was evident. One of the division presidents explained how grass root judgements became crucial I order to keep up with the risks of the operative business:

> I have to know what has really happened there, let's say the factory in Norway. If ships deliveries are late there, then I need to be able to report it here. I need to know why their delivery accuracy has dropped by 20% or e.g. why in Vaasa Wärtsilä Diesel has been upset with us, or why China has not been able to deliver to us all that they should have. (Division president C)

Furthermore, the mere numbers reported in the monthly performance report were not perceived to have enough information content, despite the vast coverage they had into the company's operations. Numbers were only numbers – despite the myriad of measures, numbers remained too aggregate to reveal the pieces of operative knowledge that was focal information to this organization. Judging by the numbers only, the company risked missing out on the real reasons behind the metric. This could ultimately lead to drawing incorrect conclusions. The discussion around the performance measures was used to build a more comprehensive picture around the numbers – it provided the means to arrive at collectively crafted interpretation. Ultimately, this would make sense of the accounting data.

> So for instance, if the number of customer goes down, then we need to also track that they have not made a deal with anybody else, so we try to analyze it. For example if prices fall and volumes drop and that is pretty drastic, and then you could assume that the customer has made a deal with another company. But actually not necessarily has that happened. It can be that the customer's own business has dropped. So these are the kinds of things we analyze constantly. (Division president C)

These vital cues had to be collected from lower levels of organization. In this sense the hierarchic system of using interactive performance measures provided a way of building structure to the information exchange in the organization, between different hierarchical levels. It became a structured way of lifting up focal pieces of localized views and evaluations. It was seen as an effective medium for lifting and promoting information distribution from sometimes quite operational issues, as the division president C explains:

> Oh yes (numbers are good for opening up discussion)! The thing is that at the same time we discuss all the investments and everything, so the number data goes through and they get discussed, and then all this sort of informal information goes through as well. So you get the informal issues all the way up here. It of course gets filtered all the time, you cannot know everything... But then I can explain the overall picture forward in the organization, so I think it works pretty well. (Division president C)

Furthermore, interactive controls were clearly able to achieve pressure. The business people were expected to come up with explanations and action plans to the numbers. The systematic discussion achieved through the standardized use of interactive performance measures gave structure and direction to the dissemination of critical cues.

> The packages that we go through, the business presents them and then they actually know what our next question is. So they have already some kind of a presentation on how the numbers will evolve. So now we are able to get more pressure to them. If we compare, then previously somebody might have asked for some background information on the figures, but now it is more systemized (Division president C)

When negotiating the meaning around the numbers the linking of operational knowledge was in a decisive role. Controllers became responsible for linking the operational knowledge to the accounting numbers so that they would become meaningful to the rest of the organizational members. In encouraging the operative organization to share their views one of the business controllers emphasized the importance of the controller in turning the numbers into the language of the recipient:

> The controller needs to kind of read the numbers out loud, because the others are no controllers. They don't read numbers like we do, and we can't expect them to. An active controller is not a person producing a lot of reports and sending them by email. An active controller is a person lifting up an important issue, and being like "tell me a little about this". And then the person can explain it in his own words, but he doesn't have to look at the report and be like ahhaa, now I'm going to lift up this and that (that is the job of the controller). (Business controller A)

Operational information was, in fact, seemingly important in other ways as well. In order to encourage and achieve fruitful interactive discussions around the accounting numbers, the controller's business understanding in terms of being aware of changes in prevailing market situation, understanding customer base as well as having sufficient operational knowledge, was imperative. In achieving an understanding of the state of the business, the controller used the various KPI:s as a mediating tool.

> The controller has to strongly understand the business and how it is done. If they're selling a brick, he needs to understand how the brick is made and what the customer base is like and the market, what is happening there and so on. He needs to understand all that in order to get the discussion fruitful. Otherwise he's just the guy who brings the report to the table and doesn't understand anything about anything. (Division controller B)

4.3.3 Creating meaning around "the numbers"

Whilst taking a closer look at the deployment of interactive controls, the empirical observations emphasise the use of interactive discussions to make sense of the numbers. The previous section depicted how accounting numbers became linked and coupled with more operational knowledge during the interactive exchanges. Furthermore, it became evident that these linkages were decisive in making accounting numbers meaningful to the rest of the organization. The interactive use of performance measures, thus, became the means of creating and negotiating organizational meaning around the numbers. In this section we take a closer look at the controller's role as a mediator in this process of sensemaking (Weick 1995). How was meaning, more specifically, created during the interactive discussions?

It seems that the huge volumes of possible accounting data, such as the various financial measures and the more operational KPI:s, placed stringent demands for the handling of information. It served as an instigation for the controller to act as a mediator for sensemaking. As one controller stated:

> The set of all the measures, it is a pretty huge net – sort of covering all the operations and activities. (Business controller A)

The chief of corporate control and finance further characterized the challenges controllers face in contemporary organizations. Emphasizing the need of understanding the business as the numerical data grows in complexity and volume, he stated the following when depicting the information system context of the company:

> It is complicated, there's a lot of information, and that is just the thing that places demands on the substance know-how of the controller – so that he really understands what is essential and what is not. The information overload has really multiplied so you need to have business understanding [--] So in that sense I do think that the demands and role of the controller are emphasized when the flood of information is so much larger these days. (Chief of corporate control and finance)

Faced with the challenges of the increased data volume, the controller's role became oriented towards simplifying the accounting data, so that also the operative side of business would grasp the numbers.

> These days you have more and more elaborate systems that are supposedly really sophisticated. And then nobody really understand them [--] But people need like very simple information. It is often forgotten that accounting needs to go down to that level as well. [--] I've always considered accounting as a kind of a simple thing, and the operative accounting should be kept as simple, so that the person responsible for the operations understand that this effects that and so on. It should be kept so simple that everybody who has profit accountability understands the numbers. (CFO)

The myriad of accounting measurements leaved much initiative to the controller, who had substantial influence over which measures would be lifted up and given a sense of relevance or urgency on the management agenda. The controllers' role was to direct the organization to certain cues in the data, so that it would not remain a puzzling flux of grey mass. This was evident in the following quote made by the division president C, who emphasised this role on "raising flags":

> The controllers here in the different units feel that they have (more power), and I myself have told them that "Hey, you are now the flag raisers in these things!" [--] So they have the right to raise a flag, and these business unit controllers have liked it. (Division president C)

The quote reflects the strong organizational influence the controller had in the company. The controllers had the authority to frame and lift things up to the management agenda, exceeding the boundaries of the traditional monitoring tasks related to producing reports, and extending their influence towards the operational level of the organization.

Another controller shed some light on how the controller must have a certain hunch of which numbers should become probe deeper into. Otherwise the data flow would be overwhelming. In addition, in the hectic everyday reality of this empirical context, there was really no time to go through all the numbers. The controller had to rely on his gut feeling when selectively mobilizing the accounting data.

> Yes, it calls for a certain intuition [--] It is just a kind of hunch you know, that if you have a number and you just can't find a reason behind it, and there could be a million things explaining it, then you need to have some kind of a hunch that you then start to follow. Because otherwise it will take you a week, if you start combing through all possible reasons. You just don't have the time for it. You have to have a strong hunch... a strong feeling that okay, this is the thing causing it [--] Sometimes you notice it in yourself that sometimes there's too much data in a sense that sometimes the field is suddenly just too big and situations change fast – and then you lose the hunch totally and you cannot believe the numbers. (Business controller A)

As the business controller stressed, instead of going through all possible performance measures, focus was directed to some of them so that the organization would not get paralyzed.

Thus, interactive controls became the way of creating meaning around accounting numbers in the organization. By interactive discussions, numbers did no longer appear as being decoupled from the daily operations. The interaction around the performance measures rooted the measures firmly into organizational reality. Connecting numbers into tangible actions and activities, made the numbers more "alive" to the organization. One business controller explained the benefits of the interactive discussions in the following quote highlighting their power in embedding the numbers to the organizational actors' reality:

> The biggest gain lies in the fact that when you do something in your everyday work and then you don't have a clear understanding as to how it influences and what it influences. But then when you are shown and explained the next step of the process and shown that this is how you perform – and this is how your doing affects the big picture – then that's where you get these "ahaa!" experiences and strokes in a sense that "Oh my god, I had no idea it affects this way!" So you get both reactions at the same time and it is really important. Sometimes I feel that we (controllers) just sit here in an ivory tower and shout that "looking good or not looking good". If it ends there, then the caravan just keeps on going and dogs keep on barking… So it doesn't change direction, unless you really invest resources there. And these are people that are not used to reading reports and calculating things, so just showing the report to them or sending it by email… That's not enough, you've got to explicitly connect it with their everyday life. (Business controller A)

Ultimately the creation of meaning served one important goal in the organization – achieving the foundations for action. The actual numeric outcome of the performance measure was in fact seen as a starting point – the usefulness of the performance measurement system and the monthly management meetings was seen to rely on the discussion of the underlying factors and the specific incidents behind the measures. Measuring performance was not the end product. Achieving new action plans surfaced as the ultimate goal. For example, when addressing the delivery accuracy-measure, which was considered as one of the most crucial of the KPI:s, care was taken to go beyond the numeric value striving to discover the underlying factors affecting the measure. Discussion, if left only at the level of stating whether or not the value of the measure has reached the target, was seen as having no value. The discussion had to go a few steps further.

> The measure itself is like only the data about the issue or the action or the business component that is agreed to be measured. The relevance doesn't come until the data has been analyzed through discussion and when it leads to action. So verbally it is funny to talk about discussing a measure, the discussion should go one or two steps further: why this value? What is the reason behind it? What are we going to do about it? Only then it gets essential! So, for example delivery accuracy... If it was 98%, that's ok, right? No! Two percent was wrong, what is the reason behind it? Of the 2% 70% is because this went like this or that. So we have this or that kind of a problem and we can fix it like this, and only this (discussion) is the thing that brings value. (Division president B)

> The question is about accepting the facts, discussing the actions and finally arriving at a commonly accepted agenda, which will get implemented. Because at the end of the day, the only thing that matters is that we start making the right things and really starting to take actions! Otherwise everything is left on the level of analysis. (Division president B)

> The meaning and value of the measure isn't the actual measurement, but instead that it leads to action and that we can develop our operations to the right direction [--] There's no point in measuring unless it leads to action. (Chief of corporate control and finance)

Accounting numbers had to be thoroughly discussed in order to crystallize the means for improving the measures. Revealing the business logic and its uncertainties as well as making an interpretation of the information became the means for mobilizing the organization for action, responding to the ultimate goal of the discussions, as explained by the company's chief of corporate control and finance:

> The discussion is important in order to comprehend and understand, what the factors really affecting the outcome are. For example the delivery accuracy, we go through, we discuss, what the components are, through which we can get to the 100%. So yes, it does demand the discussion in order to create the actions and to get to an agreement that okay these are the actions by which we will get there. (Chief of corporate control and finance)

Ultimately the achievement of a common ground for action was deemed top priority in the organization. The way of using accounting numbers followed the logic of action orientation. Instead of a purely rational, analytical and comprehensive investigation into the performance measures, the discussion was directed and justified by its ability to create the foundations for swift action. Not all accounting numbers were lifted up in the agenda for discussion. Rather, they were used selectively to arrive at an interpretation that would be sufficient to create concrete action plans and achieve joint action in the end. The following remark made by the division president C fruitfully illustrates the importance of arriving at a shared interpretation – instead on digging into an endless amount of data this served the goal of achieving action and a common

direction. Striving for plausibility instead of accuracy was considered vital, especially when fast changes had to be achieved.

> Awfully careful! Too careful in my opinion to make moves. You need to make fast changes. If there are problems, it is the information you can collect in one month, and then you just need to make decisions. You need to take some kind of direction, that that's the way to go. Then, if it turns out to be a wrong direction, then we need to check in a few months, and change direction. But what's important is that the whole organization goes to the same direction. (Division president C)

The CFO of the company also emphasized the role of the accounting in building motivation for the organization – motivation to commit themselves to the common agenda:

> Management accounting is primarily the language with which we can get the whole company behind collective goals. (CFO)

Even though the use of interactive controls seemed to have a positive image in the case company, it did place certain challenges from the controller's point of view. Negotiating meaning and linking operative knowledge to the numbers placed not only demands on the business understanding of the controller. The communicational skills of the controller were also emphasized. Instead of using measures in a provocative way, emphasis was placed on "real challenging". This meant that the controller had to deploy accounting numbers to truly challenge the organization, but in a positive and motivating spirit. As one division controller stated, this "real challenging" would be welcomed by the business side as well as people are, at the end of the day, on the same agenda.

> In a "normal" management team, people do not really agree on everything... The end result is that people conform and a decision is made. But you need to be able to test if the decision is right there, and not with being a holdout throwing deliberately a spanner in the works, and being a smartass making up why this and that will not work. No, but instead *real challenging* is needed... (Division controller A)

> Only barking against everyone and everything, nobody has the energy to keep up with that in the long run. [--] But if you really put yourself in it and say that "hey, if we were to do this and that, we would be able to get these kinds of results, and if there's some sense into this then yeah, you should bring it up. And if you think of the angles, you need to have different angles in the table, the business angle, what is happening on the market, the production's angle how to manufacture things, accounting's angle, how to calculate things, and there's a certain freshness in it, when they consider each other's angles so it is possible to lift up the kind of issues, that people who do them in their everyday work don't necessarily see. And every businessman likes that you lift up

> issues on the table, because everybody wants to do better. They all want to sell more, they all want to calculate more precisely… (Division controller A)

However, even though interactive controls were not seen as problematic in terms of increased resistance from the rest of the organization, it became evident that the interactive use of control systems and accounting numbers does require a strong role of the controller. In order to lift things up into the management agenda, to initiate discussion, and to act as a meaning creator and mobilizer, the controller needed to be vested with a strong identity. The interactive use of performance measures did, inevitably cause friction between different actors, from time to time. Therefore, the ability to face and live with conflicts seems to be needed in the controller function as the division controller A explained:

> Do people get upset? Oh yeah, you bet! This is actually a good question… People do get agitated. And if the controller, if he goes along with it and starts to think about what other people think, then he cannot really do his job. He just can't, because then the people can totally control what they want to reveal (to the controller), or if they even want to say anything in the first place. (Division controller A)

The business controller in the same division continued and emphasized the need to be confident of his or her analysis of the situation. Otherwise the discussion could risk to be misled into the wrong alleys by the business side. By mastering the accounting data and the KPI:s that otherwise would not be lifted to discussion, the controller could achieve a strong position and strong confidence to the numbers. This put the business understanding and operational knowledge of the controller to a test. A strong position and remarkable confidence in the numbers was therefore needed in order to be able to accomplish true interactive control, without being blindsided by the operational organization.

> Being a controller, it is sometimes really hard to stay confident about yourself and rely on your analysis. There's been a few times when I have for instance analyzed something and been absolutely sure that yes this is the thing. And then when I have discussed the issue with the person in question and he starts to explain it in an extremely different way... and I have gone and believed his side of the story, and then the whole pack has been totally mixed up! So you got to be confident and not go along with the other person and that is the most difficult thing. When you are not 100% sure and the other person should know the issue better than you – and when he starts to mislead you and you go along – then that's really bad. Controller should in spite of all be objective and neutral which sometimes by the way is really difficult [--] it is really difficult to do one's job if you don't know the business and know how the markets are going, and then somebody might try to mislead you. But businessmen are businessmen, and as such I do understand them. They have their own agenda. But controller, he

> should be able to see beyond it and measure the real ”heartbeat” of the business. (Business controller A)

Mastering the accounting numbers – and being able to influence which numbers would get prominence over others in the management meetings – also placed demands for a strong identity from the controller. Even though the controller's role as being a deliberate provocateur was questioned, the courage and willingness to take one's own independent and bold role was emphasised.

> The role should be objective and reliable. And in my opinion he should be the right person to initiate discussion. I can imagine that if you talk to our CEO, he will say that preferably the controller should be the one punching the fist into the table and kind of being the elephant in a china store... But yes, I guess that is needed as well. The courage is needed. (Division president B)

> It is the kind of thing that you just need to take your own role. Nobody does anything for you in the business world, there's no red carpet that you could walk on. It is a flock of wolfs, they will eat you alive. Although, i can say that in our company the culture is great. But nevertheless, nothing comes as given, everybody must take their own place. (Division controller A)

4.4 Diagnostic controls in the management process

Examining closer the use of control systems in this case setting, it became clear that even though the interactive use of controls did have a strong role in the management process there were parts in the reporting system which were not addressed in an interactive sense. A number of formal reports were drafted and put forward to the management on a monthly basis. However, these reports were usually left unaddressed. Their role in management process was marginal or nearly non-existent. From the controller's point of view this was seen largely un-motivating as it consumed considerable amounts of the controller's time and resources without bringing any significant benefits and without really affecting organizational behaviour.

> And I do, even at the moment, make a huge amounts of reports that are not actively used. And that's something I really find frustrating and upsetting! I have been asked to draft all kinds of reports, for instance I make this one report that is 9 megas big on a monthly basis. And it has a lot of excellent material for any kind of analysis, and then I get asked by email that can you give me this and this information? So I'm like well... it is in the report! And then they ask if I can give that and that. Well it is still in the report! So they do get the information, but because it is ”dead” information they do not

> use it for anything. At the end of the day they cannot do any kind of analysis with it. (Business controller A)

Diagnostic controls, at their best, remained a way of producing a net of measures used to identify the key issues that need to be lifted into the organizational discussion. Controllers used these measures to probe deeper into the organizational reality, and to achieve a visibility into operational issues, which they then could use when engaging in interactive control.

> The whole set of measures, the numbers hang together and support each other. For instance if our delivery accuracy measure has collapsed, then we start to see that okay the number of our deliveries has gone up a lot and the capacity has not been able to keep up, or that our illness rate has exploded up to the roof or overtime hours have risen. Or it could be an opposite reason, e.g. that we've had to lay off staff and motivation has decreased. So the KPI:s, even though we do not follow them per se e.g in a way that how many tons have we delivered from this unit, but when we interpret the other measures then we might use them to seek an understanding of the big picture. So if we need to get to the bottom of something the other measures can open the field in a way. (Business controller A)

However, as diagnostic controls were unable to *per se* impact behaviour and prompt action, their role in managing performance and strategic implementation seemed rather limited. They seemed to remain detached and distanced from the organizational reality and day-to-day context. They were not visible parts of control systems to organizational members outside accounting function. They were not liked with the local concerns and urgencies that surrounded the organizational members in their everyday reality.

Diagnostic controls, in producing performance measurement data, to be used as a management by exception control, was not able to achieve the motivation, urgency and pressure needed for it to have an effect in terms of management control on the basis of this empirical material. It seems that only when numbers get discussed and coupled with the everyday reality of organizational members in the interactive discussions, are they able to influence behaviour and achieve organizational action. As the business controller explained in the following quote, the personal presence and ability for face-to-face communication and argumentation around the measures was crucial:

> Oh yes! Definitely, if they would just be recorded to some place, and available only if somebody decides to go there and look for them... No, I mean they do need to be explicitly followed! [--] So in my opinion it does require that there is a certain forum that goes through the numbers, and that people are present. People who have the power to decide on the issues and responsibility for the issues, and people who then implement the actions – so they both need to be present in the meeting when the numbers are discussed. Okay, the implementation party can be different from the person. But the person who is kind of responsible for the action to be achieved needs to be there. (Business controller A)

Similarly, the president of one of the divisions emphasized the value of the organizational discussion in directing people's attention to the issues that were important. In order to affect behaviour, the measures needed to be lifted into the organization's awareness by the interactive discussion, questioning and argumentation. Merely diagnostic control of performance measures was not considered sufficient. It lacked the needed prominence and urgency for really mobilizing organizational actors.

> It is no hocus-pocus trick, but it is the only trick, it is the only way... It is still true that what gets measured gets done, what gets discussed gets done. (--) People get aware and alert of issues that are constantly on the table. (Division president B)

Achieving organizational action meant that the controller could not stay as a distanced monitor – using controls merely as management by exception tools. The controller had to be prominent and active, crafting concrete initiatives towards the operative organization, as explained by one of the division controllers.

> In order to achieve actions, you need to descend, you need to be ready to have the discussion and you need to communicate. You cannot get actions by shouting from your distant chamber. (Division controller A)

Especially as the company was facing tougher times due to the economic crisis, keeping a constant eye on the measures provided also a way of keeping track of the "heartbeat of the business". Instead of being a historian monitoring the achievement of targets, the controllers had their perspectives especially set on the future. As the following quote reveals, the focus was on staying alert to changes and on creating new action plans:

> These kinds of weekly information and even daily information and the kind of continuous tracking and kind of being on the pulse to see the direction to which it is

> evolving... We do report the actual numbers from last month but, right now, I don't give a shit, because I do know the numbers by the ballpark. But now i'm more interested in how the business is going in this month. I'm trying to keep up with the pulse of the business. So yes, it is different. The controller's role is totally different in this situation, and the controller's power can be bigger if you want to see it that way. (Division controller B)

The chief of corporate control and finance saw the role of diagnostic controls in the same manner, stressing their nature as systems providing only backward-looking information:

> Yes, controlling is easier... I mean at least the systems starts ringing bells if nothing else does, even though it is like looking at the rear mirror, if you try to control by the system. (Chief of corporate control and finance)

In order for the accounting numbers to be used in a future-oriented way, affecting organizational behaviour, the interactive use of performance measures was in a significant role. The meaning created by interactive discussions around the performance measures became critical in order to achieve organized and co-ordinated action. Numbers without the face-to-face interaction that linked them to operational issues and revealed the factors behind them remained insufficient for creating the foundations or action. The meaning that became negotiated around the numbers was in a crucial role. And this meaning could not be created by only producing figures on a paper format, as explained by one business controller:

> Well, people can't and don't really, if you don't have the communication, then nobody would know who is responsible and what is going to happen, and how should I take it. So yes, it does require that it is discussed. It's the same thing when we have this monthly report, which I do draft also in July when everybody's on their holidays. I send it by email, then nobody replies anything. They probably don't even look it through, and in the next month they are like " okay let's re-run through the numbers from July, and could somebody go through them. That's just the way it is. (Business controller A)

We may not go as far as labelling diagnostic controls as producing only "dead" information. But, the use of diagnostic controls in affecting behaviour was strongly questioned by the controller. In creating a solid base for organizational action, the accounting numbers had to be visible in face-to-face communication. The factors behind them had to be discussed – to be interpreted in a way that leads to mobilizing the organization for action. Diagnostic reports were seen as having a very limited

potential in influencing the behaviour of the organization. “Dead” information would remain distanced and impersonal.

> No, I don’t believe that they do, affect behaviour that is. My opinion is that data produced on paper is dead information – in the sense that if you don’t go through it and discuss them and even discuss them in a way that you analyze the factors behind the numbers – then the numbers are for the first, interpreted wrongly, they don’t lead to any actions. Or they lead to the wrong actions. It is rare that the kind of dead information produces anything on an action level [--] it is very hard to imagine that the sort of paper report would work. (Business controller A)

As the business controller stated in the quote above, the idea of diagnostic controls working as an “autopilot system”, securing the implementation of intended strategy, was questioned in the studied context. Without the personal communication, and professional engagement around the measures, no useful interpretation to guide organizational action could get created. Numbers produced in paper reports, designed only to monitor performance, lack the power to construct shared meaning. In the end, they are not sufficiently powerful to mobilize the organization for action. At worst, they risk producing a harmful interpretation of the numbers, which would lead the organization to the wrong direction.

The president of one of the divisions also stressed the nature of diagnostic controls as too remote and passive. The notion of managing performance by setting targets and merely monitoring their achievement could perhaps be attained in an “ideal world”, but in the “real world”, they were largely regarded as insufficient.

> This leading by measures kind of thinking, like ideally they would work in a way that i could sit in a villa somewhere reflecting on future strategies and not doing anything operative... I mean I have told these guys that the point is to make yourself useless, but unfortunately it doesn’t really work, the days are full of it. (Division president C)

The head of division B shared this view. He stressed the inability of diagnostic controls to work especially in the current rather challenging market situation the company was facing. In this situation, the controller function, and general management alike, would need to be personally involved and particularly interested in and engaged with the accounting numbers. The organization could not afford leaving

the measures only to the level of distanced diagnostic controls – not if effective management control was desired:

> Now that we are living in a period where there's no visibility, then that means that you have to be interested in every single deal, in every single cost item [--] So you cannot give a target for one year and just follow whether or not it get's achieved. You just don't have that kind of luxury. (Division president B)

The distanced nature of diagnostic controls and reports can also be seen in the following account, told by one of the business controllers.

> I deliver it (the report) to them and assume that of course they will look through it and examine it the same way that I do. So different unities, different dimensions, I calculate percentages, to see that okay this is how it looks like. And every month, for instance last month, when I ask them if they have gone through it they tell me frankly that "No, we haven't even received it". And I say that yes. First you have received it. Second, nice to hear that you have not gone through the report. At least they are honest. (Business controller A)

Producing formal reports to management's needs also increased the controller's workload. And this was seen as highly un-motivating as in reality the report was often neglected in the real management process. If the controller was not there in the local micro-context, to read the numbers out loud and lead discussion around them, they risked to be left lying on desks, with no real and significant link to organizational reality. Consequently, their implications to achieving action would be marginal or non-existent. This view was put forth by the chief of corporate control and finance.

> You can forget about the measures if you don't use them in management. I have said about finance and management accounting, that the reports the management doesn't use we should stop making them. If they don't use it then why the hell do we produce these numbers! The reports that have no role in decision-making, you can just write a red cross on top of them. Sometimes controllers imagine that they are important but then when you deliver to the manager's desk, he doesn't even read them. (Chief of corporate control and finance B)

The creation and shared construction of meaning around numbers seems even more important in today's corporations dominated by IT systems and booming information overload. Formal reports can be drafted from various angles, and for a great variety of purposes. Numerous factors can be tracked and reported. However, as one of the

business controllers stated, producing a multitude of reports doesn't lead to better control, as they often suffer from inflation.

> When you produce things on a daily basis, then that suffers inflation in a way. When people get mails every day, then they might not even open them every day, because they know that they will receive it next week again, and think that "maybe i'll be interested then". So we kind of waste our time and energy on something, which doesn't directly have an effect on anything, which isn't a tool for decision-making. (Business controller A)

Hence, it seemed that in order to achieve better control in terms of affecting behaviour and prompting action, and instead of producing more formal information, the key lay in the way these reports and accounting numbers became interpreted and shared in the organization. The formal reports left for merely diagnostic use did not achieve the urgency needed for them to prompt sufficient action in the case company. In fact, it seemed that in the endless "jungle" of performance numbers and measures, the importance of sensemaking and joint interpretation becomes the critical issue. The measures which become lifted up through interactive discussions are the ones that become meaningful to the organization. This social elaboration of the data turns it to a format that initiates action. Thus, forming the necessary base for action, it seems that the depth and personal commitment outweigh the volume of the accounting numbers, as suggested by one of the business controllers:

> I mean really, *really,* if I got to decide what numbers get delivered forward, there would be precisely five sets of numbers instead of 25. So the basic numbers and then we could concentrate on the analysis. (Business controller A)

5 Discussion

The purpose of the previous chapter was to describe the use of management accounting controls and the business controller's role against the empirical reality of the case company – in order to make meaningful interpretations from the gathered evidence. In this chapter the empirical findings are discussed and theorized in the light of previous studies and theoretical pronouncements on interactive and diagnostic controls and the controller's role.

5.1 From interactive controls to interactive transparency

The potential of using performance measurement systems as tools for interactive controls has been acknowledged in previous research (see e.g. Tuomela 2005 for balanced scorecard, and Vaivio, 2004 for the interactive use of performance measurement systems). When examined as a part of the management process at the case company, the interactive use of the measures became evident. The accounting numbers were deeply rooted in the company's management process, and were seen to have a constitutive role (Hopwood 1983, 1986) in the company. The performance measures comprised of various financial and non-financial measures that were discussed in the monthly management meetings by the lead of the controller. In these meetings the controller took an interactive role, becoming responsible for seeking explanations behind the numbers and actively searching for new action plans. These findings seem to be in line with Vaivio's (2004) suggestions of the controller's role evolving towards a more interactive direction.

The monthly management meetings in which the performance data was discussed became the needed forum, the social space, for interactive control. Using performance measures as interactive controls at all levels of the organization, the measures and the controller as leading the discussion, contributed to adding structure to interactive control. Systemized ways of handling and tackling accounting numbers provided the means to challenge the whole organization. Thus, the accounting numbers became much more than distanced measures – they became the way to increase information exchange between different levels of organization. In addition to the local

management meetings, accounting numbers were addressed in inter-hierarchical meetings, where local controllers and business managers presented and explained their numbers to their superiors. This formed a way of enhancing the communication between different hierarchical levels. These findings thus support the argument made by Kober et al. (2007), who found interactive use leading to greater information sharing in the form of increasing inter-hierarchical discussions and debate.

The empirical evidence also supports the previously reported nature of interactive controls as being able to promote organizational learning and the discovery of local knowledge (see e.g. Vaivio 1999a, 1999b, 2004). In the case company the systematized and hierarchic interactive discussions created the base for lifting up important pieces of local information and locally generated cues upwards from lower levels of the organization, contributing to enhanced organizational learning. In the context of this study, this operative knowledge that became lifted up was imperative not only as a means of increasing grass-root learning. It also served the purpose of interpreting the otherwise ambiguous accounting data, which threatened to be overwhelming unless coupled with this operative, grass-root level knowledge.

However, despite similarities in relation to previously reported studies of interactive controls as contributing to organizational learning and the discovery of local information, the empirical evidence suggested that the use of interactive controls should be cast yet into another theoretical mould.

In contemporary organizations – dominated by advanced data and IT systems – the possibilities for collecting accounting information are ever increasing. This was clearly evident in the empirical material collected from the case company as several comments were made about the *data flood and information overload*. The controller's were responsible for collecting and reporting huge volumes of accounting data on a monthly basis in order to track a wide net of measures. The technical ease of creating these reports had led to an ever increasing number of formal reports that controller's were expected to put forward.

Furthermore, in addition to the capability of collecting and disseminating increasing volumes of accounting data, also the *transparency* in the accounting data emerged as

a key factor influencing the use of performance measures as interactive control. Accounting numbers were reported through data systems, which were accessible from different corners and different levels of the organization. Accounting numbers and performance measurement data did no longer rest only in the exclusive hands of the controller function. Instead, this numerical data had become directly accessible to other organizational members as well. In the organization, strongly characterised by a management philosophy of leading by numbers, the accounting numbers had spread far beyond the "traditional" barriers and the preserve of the accounting and finance function – to become organizational reality also for other functions. Performance figures were, in a sense, transparent to organizational members and could be seen as forming a net of information, accessible from different hierarchical as well as functional levels, and from different pockets of operational expertise.

This transparency and the accompanying increased accessibility related to accounting data had substantial implications to the workings of interactive controls. Previous studies on the use of performance measures (see Vaivio, 2004; Tuomela 2005) have depicted how the controller, having an exclusive right to the accounting information, has used the interactive measures towards the operative organization. These studies have emphasized the ability of the interactive performance measures in making the actions of individual organizational agents visible to other members of the organization.

The findings of this study, however, stand in contrast with the notion of interactive controls, as we traditionally have seen them. It seems that in the modern, contemporary organizations, where abundant and flexible IT and data systems dominate, traditional interactive control is being replaced by a new form of control – *interactive transparency* – where the direct availability and almost complete transparency of the accounting data places interactive control into a different local setting. Performance measures are no longer only in the hands of the controller, who deploys them towards the operative organization and exercises control on an individualized level. Instead, the controller could be seen as operating in the middle of a wide, collectively shared net of measures and being the expert of the accounting numbers to which basically the whole organization has access to. Instead of using measures provocatively in order to prompt reactions in the individual actors (Vaivio

2004), the role of the controller in this empirical setting, was more linked to managing a transparent stock of accounting information and making this transparent stock meaningful to organizational members.

Within this *interactive transparency* – as a central concept that organizes our theorizing here – the importance of interactive discussions around the performance data cannot be underestimated. These collective incidents served as the means through which the interpretation was negotiated around the numbers. As the collected data grew in volume and complexity, the management of this data became imperative in order to turn it into "actionable knowledge" (see Weick 1995). In an endless net of possible measures and overabundance of data, the interactive controls were seen as meaningful as they possessed the potential of creating necessary meaning around the critical numbers. The monthly management meetings served as the primary forum where the numbers became "talked into existence" (Weick et al. 2005) by the interactive exchanges between organizational actors. In addition, numbers were lifted up in everyday communication as well. The day-to-day prominence of the numbers was a way of signalling their importance, lifting them up from the otherwise grey masses of accounting data. The day-to-day use of performance numbers succeeded in creating a sense of urgency and relevance. It brought the measures closer to organizational members and their practical concerns.

In the context of interactive transparency, interactive controls were seen as powerful controls – having the potential to affect organizational behaviour. The powerful nature of interactive controls has been acknowledged in previous studies as well, and their ability in enhancing the quality of accounting information has been recognized (see e.g. Byrne & Pierce 2007). However, previous studies have underlined the rather controversial nature of interactive use of controls, portraying them as sometimes leading to negative reactions in the subjects of control (see e.g. Tuomela 2005; Vaivio 1999a, 1999b, 2004). Using the interactive controls in this traditional sense of poking towards the operations on an individual basis, the interactive controls have been shown to lead to increased visibility, which makes individual actions exposed to a wider audience in the organization.

This study stands in contrast with these previously reported findings. It stresses the nature of interactive controls as motivating, thus supporting Simons' (1995) original ideas of interactive controls as a "positive" form of control. It seems – in the context of the interactive transparency suggested by this study – that the interactive use of controls was not perceived as leading to a threatening or resistance-laden visibility. Organizational members became used to the revealing nature of accounting numbers, and to the fact that their local actions would be visible through the wide net of measures the organization kept track of. Accounting numbers were able to probe deep into the local details of the organization, and the transparent visibility they opened depressed the need to cover one's failures or mistakes. On the other hand, this particular interactive use did differ from the previously presented way of using performance measures as deliberate friction-makers, shaking a dusty organization (see Vaivio 2004).

Tuomela (2005) even suggested that the use of performance measures interactively evoked more negative reactions than diagnostic use. The findings of this study suggest the opposite. In an organization surrounded by large volumes of financial information the interactive discussions actually became something, which was expected from the controller. It became the means of breathing life into the numbers, motivating the operative organization to focus action on key performance measures. The personal involvement of the controller in the interactive use of measures gave accounting numbers necessary meaning and purpose in the minds of organizational members. Consequently, it seems that instead of interactive controls prompting negative reactions or resistance, they were perceived as being positive and motivating.

5.2 The controller's role in the context of interactive transparency

The new context of *interactive transparency,* identified in this study, had naturally implications to the role of the controller. It placed the controller to a novel situation, characterized by the dominance of accounting data. It also called for a new role in using the voluminous accounting information. In the contemporary organization surrounded by endless volumes of accounting data, the abilities and professional skills

of the controller in interpreting and creating meaning around the numbers became critical.

In line with the previous findings, the controller's role had evolved from the narrow bean counter to a more business-oriented change agent, more prone to approaching operations (e.g. Granlund & Lukka 1998; Vaivio & Kokko 2006; Järvenpää 2001; Byrne & Pierce 2007). This study depicted how controllers, paired up with business unit managers, took an active role in the management of local business units. The empirical findings also highlight controllers as active agents with a close personal presence in the field, lending support to Vaivio's (2004) view of the controller working close to operational detail and having substantial visibility towards the problems that stemmed from operational detail. In the name of interactive transparency, however, the mere characterization of the controller's role as evolving towards a more business-oriented and active agent does not suffice. Based on this study, a new perspective has to be adopted in order to fully grasp the controllers' role within the interactive transparency.

In this interpretation of the way controller's worked to give the numbers meaning and purpose, the ideas of Brunsson's (1982) action rationality seem theoretically useful. The empirical material portrayed the organization as having its priority and overarching objective in achieving prompt action and a common direction for the organization. The discussion around the interactive performance measures did not serve the purpose of discussing the results *per se*. Far more important was, what the implications for discussing the measures were. The end goal was to discuss the data in a way that would encourage and enable the organization to articulate new action plans – and get the organization to carry them out in practice. In Brunsson's (1982) terms the main challenge was, thus, in achieving organized action.

In order to build the social, motivational and cognitive foundations for actions, the interactive discussions played a crucial role. They became the means of turning the unorganized and ambiguous flux of information to "actionable knowledge" (Weick 1995). Based on the empirical material collected, it seems that instead of only producing a variety of different reports and pulling endless amounts of information from the formal control systems, the key for making sense of the performance

measures lay in the discussion and verbal exchange around the accounting numbers. In the case company, the monthly management meetings had a central role in providing this setting where data could be debated and argued. In line with Weick's (1995) ideas of sensemaking in organizations, personal interaction and negotiation of individual frames was seen as crucial for the mutual creation of meaning.

In this process of sensemaking and turning information into "actionable knowledge", the controller's role became significant. The empirical findings revealed how controllers, placed in close contact with the operative organization, became discussion leaders in cross-functional spaces, negotiating around the accounting numbers. In discussing and elaborating on the performance measures, emphasis was placed on the articulation of operational knowledge. This knowledge contributed to making the otherwise distanced numbers becoming linked to the everyday organizational reality of the involved actors.

The empirical findings thus strongly emphasize the social and communicational aspects of the controller's work in driving the interactive discussion around the performance measures. Building links between the numbers and operational knowledge, this study captures the controller working in an interpreter and a bridge-builder role, using Partanen's (2001) metaphors. It was emphasised that the controllers still needed to translate and negotiate the meaning of the accounting numbers to the rest of the organization. This also supports Granlund and Lukka's (1998) view of the controller's task of bringing the financial information to managers' awareness, and of making sure that the financial information is well-received and truly accepted by them. By reading the numbers "out loud" to the organization, the controllers gave the recipients the possibility to explain, question and discuss them using their own words. The controller as an interpreter and bridge builder was working together, in close co-operation with the organization, becoming responsible for lifting up key operative knowledge and building meaningful links to the accounting numbers. The discovery and articulation of the operational knowledge had a seemingly central role in making the accounting numbers meaningful to the organization.

As stated earlier, in an organization concerned with achieving action, the interactive controls had the central role of building the foundations for this action. It seems that when contemporary organizations face the challenges of handling very large volumes of formal numeric data, the information overload risks overwhelming and paralyzing the organization. Also, measures may become "inflated" – loosing their value and significance. In a similar vein it has been argued by Brunsson (1982) that, when striving for action, people tend to simplify rather than elaborate. Consequently, the IT dominated accounting systems and the endless numbers available for discussion served in Weick et al.'s (2005) words as an instigation for sensemaking in the case company. In making sense of the numbers the emphasis was placed – instead of a rational and accurate investigation into the endless net of measures – on achieving a plausible but shared interpretation, which would allow for the organization to take rapid action.

In the interactive transparency dominated by the wide net of accounting numbers, the controller's role in focusing and in lifting up issues from the accounting data by *selectively* "raising flags", can be understood in terms of creating meaning around the numbers – relating thus to the notion of sensemaking in organizations (see Weick, 1995). In the process of creating sense and meaning around the accounting numbers, controllers adopted the vital task of lifting issues up into the management agenda. By doing this they were perceived as having substantial organizational power, in line with the suggestions of Partanen (2001). By "raising flags" the controller was able to direct the attention of the organization to certain focused parts in the performance data, assisting the organization to arrive at an interpretation of the situation. "Raising flags" could in other words be coupled with extracting cues (Weick et al. 2005) from the flux of ambiguous data. The controllers thus had the important role in filtering, sometimes biasing, framing and providing structure to the abundant data. As some parts of the data became lifted up, and others depressed, pushed to the margins or the backstage, the world became simplified, affording sound, organizational action.

Since the purpose for engaging in the discussion around performance measures was not the discussion *per se*, but rather the goal of achieving action, the controller's role could therefore also be understood as being one of a mobilizer, according to Brunsson's (1982) theorizing. Similarly, as in the irrational decision-making

situations described by Brunsson (1982) in the context of management control situations in the case company, the discussion around performance measures was not all rational: Instead of handling all possible numbers, attention was directed selectively – even violently – to some of them. It seems that the mere discussion on some measures served as a sign for the pursuit for action. Not all information would be analyzed with detail, as it would risk paralyzing the organization. And not all angles of the performance data would be investigated. Rather, the controllers emphasized the importance of having a certain hunch or an intuition they would follow. In the name of providing a common ground that would serve as a foundation to which members of the organization could commit themselves to, the controller's pushed for some interpretation of the numbers. In fact, the importance of arriving at an interpretation – instead of engaging in an endless search of the interpretation – was emphasised e.g. by the CEO of division 3, who stressed the importance of fast moves. The organization, under turbulent conditions, could not afford to dwell endlessly on the performance data. Thus, creating a meaning and a plausible interpretation of the numbers, to which all organizational members would be able to commit themselves, was the guiding code in the use of interactive controls, which aimed at achieving action.

The fact that interactive controls were able to create meaning and shared interpretation partly explains why in the case company the use of interactive controls was seen as a positive form of control. Interactive use of controls, giving the accounting numbers meaning, was considered far more motivating than distanced number data with no clear links to the organizational members' everyday activities – contrasting with the previous findings of interactive controls as evoking resistance (e.g. Vaivio 2004; Tuomela 2005). Consequently, controllers could be understood as being in the role of motivators. They made the accounting data meaningful to other organizational members.

Despite the seemingly positive nature of interactive controls, the controller's interactive role in sometimes forcefully creating meaning and acting as a mobilizer was not without challenges. In approaching the operational level, and assuming an active role in the management process of their local business unit controllers had to balance the more neutral and the objective, and on the other hand, the more powerful

and the more challenging interactive role. Having the power and discretion to lift up certain parts of the accounting information, directing the organizations attention to that specific area of performance, the controllers held a rather powerful organizational position. Based on the findings of this study, the controllers themselves were keen towards the interactive role, contrary to previous speculations on the willingness of the controllers to embark on the more contradictory journey of interactive controls (see e.g. Vaivio 2004). However, as this study was mainly conducted on the divisional and company level, we acknowledged that this might be the case in lower levels of the organization, and in the case of more junior and inexperienced controllers.

5.3 The role of diagnostic controls

Based on these empirical findings, it seems that interactive controls are powerful controls that have a strong constitutive role in driving organizational action. Instead of the previously reported controversial nature of interactive controls opening visibility and triggering resistance, the interactive use of controls was seen as a motivating force, supporting the view of interactive controls as a "positive" form of control (see Simons, 1995). Interactive discussions and the controller's engagement in operational issues were well received by other organizational members, and was partly even expected.

By contrast, based on the findings of this study, the notion of diagnostic controls as tools for management control seems somewhat problematic. Diagnostic controls were perceived as being frustrating for both the controller and the rest of the organization. Instead of the previously criticized time-consuming nature of interactive controls, this study showed how diagnostic controls actually required substantial amounts of time and other resources from the controllers, in terms of drafting a number of formal reports. As these reports were often left unaddressed by management, they clearly decreased the controllers' motivation. They consumed resources that could be otherwise directed to deploying interactive controls instead.

The data dominance and transparency, evident in the case company, had implications not only for the workings of interactive controls, but also to the use of diagnostic

controls. The number of measures and KPI:s tracked by the accounting systems contributed to turning diagnostic controls to obsolete parts of the control system. Diagnostic controls were seen as un-motivating. They lacked real meaning in the organization. Only face-to-face communication, argumentation and personal involvement in the accounting measures had the power of making numbers meaningful – the role of diagnostic controls was thus left to producing only "dead" information. This "dead" accounting could not be unable to be coupled with organizational reality.

In the original levers of control-framework, Simons (1995) depicts diagnostic controls as effective tools for strategy implementation. He emphasizes their ability of providing the means for managing by exception and for saving substantial amounts of management attention. However, based on this study, it is precisely the attention that gives the control system the kind of meaning it needs in order to prompt actions. Standing in sharp contrast to Simons' (1995) initial suggestions, this study questions the abilities of diagnostic controls in affecting behaviour in contemporary contexts. Producing distanced accounting numbers, and adding to the exhausting amount of data that characterizes contemporary organizations, diagnostic controls may lack elements that would make accounting numbers personal and meaningful enough, turning them into lived organizational reality. As depicted in the empirical quotes, distant diagnostic controls clearly lacked the power to mobilize the organization, not affecting the behaviour of organizational members. Instead, they were used as a system providing a base for the interactive use of controls. With the wide coverage to all corners of the business, the numbers gave the controllers deep visibility, allowing them to selectively pull some parts to further investigation and interactive discussions. But it seems that only the measures given prominence in the face-to-face discussions come to life.

Based on the interpretation of the empirical material gathered from the case company, the formerly well-established division between interactive and diagnostic controls so widely used in academic research (see e.g. Tuomela 2005; Granlund & Taipaleenmäki 2005; Widener 2007; Henri 2006; Abernethy & Powell 1999; Vaivio 2004) may require revision. Modern corporations are well armed with advanced IT systems. They are capable of producing large quantities of data. Furthermore, accounting

knowledge and quantitative information has clearly surpassed the traditional boundaries of the accounting and finance function. It has become more public information available to a wider organizational audience as it can now be accessed from different corners of the organization In this net of measures and data, it appears that interactive controls are those, which actually are capable of influencing the direction of the organization. Interactive controls achieve the prominence, the pressure and the meaning, which affect behaviour and mobilize the organization. On the other hand, it seems that the role of diagnostic controls becomes less important as a tool for management control. At worst, this distanced form of control is capable of producing only “dead” information, adding to already exhausting amounts of data.

6 Conclusions

After presenting a documented and detailed case description on the use of performance measures in one case company, and after discussing the results of this empirical journey with regard to the relevant body of academic literature, it is the purpose of this final chapter to further elaborate on the conclusions that can be drawn from this investigation. We will first discuss the limitations of the study. Then we present the key findings in light of the research questions. In the last part of the conclusions, some avenues for further research will be introduced.

6.1 Limitations and summary of the results

Going back to the purpose of the study presented in the introductory chapter, the aim was to provide a critical re-examination of interactive and diagnostic controls. In doing so, we have entered the field with a critical research agenda, with the purpose of re-examining these well-established theoretical concepts. The empirical part of the study consisted of 10 interviews in one case company. The results were analyzed and interpreted using previous literature as a prism that guided the interpretation.

The theoretical conclusions that can be drawn from these empirical findings are naturally subject to limitations concerning the method of data collection in only one specific empirical context. This empirical excursion provides only one description of a single organizational reality, in a specific time frame. Furthermore, as the interviewees represent mostly higher level of management (division and corporate level), we only have a limited view towards lower levels of the organization. Furthermore, the limitations include having only a restricted access to interviewees. In addition, due to the researcher's position as an outsider the access to the daily reality in this organization was restricted into a few visits to the field. We would also like to warn against making any generalizations in a statistical sense. As in all case studies, the generalization of the results must be taken as a theoretical generalization (Lukka & Kasanen 1995), and approached with caution. In addition, we acknowledge that due to the critical orientation of the study, we may exaggerate in the interpretation of events. This study should therefore be seen as inviting further investigation into the

new form and role of interactive and diagnostic controls, rather than providing arguments on a definitive note.

With the aforementioned limitations in mind, we feel, however, that the empirical findings do allow for some theorizing concerning the concepts of interactive and diagnostic controls. The study at hand can be seen as broadening and enriching our theoretical understanding in two ways. First, it brings the widely used concepts of interactive and diagnostic controls under a new light, illustrating a new kind of interactive use of controls and questioning the role of diagnostic controls as viable management tools. Secondly, the study widens our understanding of the role of the controller in organizationally anchored situations of interactive management control, by showing how controllers assume the role of mobilizers and sensemakers.

The first research question stated in the beginning of this study related to the way interactive controls are realized in today's companies. The empirical findings of this study place the organizations of our time in a context characterized by transparency in accounting numbers and data overload. In contemporary organizations, equipped with deep probing accounting systems, the performance numbers become public information, exceeding the boundaries of the traditional finance and accounting function. Accounting knowledge has spread beyond the accounting and controlling function. Many actors have access to financial and non-financial quantitative information. No longer has the controller the exclusive right to look into "raw" performance data. It seems that the notion of interactive control as we traditionally know it doesn't fully fit the contemporary organizations characterised by these both extensive and intensive IT systems, and accounting numbers' transparency. In fact, the 'old' interactiveness seems to be embedded into a new kind of context. It is being and replaced by the concept of *interactive transparency,* we suggest.

The traditional interactiveness in which the controller had the exclusive right to process fundamental accounting information and used these monopolized measures in an interactive manner, poking towards the operations on an individual basis, seems to be somewhat outdated. Instead, the controller now operates in a new situation characterized by the public, easily accessible and transparent accounting numbers. Working in the centre of a net of publicly shared accounting information, the

controller – with the use of interactive measures – is negotiating and creating meaning around these widely available numbers. Therefore, interactive controls become the medium for creating meaning around numbers and for mobilizing the organization for swift action. As modern IT systems enable companies to collect large volumes of accounting data, the production of meaning around the numbers gets emphasized. This builds a good foundation for action.

Turning to the second research question on the role of diagnostic controls, this study suggests that as organizations move towards *interactive transparency* the role of diagnostic controls inevitably is prone to diminish. Instead of being effective tools for management by exception, the information produced is now seen as frustrating, as it remains distanced and uncoupled form the everyday reality. Producing at worst, only 'dead' information, they often add to the controllers' workload as well as to the already exhausting volume of accounting data overwhelming the organization. Therefore, this study is suggestive of a transition from the traditional interactive-diagnostic classification towards *interactive transparency*, in which diagnostic controls may gradually become obsolete.

Concerning the implications of the modern use of interactive controls on the controller's role, which was the third research question of this study, the key results stress the need of understanding the role of the controller from the point of view of achieving organizational action. Clearly, interactive transparency places new demands for the business controller. The controller's abilities in making sense of the accounting data and constructing meaning around the numbers rise in importance. He becomes responsible for selectively directing the organization's attention to some areas of performance and pushing the organization towards reaching a shared interpretation and meaning around the numbers. This serves the ultimate goal of achieving action.

Thus, pressing the findings in a nutshell, the study is contributing to our theoretical understanding in two ways. Challenging the previously dominant categorization into diagnostic and interactive controls, the study is suggesting a more contemporary view into the use of accounting controls within an interactive transparency, where diagnostic controls can finally become obsolete. Secondly, the study widens our

understanding of controller's role, coupling it with previously undeveloped ideas of the controller working as a mobilizer and as a meaning creator.

6.2 Avenues for further research

Evaluating the results of the study, we hope that they open new avenues for further research into the functioning of interactive and diagnostic controls. As this study was based on the findings in one case company, the area could benefit from subsequent research in other empirical contexts, in another point of time. The interviews in this study were concentrated on members of accounting and finance function, and the members interviewed outside the accounting function represented rather high level of management. We would, therefore welcome further studies conducted on lower levels of organization with a focus on members of the operative organization, so that a more comprehensive picture could be attained.

Clearly, the new kind of interactive transparency, identified in this study, deserves further attention as well. The previous monopoly of information that the controller had is now being replaced by a more publicly shared net of measures. As the access to accounting information has spread beyond the accounting function, also other organizational members can access the information from different angles. Creating an entirely new setting to the use of accounting controls, it brings us to raise further questions: How do organizational members use this access to accounting information? Does the possibility of gaining visibility into other members' performance lead to spying and using the information as a weapon in organizational politics? And how does this affect the role of the controller? How is s/he able to keep control and manage these potential situations of conflict between the different organizational actors? Does the role of the controller evolve to that of a gatekeeper or a guardian in this information net?

Also, the access to the data might also mean that the actors can assume some kind of preconception and interpretation of the data before it gets commonly interpreted in interactive meetings. How does the controller manage the interpretation of accounting numbers in these situations? Leading the discussion and digging into the background and factors behind the measures, might not be unproblematic. It demands a strong

identity of the controller, who on top of mastering the accounting data must have operational knowledge so that he can keep his nerve and not get thrown away by the arguments from the operational organization. Furthermore, does the transparency in accounting numbers lead to the operative organization to be able to prepare themselves "too well" against the enquiries and probing of the controller? Are the possibilities of using accounting numbers as effective control tools diminished when the "information upper hand" is lost? Being outside the scope of this study, these are all questions that would deserve further attention in management accounting research.

Also, the new role of the controller working as a mobilizer and a sensemaker might be potentially challenging. Requiring the controller to enter the complex net of operational issues and to engage in the operative management and discussion could have implications for the neutrality and objectivity that previously have been considered as the cornerstones of the controller's role. How are controllers able to maintain their objectivity and authority in management control situations, if the operative involvement becomes deeper? How are they able to balance the objectivity and subjectivity of the new role? Furthermore, in the role of meaning creator, the ability to selectively raise flags and point out areas in the performance data, gives the controller substantial organizational power. These power considerations open new avenues for further research into whether or not the controllers are willing to take the power on the table, and how this new powerful position of the controller is received by the rest of the organization.

In addition, the willingness of the controller to enter this new role of meaning creator and mobilizer, would merit attention. It is not self evident that controllers used to being the experts of financial data and working in a neutral role, are appreciative of the deeper engagement with operative organization, which might become politically infused. In this study the focus was on divisional and corporation level, in which the business controllers were experienced and well recognised in the organizational setting. Therefore, even if in the context of this study, the controllers were seemingly content with their role, in the case of lower level controllers or controllers with less experience, the willingness and the ability to adopt this kind of role should not be taken without some examination.

Furthermore, as this study was realized as a field study using interviews as the main source of data collection, the ideas developed in this study could benefit from further research deploying different research methods. For example, we would welcome additional interpretive field studies, where interviews could be complemented with different sources of data e.g. participant observing, allowing for data triangulation. Alternatively, instead of aiming at deeper understanding of this novel concept of *interactive transparency* in a specific context, the results of this study could be examined with a survey method, allowing the ideas and concepts developed in this study to be tested with a larger sample size.

References

Abernethy, M.A., & Brownell, P. (1999) The role of budgets in organizations facing strategic change: an exploratory study. *Accounting, Organizations and Society, 24,* 189-204.

Argyris, C. (1990) The dilemma of implementing controls: the case of managerial accounting. *Accounting, Organizations and Society, 15,* 503-511.

Argyris, C. (1991) Teaching smart people how to learn. *Harvard Business Review, 69,* 99-109.

Ahrens, T. (1997) Talking accounting: an ethnography of management knowledge in Brittish and German brewers. *Accounting, Organizations and Society, 22,* 617-636.

Ahrens, T. and Dent, J. (1998) Accounting and organizations: realizing the richness of field research. *Journal of Management Accounting Research, 10,* 2-39.

Ahrens, T. and Chapman, C. S. (2006) Doing qualitative field research in management accounting: Positioning data to contribute to theory. *Accounting, Organizations and Society, 31,* 819-841.

Annual Report (2008)
http://www.ruukki.com/www/publications.nsf/D68F48C428BE7B5FC225757800220B23/$file/Rautaruukki_Annualreport_2008_EN.pdf?OpenElement

Bisbe, J., Batista-Foguet, J-M. and Chenhall, R. (2007) Defining management accounting constructs: a methodological note on the risks of conceptual misspecification. *Accounting, Organizations and Society, 32,* 789-820.

Bisbe, J.,and Otley, D. (2004) The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society, 29,* 709–737.

Brunsson, N. (1982) The irrationality of action and action rationality: decisions, ideologies and organizational actions. *Journal of Management Studies, 19,* 29-44.

Burchell, S., Clubb, C., Hopwood, A., Hughes, J. and Nahapiet, J. (1980)The role of accounting in organization and society. *Accounting, Organizations and Society, 5,* 5-27.

Burns, J. and Balvindsdottir, G. (2005) An institutional perspective of accountants' new roles – The interplay of contradictions and praxis. *European Accounting Review, 14,* 725-757.

Byrne, S. and Pierce, B. (2007) Towards a more comprehensive understanding of the roles of management accountants. *European Accounting Review, 16,* 469-498.

Collier, P.M. (2005) Entrepreneurial control and the construction of a relevant accounting. *Management Accounting Research, 16*, 321-339.

Chenhall, R.H. (2003) Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society, 28,* 127-168.

Chenhall, R. and Langfield-Smith, K. (1998) Factors influencing the role of management accounting in the development of performance measures within organizational change programs. *Management Accounting Research, 9,* 361-386.

Cooper, D. J., Hayes, D. and Wolf, F. (1981) Accounting in organized anarchies: Understanding and designing accounting systems in ambiguous situations. *Accounting, Organizations and Society, 6,* 175-191.

Dent, J. F. (1991) Accounting and organizational cultures: A field study of the emergence of a new organizational reality. *Accounting, Organizations and Society, 16,* 705-732.

DiMaggio, P. J. and Powell, W. W. (1983) The iron cage revisited: Institutional

isomorphism and collective rationality in organizational fields. *American Sociological Review, 48,* 147-160.

Ezzamel M., Willmott H., and Worthington F. (2001) Power, control and resistance in "The factory that time forgot". *Journal of Management Studies, 38,* 1053-1079.

Granlud, M. and Taipaleenmäki, J. (2005) Management control and controllership in new economy firms – a life-cycle perspective. *Management Accounting Research, 16,* 21-57.

Granlund, M. and Lukka, K. (1997) From bean-counters to change agents: the Finnish management accounting culture in transition. *Finnish Journal of Business Economics, 3,* 203-255

Granlund, M. & Lukka, K. (1998) Towards increasing business orientation: Finnish management accountants in a changing cultural context. *Management accounting research, 9,* 185-211.

Ferreira, A. and Otley, D. (2005) The design and use of management control systems: an extended framework for analysis. *Working paper, SSRN.*

Gray, B. (1990) The enactment of management control systems: a critique of Simons. *Accounting, Organizations and Society, 15,* 145-148.

de Haas, M. and Kleingeld, A. (1999) Multilevel design of performance measurement systems: enhancing strategic dialogue throughout the organization. *Management Accounting Research, 10,* 233-261.

Henri, J. (2006) Management control systems and strategy: a resource based perspective. *Accounting, Organizations and Society, 31,* 529-558.

Hopwood, A. (1983) In trying to study accounting in the contexts in which it operates. *Accounting, Organizations and Society, 8,* 287-305.

Hopwood, A. (1986) Management accounting and organizational action: an introduction, in Bromwich, M. and Hopwood, A. (eds) *Research and current issues in management accounting,* U.K., Pitman, 9-30.

Järvenpää, M. (2001) Connecting the management accountants' changing roles, competencies and personalities into the wider managerial discussion – a longitudinal case evidence from modern business environment. *Finnish Journal of Business Economics, 4,* 431-458.

Järvenpää, M. (2007) Making business partners: a case study on how management accounting culture was changed. *European Accounting Review, 16,* 99-142.

Keating, P. J. (1995) A framework for classifying and evaluating the theoretical contributions of case research in management accounting. *Journal of Management Accounting Research, 7,* 66-86.

Kober, R., Ng, J. and Paul, B. J. (2007) The interrelationship between management control mechanisms and strategy. *Management Accounting Research, 18,* 425-452.

Kloot, L. (1997) Organizational learning and management control systems: responding to environmental change. *Management Accounting Research, 8,* 47-73.

Langfield-Smith, K. (1997). Management control systems and strategy: a critical review. *Accounting, Organizations and Society*, *22*, 207-232.

Lukka, K. and Kasanen, E. (1995) The problem of generalizability: anecdotes and evidence in accounting research. *Accounting, Auditing, and Accountability Journal, 8,* 71-90.

Marginson, D. E. W. (2002) Management control systems and their effects on strategy formation at middle-management levels: evidence from a U.K. organization. *Strategic Management Journal, 23,* 1019-1031.

McKinnon, J. (1988) Reliability and validity in field research: some strategies and tactics. *Accounting, Auditing and Accountability Journal, 1,* 34-54.

Minzberg, H. (1978) Patterns in strategy formation. *Management Science, 24,* 934-948.

Nixon, W. A. J. and Burns, J. (2005) Management control in the 21st century. *Management Accounting Research, 16,* 260-268.

Partanen, V. (2001) Muuttuva johdon laskentatoimi ja organisatorinen oppiminen: field-tutkimus laskentahenkilöstön roolin muutoksen ja uusien laskentainnovaatioiden käyttöönoton seurauksista. *Publications of the Turku School of Economics and Business Administration, Series A-6.*

Scapens, R. (1990) Researching management accounting practice: the role of case study methods. *British Accounting Review, 22,* 259-281

Simons, R. (1987) Accounting control systems and business strategy: an empirical analysis. *Accounting, Organizations and Society, 12,* 357-374.

Simons, R. (1990) The role of management control systems in creating competitive advantage: new perspectives. *Accounting, Organizations and Society, 15*, 127-143.

Simons, R. (1991) Strategic orientation and top management attention to control systems. *Strategic Management Journal, 12,* 49-62.

Simons, R. (1994) How new top managers use control systems as levers of strategic renewal. *Strategic Management Journal, 15,* 169-189.

Simons, R. (1995) *Levers of control: How managers use innovative control systems to drive strategic renewal*. Harward Business School Press, Boston.

Simons, R. (2000) *Performance measurement & control systems for implementing strategy: text & cases.* Upper Saddle River, NJ: Prentice Hall.

Tuomela, T-S. (2005) The interplay of different levers of control: A case study of introducing a new performance measurement system. *Management accounting research, 16,* 293-320.

Vaivio, J. (1999a) Exploring a 'non-financial' management accounting change. *Management accounting research*, *10,* 409-437.

Vaivio, J. (1999b) Examining "The Quantified Customer". *Accounting, Organizations and Society, 24,* 689-715.

Vaivio, J. (2004) Mobilizing local knowledge with ´provocative` non-financial measures. *European Accounting Review*, *13*, 39-71.

Vaivio, J. (2008) Qualitative management accounting research: rationale, pitfalls and potential. *Qualitative Research in Accounting & Management, 5,* 64-86.

Vaivio, J. and Kokko, T. (2006) Counting big: re-examining the concept of the bean counter controller. *The Finnish Journal of Business Economics*, *1,* 49-74.

Widener, S. K. (2007) An empirical analysis of the levers of control framework. *Accounting, Organizations and Society, 32,* 757-788.

Weick, K. E., Sutcliffe, K.M. and Obstfeld, D., (2005) Organizing and the process of sensemaking. *Organization Science, 16,* 409-421.

Weick, K. (1995) *Sensemaking in organizations.* U.S., Sage Publications.

Appendix 1: List of interviews

Chief Financial Officer ~ 46 min

Chief of Corporate Control and Finance (CFO B) ~ 38 min

Division president A ~ 53 min

Division president B ~ 53 min

Division president C ~ 1h 16 min

Division controller A ~ 60 min

Division controller B ~ 46 min

Division controller C ~ 51 min

Business controller B ~ 37 min

Business controller A ~ 1h 24 min

Appendix 2: Interview questions

1. Background information on the respondent

- *Title and current job description*
- *Working history in general & in Ruukki*
- *Educational background in brief*

2. Business steering & business performance

- *Organization and nature of the measures:*
  How is business steering / performance measurement organized? What kinds of measures are used?
- *Perception of the measures:*
  Who "owns" the measures? Who collects the information?
  How are these measures perceived in the organization? What is the organizational importance of the numbers?
- *Relevance of the measures:*
  Are they considered relevant? Are the right things measured, managed, followed?
  Do they provide sufficient information on performance?

3. Monthly management meetings: communication / discussion around the accounting numbers

- *Monthly management meetings:*
  How do the meetings usually proceed? Who are present? Who is leading the discussion etc.?
- *Accounting numbers in monthly management meetings:*
  How are performance reports discussed and handled? How is the role of the accounting numbers perceived? Do they have an effect on everyday activity? How do people see the accounting numbers?
- *Goals and aims:*
  What is the purpose of discussing about the reports / accounting numbers?
  Is attention given to the factors behind the numbers? What measures / numbers receive attention? Some numbers more important than others? What does the discussion lead to? What is to be achieved in the meetings?
  How are these goals attained? Are they attained?
- *Problems and challenges:*
  Why doesn't business steering necessarily come through as intended? Are people willing to discuss the numbers? Are people willing to share the information behind the accounting numbers?

- *Communication & nature of discussion:*

  What is the nature of communication like? How is the communication between the different participants? Does there exist a "common language" between accounting and business people?

4. Role of business controller and strategic management

- *Current role of business controller:*

  What is the role of business controller in performance management / business steering? What is expected of business controllers? Is it possible to meet the expectations?
- *Activeness as management team member:*

  How is the active and challenging role pursued? How can the challenging role be seen in e.g. monthly management meetings? What is pursued by this activeness / challenging role? What are the benefits of the active and challenging role? Are activity and the challenging role achieved? Why not?
- *How do others perceive the role:*

  Is the active and challenging role always welcomed by other organizational members? Is it perceived as confrontational? Are people willing to accept the sparring controller working close to operations and business activities? Do the business managers share the information / appreciate the questioning and probing behind the numbers?
- *Challenges of the role:*

  Are there factors preventing from taking the challenging role? Why would somebody think that accounting / finance people shouldn't be so active? Does somebody get offended by the challenging and probing controller?