

Measuring and managing process performance in a contemporary multinational organization: a case study

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Abstract

This thesis investigates how process performance measurement can be designed, implemented, used and refreshed in a large contemporary organization and what are the different forces that affect the performance measurement environment.

The thesis is conducted as a case study to a large, publicly listed, multinational industrial company where the research concentrates on a group level Purchase-to-Pay function, which coordinates, develops and ensures quality of certain accounts payable and purchasing processes.

The literature review provides insight into how performance measurement is approached in academic journals and performance measurement books. Here the focus is on theoretical frameworks, design and use of the system as well as on other factors affecting performance measurement such as different organizational cultures and employee motivation.

The empirical part is based on a single case study where a constructive research approach is used to create a performance measurement model for the case company. The findings from the empirical research are reflected against the theoretical background and a new performance measurement framework is created based on the different forces affecting the measurement system.

Based on the research, there are five main factors that affect the performance measurement system design and use: organization's vision, organizational culture and context, company infrastructure and IT, inter-organizational cooperation and stakeholder groups with diverse expectations. In addition, resource constraints are seen as a dominant factor affecting both the measurement system and all of the stakeholders involved in the environment.

Besides the forces affecting performance measurement, communication can be seen as a highly important and central factor in the creation of a successful performance measurement system. This is recognized in the background literature and receives constant support through the empirical research.

Keywords performance measurement, performance management, key performance indicators, balanced scorecard, metrics

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Tiivistelmä

Tutkielman tavoitteena on selvittää miten suorituksen mittausjärjestelmä voidaan suunnitella, toteuttaa, hyödyntää ja uudistaa nykyaikaisessa suuressa organisaatiossa ja minkälaiset tekijät vaikuttavat mittausympäristössä sen toteuttamiseen.

Tutkielma on tehty toimeksiantona suurelle, julkisesti listatulle, monikansalliselle teollisuusyritykselle. Yrityksessä tutkimus keskittyy konsernitason Purchase-to-Pay –funktioon ja tiettyihin ostoreskontran ja oston prosesseihin. Yksikön tavoitteena on koordinoita kyseisiä prosesseja, kehittää niitä ja varmistaa niiden tasainen laatu.

Tutkielman kirjallisuuskatsaus kartoittaa miten suorituksen mittauksista on lähestetty akateemisessa kirjallisuudessa ja oppikirjoissa. Osiossa keskitytään teoreettiseen viitekehykseen, mittausjärjestelmän suunnitteluun ja käyttöön sekä muihin tekijöihin, jotka vaikuttavat mittauskokonaisuuteen. Näitä ovat esimerkiksi erilaiset organisaatiokulttuurit ja työntekijöiden motiivointi.

Tutkielman empiirinen osio perustuu yksittäiseen case-tutkimukseen, jossa hyödynnettiin konstruktivistista tutkimusotetta. Tämän avulla luotiin käytännön konstruktiona uudistettu suorituksen mittausjärjestelmä case-yritykselle. Lisäksi tutkielmassa peilataan empiirisen tutkimuksen havaintoja taustakirjallisuuteen ja luodaan uusi teoreettinen viitekehys kuvaamaan nykyaikaista mittausympäristöä ja tekijöitä, jotka vaikuttavat siihen varsinaisen mittauksen ulkopuolelta.

Tutkielma osoitti, että mittausympäristöstä löytyi muutama keskeinen tekijä jotka vaikuttavat merkittävästi suorituksen mittaukseen. Näitä ovat organisaation visio ja strategia, organisaatiokulttuuri ja –ympäristö, yrityksen rakenne ja IT-järjestelmät, yritysten välinen yhteistyö sekä yrityksen erilaiset sidosryhmät, joilla voi olla hyvinkin vaihtelevia tavoitteita ja toiveita mittausjärjestelmälle. Lisäksi resurssirajoitteet nousivat keskeiseksi teemaksi, joka vaikuttaa sekä mittausjärjestelmään että kaikkiin sidosryhmiin sen ympärillä.

Näiden tekijöiden lisäksi tehokas viestintä ja kommunikointi sidosryhmien välillä nousi keskeiseksi teemaksi onnistuneelle mittausjärjestelmälle. Tämä oli aiemmin esitetty kirjallisuudessa ja tutkimuksen havainnot tukevat tätä näkemystä.

Avainsanat suorituksen mittaus, mittarit, mittaristo, tulokortti

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1 INTRODUCTION

1.1 Research Background and Motivation

Performance measurement is a widely researched theme in academic literature. Phrases like *you are what you measure* and *if you can't measure it, you can't manage it* are commonly heard in performance measurement research (see e.g. Garvin, 1993; Hauser & Katz, 1998; Kaplan & Norton, 1992). And surely this is true: when managing performance you also have to measure it, and when making these choices you also directly affect the outcome. Performance measurement is a demanding business. As Austin (1996) points out, when you measure something you always risk that instead of improving the process you may actually worsen it.

Performance measurement literature has approached the subject from multiple perspectives. Some have leaned towards creating the best possible indicators of performance (Parmenter, 2010), some avoiding the pitfalls when creating the measures (Hauser & Katz, 1998) and others have concentrated on subjects such as researching the presentational and information organizational aspects of performance measurement (Cardinaels & van Veen-Dirks, 2010; Lipe & Salterio, 2002), implementation of performance measures (Jääskeläinen & Sillanpää, 2013), developing performance measurement frameworks (Bourne, Mills, Wilcox, Neely, & Platts, 2000; Ferreira & Otley, 2009) and so forth. No matter what the exact research subject is, the goal seems to be to create effective management of processes and achieve the originally desired improvement of performance.

Performance measurement research has often tight strategic linkages (Franco-Santos, Lucianetti, & Bourne, 2012). For example, literature by Brown (1996) and Kaplan & Norton (1996) have a strong strategic focus where measurement is done within company-wide strategic context. This is justifiable as one of the most widely recognized performance measurement frameworks has been for some time the Balanced Scorecard (BSC) (Neely et al., 2000), which incorporates strategy into the famous four distinct, measureable perspectives. According to a recent Management Tools & Trends report by Bain & Company (2013), the Balanced Scorecard was even the most adopted performance management framework.

There is a great deal of existing literature around the BSC and the performance measurement built into the framework (see Kaplan & Norton, 1996, 2001). However, in many companies a

significant portion of measurement is done on operational level without these explicit linkages to strategy (Franco-Santos et al., 2007). In these cases the goal can be similarly to improve performance but the perspective is taken away from the strategic context. This viewpoint is not so widely researched, which could be due to the recent emphasis on strategic performance measurement systems as suggested by Franco-Santos et al. (2007). Process level narrows down the point of view and moves the focus to a certain course of actions. This approach takes into account the special characteristics of a certain operating environment and the characteristics of the specific processes (Jääskeläinen & Sillanpää, 2013). When we move to individual process level, we need to think about many more practical issues that companies confront. Process performance measurement gives more emphasis to factors such as quality, yield, throughput and cycle time (Kaplan & Norton, 1996, pp. 92–93). It also requires the identification of critical success factors as well softer factors such as culture, behavior and attitudes (Bititci, Carrie, & McDevitt, 1997).

The special context for this research comes from an organizational environment that incorporates global operations and several different stakeholders into the measurement picture. These two add more dimensions to a performance measurement system as they increase the amount of differing perspectives, incorporate different cultural contexts, and add supplier perspective to performance measurement. Recent research has seen the emergence of the need for organizations to collaborate across global multicultural networks, relating also directly to inter-organizational performance measurement (Bititci, Garengo, Dörfler, & Nudurupati, 2012). In dynamic nature of the organizations, there can also be seen a need to better understand how performance measurement systems can be adapted to the changing operating environment (Nudurupati, Bititci, Kumar, & Chan, 2011). The thesis is aimed to provide experience from the case company to these topics.

It has been noted in the literature that accounting information usually does not capture all the dimensions of performance considered relevant for an organization or a manager (Jordan & Messner, 2012). This thesis contributes to defining and better understanding the special characteristics and issues related to an environment of this richness by constructing a performance measurement model reflecting existing literature. The model and the findings are then compared with the previous frameworks and research to mirror a contemporary performance measurement environment. The thesis is conducted as an assignment to a case company where the writer has been previously working as part of a process development team.

1.2 The Research Question and Objectives

Earlier research contends that there is no universally applicable system of management accounting and control – the choice of appropriate techniques depends upon the circumstances surrounding an organization (Ittner & Larcker, 2001). The aim of the thesis is to study how performance measurement system can be designed, developed and managed on process level in a diverse, contemporary environment. The goal is also to study how different organizational cultures should be taken into consideration when designing and managing the performance measurement system and how different stakeholder groups affect the measurement system. Information organization and performance reporting are also studied as they are closely linked to managing processes in an effective way.

The theoretical background is linked to practical level by applying it in the case company. This is done with a constructive research approach which can be defined as problem solving through the construction of models, diagrams, plans etc. (Kasanen, Lukka, & Siitonen, 1993). From the company perspective the aim is to study the current processes in the case company, find out the dominant issues distracting performance management, and develop the performance measurement system by reflecting the issues with the theoretical background. With this interaction between theory and empirical analysis, the ultimate aim of the thesis is to contribute to the existing research by providing new knowledge from this unique context.

The research question is:

- *How to design, implement, use and refresh performance measures and manage performance effectively on process level in a multinational environment?*

This is researched with the help of sub-questions:

- *How performance measurement should be taken to process level and how to avoid pitfalls when creating and reporting the measures? (i.e. the design and use perspective)*
- *How the different stakeholder groups affect the performance measurement system in a multinational context and how they can be better integrated into the system? (i.e. organizational culture and stakeholder perspective)*

Performance measurement touches on several fields of academic business research. The theoretical background for the thesis is mostly based on academic journals and performance measurement books. The books are usually guides to presenting best practices in the field,

embodying experience from business consulting and representing the more practical side to the subject. The academic journals provide more theoretical research and concepts, and are often concentrating on certain specific issues instead of trying to cover the entire field. Recent literature reviews are used to find out the recent and emerging trends in the field. During the last 20 years, business performance measurement has been studied from multiple different perspectives (Franco-Santos et al., 2007). Articles used in this thesis are mostly from the fields of management accounting, operations management and strategic management, which is in line with the perceptions of the field in a recent performance measurement literature review by Bititci et al. (2012).

It is widely acknowledged in academic literature that performance measurement and performance measurement systems are closely linked to management control and management control systems (MCS) (Bititci, Mendibil, Nudurupati, Turner, & Garengo, 2004; Tuomela, 2005). However, due to the extent of the subjects it is not possible to cover performance measurement and MCSs in one thesis. Hence, in this study the focus is on actual performance measurement and not on the general concept of management control, even though the subject is touched upon when performance management is discussed. Consequently management control is also excluded from the theoretical frameworks presented in the thesis.

1.3 Structure of the Thesis

The thesis begins with a literature review, which takes a look into the background and development of performance measurement. The goal is to find the causalities and regularities that prevail in the field by exploring the currently used performance management frameworks and emergent trends. The section is divided to the development of performance measurement, currently prevailing practices, design and use of performance measures, problems with performance measurement as well as to managing performance.

After the theoretical framework the methodology and research approach of the thesis are presented. This includes the framework for the constructive approach as well as the common characteristics and principles associated with this kind of research. The case company, where the empirical evidence is gathered, is also presented.

The second main section of the thesis consists of the case description, empirical findings, empirical construct, analysis and discussion. Here the main challenges of developing a performance measurement system are studied in the case environment, the theory is taken to

the company level and the empirical findings are reflected against the theoretical background. As a result the section comprises a constructive model created for the case company. Finally, the construct is discussed, the findings are summed up to a theoretical framework and further research proposals are presented.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Performance Measurement and Management

Before going to the background and theoretical frameworks it is important to define some key terms used in the thesis: performance, performance measurement, performance management, performance measurement system (PMS), and performance measures. When discussing performance measurement, the terminology used by authors is often varied. In many cases certain terms can have different meanings and labeling depending on the author. This section tries to give insight into the terminology.

Performance is a term that instantly tells something to everyone but as Lebas (1995) and Otley (2001) suggest, we use it quite freely and at the same time it can mean plenty of things and have countless of definitions. Lebas (1995, p. 23) defines it being *not so much about past achievements, as generally accepted, but about the future, about the capability of the unit evaluated*. Otley (2001) considers it in business context and includes two useful dimensions to the meaning: *effectiveness* of delivering desired outputs and *efficiency* of using as few inputs as possible to obtain the outputs.

Performance measurement can be defined as *the process of quantifying the efficiency and effectiveness of action*. In the same way performance measures or indicators are *metrics used to quantify the efficiency and/or effectiveness of an action*. These definitions by Neely, Gregory, & Platts (1995, pp. 80-81) suggest performance measurement as the upper construct which is carried out with the help of performance metrics. Examples of individual measures could be manufacturing lead-time, customer satisfaction or invoice processing time. These individual measures have several different namings and categorizations depending on the author. They can be metrics, result indicators, key performance indicators (Kerzner, 2011, p. 125), result indicators, performance indicators, key result indicators, key performance indicators (Parmenter, 2010, p. 2) and so on. In this thesis measures, indicators and metrics are used interchangeably as the general term for all of these categories. A more detailed division is made between performance indicators and key performance indicators (KPIs) with the latter having a more significant influence and specific targets as suggested by Kerzner (2011, p. 125).

Bititci et al. (1997, p. 524) define performance management as *a process by which the company manages its performance in line with its corporate and functional strategies and*

objectives. Ferreira & Otley (2009, p. 264) regard performance measurement system as *the evolving formal and informal mechanisms, processes, systems, and networks used by organizations for conveying the key objectives and goals elicited by management*. Thus we can say that performance measurement system is the system that puts performance management into practice by offering tools to control performance measures and measurement and link them to organizational objectives.

Performance measurement has been widely viewed as an indispensable pre-requisite for management (Pavlov & Bourne, 2011). The relationship can also be seen so that *performance management precedes and follows performance measurement.... and performance management creates the context for measurement* (Lebas, 1995, p. 34). Hence any attempt at separating the two processes can be seen useless (Lebas, 1995).

From the definitions we can form a relationship between the concepts. Performance indicators make performance measurement possible by providing the quantified measures. Linking measurement to organizational objectives and managing performance accordingly creates the operational performance measurement system.

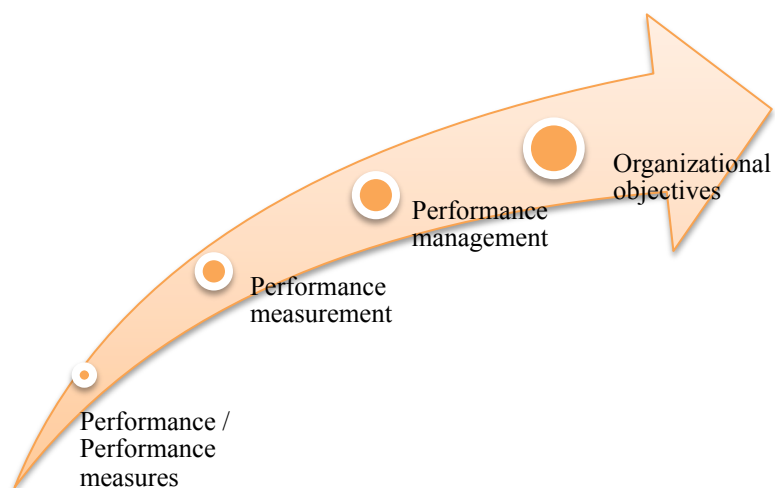


Figure 1 Performance measurement

In literature the concepts of performance measurement and performance management are used somewhat interchangeably, but I feel that it is important to be conscious of the slightly different shades of meaning the terms often have.

2.1.1 Development of Performance Measurement

To understand performance measurement in its current state, it is important to shortly look into the history and see the development from the first movements to the latest trends in the field.

According to Neely et al. (2000) The Du Pont Company is widely recognized as being the founder of financial performance measurement. In the beginning of 20th century three Du Pont cousins consolidated several small enterprises and implemented an organizational structure that incorporated the “best practices” of the day (Chandler, 1977, p. 417). Already by 1910 they had implemented all the basic techniques that have later on been used in managing big businesses and their accounting innovations (e.g. return on investment) laid base for modern asset accounting (Chandler, 1977, pp. 417, 446–447). Later on it was acknowledged by, for example, Chester I. Barnard in the 1930s that performance measures are an integral part of the planning and control cycle (Neely, 1999). The 1950s led to the development of more sophisticated approach to productivity management, such as quality control, motion-time study, variety reduction etc. (Bititci et al., 2012).

However, it can be said that it was not until the 1980s and 1990s when a new revolution in performance measurement began (Neely, 1999). This was the result of academic discussion in the 1970s and 1980s, which brought forward a lot of criticism towards contemporary performance measurement (Neely, 1999; Nudurupati et al., 2011; Yadav, Sushil, & Sagar, 2013). For example Hayes & Abernathy (1980) criticized the use of traditional short-term financial measures, Kaplan (1984) argued that measurement systems were lagging behind their time, new kind of competition and demand for internal information required system renovation and Hiromoto (1988) presented the more advanced management accounting techniques of Japanese companies. Eccles (1991, p. 131) even stated that *within the next five years, every company will have to redesign how it measures its business performance*. Neely (1999) suggests that reasons for this were the changing nature of work and organizational roles, increasing competition, new improvement initiatives and changing external demands.

The beginning of 1990s created a boom in performance measurement research when many new frameworks were introduced to meet the previous criticism. Examples of these are the performance measurement matrix (Keegan, Eiler, & Jones, 1989), measurement framework in service industries (Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991) and the renowned Balanced Scorecard (Kaplan & Norton, 1992, 1996, 2001). Later in the 1990s the dominant

question was how these so-called *balanced performance measurement systems* were to be developed and deployed (Neely, 2005).

Later on in the 1990s and 2000s the modern research has progressed from providing general recommendations on improving performance to formulating measurement frameworks and systems, and finally to the issues of implementing and using performance measurement systems to manage organizational performance (Pavlov & Bourne, 2011). Last years have also seen the rise of new issues related to performance measurement and the research is heading towards topics such as collaborative organizations, performance measurement in SMEs, open innovations and sustainability (Bititci et al., 2012).

2.1.2 Why Measure Performance?

What are the reasons for performance measurement? Lebas (1995) has defined five reasons why we want to measure business processes. Measurement helps to answer these questions:

- Where have we been?
- Where are we now?
- Where do we want to go?
- How are we going to get there?
- How will we know we got there?

Measures provide knowledge on past performance, which helps to understand what the current situation in the organization is. Measures also support the design of actions, plans and defining future targets. When the targets have been set, measurement needs to support continuous improvement and planning activities. Finally, measures provide feedback of the results and help to reinitialize the cycle again. (Lebas, 1995)

Pavlov & Bourne (2011) define two distinct functions for measurement. It works *ex post* as a feedback function after an event has taken place. This is important for the evaluation of past performance. In addition measurement also communicates performance priorities *ex ante* in order to provide guidance for the development of organizational processes. Van Veen-Dirks (2010) suggests similar roles but refers to *decision-facilitating role* of guiding decisions and managerial action, and *decision-influencing role* of using information for motivating and controlling managers and employees. Measures also enable a more proactive manner of management instead of merely reacting to problems (Kerzner, 2011, p. 75), and act as a communication forum between managers and employees (Melnik, Stewart, & Swink, 2004).

Performance measurement can also be seen as a translation, which implies exploring the associations between technologies, inscriptions, devices, human actors, and calculations. This way it gives a reflection of reality that is affected by the various factors but is usually at least in some ways imperfect. (Dambrin & Robson, 2011)

2.1.3 Performance Measurement Systems and Frameworks

In a generic sense PMS is a control framework which attempts to ensure that certain ends are achieved and particular means are used to attain these ends (Broadbent & Laughlin, 2009). However, in practice performance measurement systems can serve several different functions. They can be helpful for strategy formulation and communication, form diagnostic controls through measurement of actual results, or they can be used to motivate operational managers improve performance and operations (Wouters, 2009).

Common to most of the frameworks is that they integrate different perspectives to business performance – financial and non-financial, internal and external (Franco-Santos et al., 2012; Neely et al., 2000). This kind of notion of balance among perspectives has been widely accepted in performance measurement business (Neely, 1999). The Balanced Scorecard works as an excellent example of this kind of an approach.

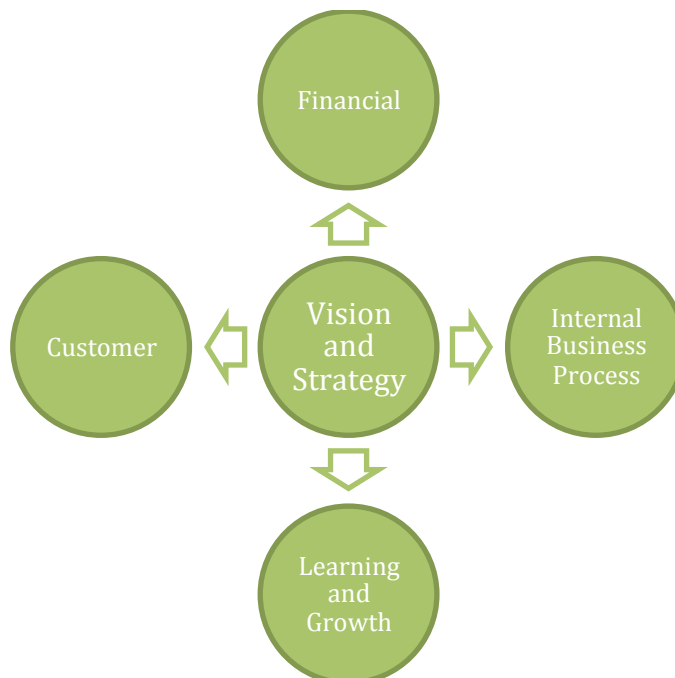


Figure 2 The Balanced Scorecard (Kaplan & Norton 1996, p. 9)

The Balanced Scorecard translates business unit's mission and strategy into tangible objectives and measures. The measures represent a balance between external measures for

shareholders and customers, and internal measures of critical business processes, innovation, and learning and growth. There is also present a balance between outcome measures, and measures that drive future performance. The BSC is intended to be used as a strategic management system, to manage strategy over the long run. (Kaplan & Norton, 1996, p. 10) With financial and customer objectives established, an organization then identifies the objectives and measures for its internal business processes and learning and growth. The different perspectives are in constant interplay. (Kaplan & Norton, 1996, pp. 11–12)

Strategic linkage is present also in many of the other performance measurement frameworks besides the BSC. Strategy and metrics are closely linked as the quote from Melnyk, Stewart, & Swink (2004) suggests: *Strategy without metrics is useless; metrics without a strategy are meaningless*. In the last years practitioners and academics have advocated this kind of *integrated PMS* that implies comprehensiveness of the measures, their consistency with each other and according to the company's strategy, and explicit definitions of causal links within the system (Giovannoni & Maraghini, 2013).

There can be seen four main processes in performance measurement. These are the design, implementation, use and refreshing of a PMS. (Bourne, Kennerley, & Franco-Santos, 2005; Bourne et al., 2000; Neely et al., 2000) Design phase can be divided to identifying the key objectives and designing the measures themselves. Implementation is the phase in which systems and procedures are put in place to collect and process data. This often involves changes to information systems and initiation of new procedures so that all the necessary data can be captured. Use perspective has two meanings. First, measuring the success of the implementation of organizational objectives. Second, the information and feedback from the measures can be used to challenge the assumptions and test the validity of the objectives. Finally, the PMS requires developing and reviewing at different levels as the situations change. (Bourne et al., 2000) Nudurupati et al. (2011) argue that PMSs change the way people interact with information before and after the implementation of the system.

Franco-Santos et al. (2007) define performance measurement systems from a more input-output kind of perspective. They specify three main processes, which are *information provision, measure design and selection, and data capture*. Franco-Santos et al. (2007) argue that if a company does not have a specific process of designing measures to assess its performance, a process for capturing the data to calculate its selected performance measures

and a process to distribute the results of measurement – the company does not have a performance measurement system.

The performance measurement system is responsible for the coordination and alignment of measures. Alignment helps to fit the measures with the overall objectives of measurement and coordination is aimed to make the metrics consistent and supportive of each other. (Melnik et al., 2004) The process of deciding the measures is also valuable in itself because it forces management to be explicit about priorities and offers an opportunity to bring forward and resolve any differences of opinions that might be present (Neely et al., 2000). Franco-Santos et al. (2012) found consensus among academics on the importance of adopting a fair, transparent, and consultative process for performance measurement systems development. They suggest that with this kind of process, people feel more empowered and involved in performance measurement.

Melnik et al. (2004) suggest that there are three levels for performance measurement. The top level is the whole performance measurement system. Below this are the measure sets that direct, evaluate and motivate specific process, area or function. Individual measures are the building blocks for the sets and this way the three levels form a unity. Neely et al. (2000) studied performance measurement system design in their research. They have compiled into their framework the different steps of designing and using the system. An important notion are the forces affecting the PMS. Neely et al. (2000) present these as emerging research themes and acknowledge that they play a significant role when managing the system.

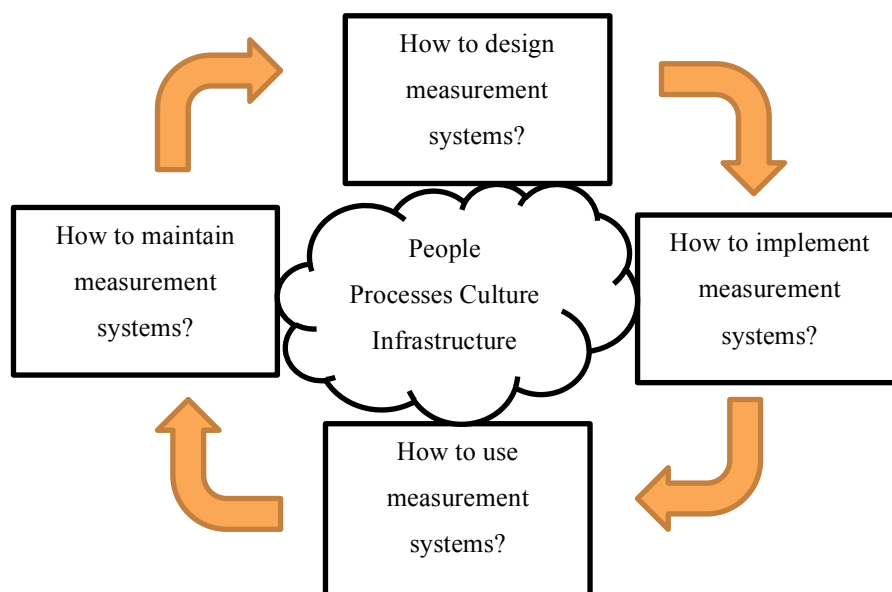


Figure 3 Managing a measurement system (Neely et al., 2000)

2.1.4 Performance Measurement on Process Level

Many performance measurement books approach performance measurement from the strategic Balanced Scorecard type of measurement level as presented in the previous chapter (see Brown, 1996; Kaplan & Norton, 1996). Many academic studies on performance measurement systems also discuss linking measures to strategy or strategic objectives. However, there are also many systems within business that only have operational goals, which may or may not be implicitly or explicitly linked to strategy. (Franco-Santos et al., 2007)

The traditional approach to internal business process measurement is to monitor and improve existing business processes. The BSC approach suggests also looking at entirely new processes at which an organization can excel to produce new kind of value. The critical processes may have previously been completely unnoticed. (Kaplan & Norton, 1996, pp. 26–27) By applying measures on process level, they are intended to facilitate decisions by providing information about current functioning of the process, meaning possible problems, solutions, and improvement opportunities, which may improve planning and coordination of a department's activities. (van Veen-Dirks, 2010)

When we measure processes and operational performance, the goal is to manage performance so that they produce reliable and consistent output (Brown, 1996, p. 95). Process measures can measure activity or behavior, not necessarily outputs themselves. These kind of process metrics are proactive or preventive in nature (Brown, 1996, p. 44). By controlling the processes a company can improve its chances to achieve constant high-quality outputs (Brown, 1996, pp. 97–98). The process and operational measures are often leading-edge measures that are more short-term focused, and are monitored weekly or even daily (Brown, 1996, p. 95). Measuring this kind of performance is a complex phenomenon and it includes several aspects. Quality, productivity, cost-effectiveness and flexibility are examples of success factors. (Hannula, 2002)

Because operational processes often have specific characteristics, creating valid, useful and understandable performance measures is challenging (Wouters, 2009). One of the crucial tasks is to find future-oriented metrics that drive right kind of performance (Brown, 1996, pp. 108–109). One way to solve this problem is to involve already in the development phase people whose performance will be measured, by utilizing their knowledge of processes and committing them to the use of the system (Ukko, Tenhunen, & Rantanen, 2007; Wouters,

2009). However, it can be challenging to get lower levels of an organization to commit to the measures and measurement. This requires making the measures tangible, providing concrete direction for action, and convincing employees of the importance of performance measurement. (Wouters, 2009) The views and opinions of the management and employees on the PMS often differ significantly. It is common that management's view is much more optimistic and pleased with the system than employees' who often feel that the information is not always understandable, it is divided to different systems and joint measurement meetings are organized too seldom. To get more out of an operative-level PMS, companies have to consider this employee perspective in more depth. (Ukko et al., 2007)

2.1.5 Inter-organizational Cooperation, Services Outsourcing and Performance Measurement

In recent years outsourcing organizational functions has become very common in organizations of all sizes. Larger companies often outsource, for example, their accounting or call center functions to an outside supplier. Outsourcing to geographically distant countries, called offshore outsourcing, is also growing in popularity (Tate & Ellram, 2012). As this kind of globalization deepens beyond supply chain and inter-organization collaborations, organizations and individuals are likely to be interacting across multiple and diverse national and organizational cultures (Nudurupati et al., 2011). This change shifts the focus from traditional supply chain management to value co-creation, service ecosystems and inter-organizational learning (Lusch, 2011).

Performance measurement research has recognized the trends towards inter-organizational working and performance measurement in supply chains and collaborative organizations, covering issues such as inter-organizational agreement on performance measurement (Nudurupati et al., 2011). When we are thinking about process outsourcing, the focus is on services perspective. However, emphasis in existing literature has been on performance measurement of manufacturing supply chain (Cho, Lee, Ahn, & Hwang, 2012; Ellram, Tate, & Billington, 2004). Cho et al. (2012) call for a better understanding of services supply chain measurement to reflect the best practices of these processes.

Ellram et al. (2004, p. 25) define service supply chain management as *the management of information, processes, capacity, service performance and funds from the earliest supplier to the ultimate customer*. Information flows are essential to these supply chains in terms of identifying demand, sharing information, establishing expectations, and clearly defining the

scope of the work (Ellram et al., 2004). Service-dominant logic concentrates solely on services, defining them *as a process or as the use of one's resources or competences for the benefit of another entity* (Vargo & Lusch, 2004 as cited in Lusch, 2011, p. 14). Common to services is that human labor forms a significant portion of the total value delivered. As human performance is unique despite training and background, it makes precise management and control of many services difficult. (Ellram et al., 2004) As the final product of services is also intangible and difficult to quantify, it makes the measurement very complex (Sanders, Locke, Moore, & Autry, 2007).

Brown (1996, p. 45) suggests that organizations need to have very thorough methods for measuring supplier performance. He continues that good supplier measurement systems have sets of supplier metrics including measures of product/service quality, process variables, price competitiveness, and overall ease of doing business. Ellram et al. (2004) state that historically service level agreements and such contracts have not been as precise and detailed as specifications for manufacturing products. It could be due to the services sectors' diversity, which makes it difficult to find a common thread among them (Ellram et al., 2004).

Bhagwat & Sharma (2007) suggest a Balanced Scorecard kind of approach to measuring supplier performance. This would include performance metrics classified at strategic, tactical and operational levels, and feature financial and non-financial measures like in the original BSC. Bhagwat & Sharma suggest a mix of outcome measures and performance drivers to incorporate different perspectives to the measurement system. They acknowledge that all organizations are unique and management will need to weight different measures accordingly in its decision-making.

Cutting costs and increasing process efficiency are the main reasons why companies outsource their operations. In addition though, there has been an increasing focus on resource and strategic benefits. (Sanders et al., 2007) Despite the reasons, outsourcing may require greater monitoring and management by finance and procurement than would internal operations (Ellram et al., 2004). In addition, offshore outsourcing increases organizational complexity and risk, as companies are exposed to different laws, cultures and customs (Tate & Ellram, 2012). As the company relinquishes more control through outsourced arrangements, it takes on more risk (Sanders et al., 2007). However, when used correctly, it can also develop a global communication system that allows diverse cultures from around the

world to work as effective teams and opens up possibilities for new kinds of innovation processes (Lusch, 2011).

Good service level agreements can significantly reduce uncertainty in performance expectations. The service performance must be monitored and compared to the contract for compliance. (Ellram et al., 2004) Brown (1996, p. 113) suggests that the data on supplier product/service quality should be based on company's own measurement, not the suppliers'. Brown (1996, p. 121) also defines some aspects for excellent supplier performance measurement. He states that suppliers should be assessed using key process metrics along with traditional quality and price metrics. Additionally measures of satisfaction with supplier performance would be collected on a regular basis and the supplier would also be rated on their pricing.

Sanders et al. (2007) state that the most underestimated issue in outsourcing is managing the outsourcing relationship successfully. It is usually not sufficient to simply hand over the tasks or functions but it is the ongoing collaboration that ensures successful outcomes. An important element of building an effective relationship is a joint communication plan. The company needs to proactively communicate strategic intention, expectations, timeliness and business benefits to the key stakeholders. (Sanders et al., 2007) The main conclusion by Sanders et al. (2007) is that there is no one best sourcing strategy. Instead the selected sourcing strategy should be based on the current and unique needs of the firm.

2.2 Performance Measures

2.2.1 Designing the Measures

The choice of performance measures is one of the most critical challenges facing organizations as they play a major role in developing strategic plans, evaluating the achievement of organizational objectives, and compensating managers (Ittner & Larcker, 1998). This link between strategy, execution and measures is essential to the ultimate value creation (Melnik et al., 2004). Kaplan & Norton (1996, p. 27) suggest that the measures should be chosen so that they present the greatest impact on achieving organization's objectives. This kind of approach can be supported with a value driver analysis of performance measures (Ittner & Larcker, 2001). Brown (1996, pp. 166–167) warns that this link between goals and success factors and performance measurement is quite often missing because the two are developed independently of each other.

The problem with performance measurement frameworks such as the BSC is that they suggest the areas where to focus but give little guidance how to identify, introduce and ultimately use the actual measures to guide the business (Neely et al., 2000). Neely et al. (2000) even found much of the writing about performance measurement to be quite superficial, ignoring the complexity involved in the design of measurement systems. When we think about choosing the performance measures we have to make decisions what to measure and how. Study by DeBusk et al. (2003) suggest that the number of performance measure components and their relative composition is situational, and that it depends highly on strategies of the organization. The measures, however, should make the goals and achieved performance concrete to everyone (Melnik et al., 2004).

If we follow the notion of DeBusk et al. (2003) and regard the amount and composition of measures situational, we need to consider what aspects to consider when choosing the measures. Melnyk, Bititci, Platts, Tobias, & Andersen (2013) define three distinct characteristics for performance metrics:

1. Quantify what is happening.
2. Indicate what is considered good and bad performance and guide the direction of the organization.
3. Show the consequences relating to being on, below or above targets.

Melnik et al. (2013) state that all of the elements are necessary; removing any of them cripples the measurement system and diminishes its effectiveness from a business perspective. Dambrin & Robson (2011) suggest that in reality performance measures do not represent true performance, nor do they resemble the world; instead, they refer to a series of articulations and interpretations of performance made by the users of the measures. To better reflect reality, Hannula (2002) defines three crucial criteria for performance measures: *validity*, *reliability* and *relevance*. Validity is the ability of a measure to measure what it is intended to measure. Reliability refers to the consistency of measurement results, including characteristics such as accuracy and precision. It depends mainly on the reliability of the information systems used in the business unit. Relevance is the value and usefulness of the measure to its users. Information produced by the PMS should try to fulfill these criteria but in any case the measurement is always a compromise between the different factors (Hannula, 2002).

In any case measures should be integrated hierarchically and across business functions; and be based on thorough understanding of the organization's cost drivers (Neely et al., 2000). Challenge is to design the structure to the measures, meaning the grouping and deriving the overall performance from them (Melnyk et al., 2004).

The Amount of Measures

The amount of information items that people can process simultaneously is a somewhat studied subject in the performance measurement literature (see DeBusk et al., 2003; Lipe & Salterio, 2002). The background for this is in cognitive psychology which has defined this amount to be around 7 concurrent items (Baddeley, 1994; Miller, 1956). This has important implications when designing a PMS and choosing what things to measure. It can also become a major problem as many measurement systems have more simultaneous items than this.

The performance measurement literature gives diverse advice on the matter. Brown (1996, pp. 16, 173–174) suggests that 10 to 20 should be the maximum amount of measures for one individual to monitor, otherwise it can lead to a situation where the measures are rarely looked at. He continues that for managing a department or a business unit, a smaller number could be appropriate. Kerzner (2011, p. 103) suggests that typically between six and ten KPIs are standard for a project measurement. In addition to the main KPIs, a company can also have backup data that is available requested-as-needed basis but does not need to be looked at if the performance based on metrics is good (Brown, 1996, pp. 173–174). This data resource or backing performance indicators would support the main measures (Kerzner, 2011, p. 103).

Lipe & Salterio (2002) suggest that categorization of measures can have a significant effect on how people interpret, combine and use the data. The categorization may prime people to seek relations among measures and to react to any perceived correlations by reducing the impact of individual measures. Their research concentrates on the Balanced Scorecard and the categorization of the framework but it has important implications because measures can be categorized also in many other ways, which would most likely produce similar results.

Types of Measures

Measures can be categorized in several ways (Kerzner, 2011, p. 76). Most definitions only have slight differences in meaning and some authors just seem to prefer using their own naming scheme for measures. Hence, it is not necessary to go through all of them. However, there are a couple of different basic categorizations for measures. Neely et al. (2000) argue

that there are basically two types of performance measures in any organization: ones that relate to results (competitiveness, financial performance) and others that focus on determinants of the results (quality, flexibility, resource utilization and innovation).

Melnyk et al. (2004) categorize them based on metrics *focus* and metrics *tense*. Focus pertains to the resource of the metric; metrics are reported either in financial (monetary) or operational details (lead times, setup times etc.). Metric tense refers to how the metrics are intended to be used: they can judge outcome performance or predict future performance. The classification by Melnyk et al. (2004) makes a distinction between monetary resource equivalents and operational metrics in other resource units such as time or people. The classification is similar to the one by Neely et al. (2000) but adds the dimensions of past results and future performance to the measures. Brown (1996, pp. 3, 50) also suggests using a mix of past, present and future measures to ensure that the company is concerned with all three perspectives.

With outcome-oriented metrics, we can study the past and improve the future by assuming that the problems and lessons uncovered can be applied to future situations. This is an appropriate approach when the interest is in preventing the occurrence of problems. (Melnyk et al., 2004) Brown (1996, pp. 50–51) warns that historical data itself does not enable a manager to do much to improve future performance but the key is in the problem identification and solving. It is important to look at the causalities between processes and find out how they affect each other. One should look at items directly relevant to performance and find information on controllable factors that will lead to positive outcomes (Kerzner, 2011, pp. 100–101). This way it is possible to prevent problems instead of only correcting them afterwards (Melnyk et al., 2004).

Measures related to results are often called lagging indicators, whereas determinants are leading indicators (Neely et al., 2000). Lagging indicators are the result of a strategy while driver measures are leading indicators measuring performance when implementing the strategic objectives (DeBusk et al., 2003). Measures themselves can have different formats and can be measured and recorded as numbers, percentages, dollars, counts, ratings, quantitatively or qualitatively (Kerzner, 2011, p. 72).

Documenting the Measures

The chosen measures should be based on an agreed upon set of data with a well-understood and documented process of transforming the data into the measures (Melnyk et al., 2004). Kerzner (2011, pp. 74–75) turns this into questions of what should be measured and how, who will perform the measurement, who collects the data and when, and how is the information reported. The purpose of each measure should be simple, clear and made explicit (Neely et al., 2000).

Many organizations have adopted a process of clearly defining every measure within the business and incorporating these into a measures catalogue. This ensures that there is a central resource from where everyone can find out what particular measure constitutes. (Bauer, Tanner, & Neely, 2004) A critical question related to this is that does this kind of documentation contain all the necessary information to apply the processes, or is there some other knowledge, tacit or explicit, needed for proper application (Neely et al., 2000). This additional information would then need to be studied and documented separately.

Setting the Targets

It was already stated earlier that setting targets and defining good and bad performance is crucial when designing and evaluating performance measures (Melnyk et al., 2013). Previous research has noticed the importance of target-setting but has also perceived a lack of depth of analysis related to the subject (Stringer, 2007). Any controlled system requires objectives and goals against which its performance can be assessed (Otley & Berry, 1980 as cited in Otley, 1999). This is important because the targets identify gaps between current state of processes and point out the level of desired performance, indicating the need for action (Melnyk et al., 2004). Research has found that target levels have an effect on performance (Ferreira & Otley, 2009), and a critical impact on the overall performance management system (Stringer, 2007). How to identify the targets and set them on an appropriate level?

A framework by Ferreira & Otley (2009) starts target-setting by choosing the organization's key performance measures and success factors. They suggest asking what level of performance does the organization need to achieve on these and how challenging are the hypothetical target levels. Research has indicated that moderately difficult goals would enhance group's performance (Fisher, Pfeffer, & Sprinkle, 2003). Targets can also encourage

comparison between the users of the metrics (Melnyk et al., 2004). This kind of an effect can be important if a company wants to spur rivalry between units or employees.

Reference points can also be based on past metric values or on values of comparable processes (benchmarks), and can be internally created or derived from external standards (Melnyk et al., 2004). Brown (1996, pp. 9, 173) supports this by saying that without goals or targets measurement is meaningless and does not help managing performance. Brown suggests that the goals should be based on research about key competitors and on a study of benchmark companies that can also be outside of the company's own industry. Brown (1996, p. 10) warns about setting arbitrary goals. These kinds of targets can be harmful to the PMS as they give an image that the targets are not based on facts and reasoning, which leads easily to lower levels of motivation in reaching the targets. Use of external benchmarks appears to provide a greater degree of legitimacy for the targets (Ferreira & Otley, 2009).

Academic literature does not seem to provide very much or go very deep into the formulation of target levels. This might be due to them being very context-specific and hence only general guidelines can be suggested. The need for targets is noted in many studies and this seems to be the key theme, leaving the actual target setting in the hands of the organization's management.

2.2.2 Problems in Performance Measurement

There has been a constant discussion in the literature whether performance measurement actually has a positive effect on performance or not (Austin, 1996, pp. 6–7; Bourne et al., 2005). Bourne et al. (2005, p. 374) suggest that we should ask instead *under what circumstances does performance measurement positively impact on organizational performance?* To answer this we need to go through the common problems to most PMSs in organizations.

Common to many PMSs is that they do not produce results that were originally desired – instead they may actually worsen true performance even though the measures would indicate improvements in performance (see Austin, 1996; Brown, 1996). Austin (1996, p. 10) calls this measurement *dysfunction*. He defines it as *consequences of organizational actions that interfere with attainment of the spirit of stated intentions of the organization*. The term is easier to explain with an example: a company wants to improve its call center's performance and chooses length of the calls as the leading measure. However, the result could be that the calls become shorter but this also leads to deterioration in quality of service and to customers

calling multiple times to receive answers, which were not the original objectives of the initiative.

Dysfunction can take place when setting targets, measuring performance, and comparing actual results with the targets. The reasons can be for example data manipulation or management myopia. (van Veen-Dirks, 2010) Austin (1996, pp. 16–17) states that measurement dysfunction could arise because a system measures too few things or even wrong things. He suggests that this could be solved with more or better measures. One common problem is also the imprecise definition of measures which can cause confusion, arguments and misunderstandings of performance (Neely, 1999). In addition poorly developed metrics themselves can lead to frustration, confusion and conflicts (Melnik et al., 2004).

Large companies have extensive resources, which often leads them to measure and report significant amount of information. Large fraction of employee time is tied to collecting and summarizing data, and interpreting results from the mass of charts. (Brown, 1996, p. 12) Brown (1996, p. 16) suggests having too much data as one of the most common and most serious problems an organization can have with its measurement system, because it wastes a great deal of valuable time and resources. It can also distract noticing and using critical information by providing too much information with limited value (Kerzner, 2011, p. 80). Measuring too many things is one thing but many companies also fall down to measuring too few things, which causes a lack of balance between the desired outcomes and the performance drivers of those outcomes. This means that the performance measurement system does not catch all the crucial factors for successful performance. (Kaplan & Norton, 2001, p. 360)

As noted earlier, measuring wrong things can lead to performance measurement dysfunction. The 1990s spawned a considerable amount of criticism in the academic literature towards plain traditional financial performance measures (see Banker, Chang, Janakiraman, & Konstans, 2004; DeBusk et al., 2003; Ittner & Larcker, 1998), which led to calls for increasing amount of non-financial and qualitative measures (Dambrin & Robson, 2011). Ittner & Larcker (1998) and Neely (1999) have listed problems with traditional financial measures. They can be too historical and backward looking, lack predictive ability, reward and encourage short-term or incorrect behavior, are not actionable, do not capture key business changes until too late, lack strategic focus, are too aggregated and summarized to guide management action, are too departmentalized instead of cross-functional, do not

effectively consider intangibles and do not capture customer perspective. Kaplan & Norton (1996, p. 24) suggest that the biggest problem is that they are lagging indicators that tell about past actions but fail to provide adequate guidance for the actions to be taken today.

Financial measures might be emphasized because managers know them best and there is often pressure towards financial results (Anthony & Govindarajan 2001, p. 451; DeBusk et al. 2003). Many companies have emphasized forward-looking non-financial measures to confront the problems with traditional financial measures (DeBusk et al., 2003; Ittner & Larcker, 1998). Non-financial performance measures make it possible to follow progress in key strategic success factors and they can be used to emphasize wider range of values (Tuomela, 2005). The balance between financial and non-financial measures is also a key concept in the Balanced Scorecard (Kaplan & Norton, 1996). Last years have also seen an emphasis on customer, employee and environment perspectives (Dambrin & Robson, 2011).

Wouters & Wilderom (2008) warn about too strict top-down, mandated performance measurement initiatives, which may insufficiently reflect local organizational contexts, experience and unique expertise of employees. Tuomela (2005) found in his study that interactive use of performance measures might be viewed threatening by certain individuals. This is because non-financial measures increase visibility of actions and strengthens accountability to peers. They may think that the improvements cause them to lose power, authority, hierarchical positions, or even their jobs. It is very difficult to identify these hidden agendas (Kerzner, 2011, p. 32). Tuomela (2005) suggests that this could lead to resistance against interactive control systems. This resistance can be one of the key reasons for the failure of a PMS (Bititci et al., 2004). However, strong management commitment has been found to have a positive effect on performance measure development (Cavalluzzo & Ittner, 2004). These arguments implicate the need for good integration in the design and implementation phase of a PMS.

Employees may also feel that the measurement or metrics do not completely reflect what their real contribution to the organization is. They may feel that uncontrollable circumstances affect the outcome or they may feel that the targets are unrealistic, and that these factors are not considered when measures are evaluated. (Wouters & Wilderom, 2008) Ukko et al. (2007) state that it is important to study the perceptions of managers and employees of the impacts of performance measurement to untangle these possibly different views. They suggest that the

employee perspective should be considered constantly during the development, implementation and use of performance measurement system.

Nudurupati et al. (2011) highlight integration of the PMS with the organization's information system as one of the recent issues. This can lead to laborious and time-consuming data collection, sorting, maintenance and reporting (Marchand & Raymond, 2008). When data comes from multiple sources or the information system is not integrated, enterprises need to invest much time to data gathering. Different data formats with interaction between departments easily leads to hidden and duplicate data with questions arising about the data validity. As information sources are not linked properly, information is not available dynamically, which hinders fast and confident decision-making. All this leads to lack of effective communication of right information to right people at the right time. (Nudurupati et al., 2011)

2.3 Managing Performance

Even though the link between performance measurement and management has been studied widely and was already shortly defined in the beginning of this theory section, Pavlov & Bourne (2011) also state that it is still one of the most pressing contemporary challenges in the field, and has been notoriously difficult to explain.

Many studies state that the overall goal of performance management is to communicate and implement strategy (DeBusk et al., 2003; Kaplan & Norton, 1996). Performance metrics make strategy concrete and meaningful, and this way communicate the organizational objectives and strategy to everyone involved (Melnyk et al., 2013). Bauer et al. (2004) found in their study that many managers recognize performance measurement this way as a powerful communication medium that can be used to make strategy come alive for people at every level within the organization. Lipe & Salterio (2002) approach the subject from slightly different angle and offer an explanation that the very purpose of managerial tools comprising a broad group of performance measures is to improve managerial decision-making. Performance measurement has been seen as the major instrument of performance management, as it provides and integrates the necessary information related to performance management decision-making (Bititci et al., 1997).

Neely et al. (2000) states that critical to the success of a PMS is that it actually drives day-to-day decisions and operations, ensuring that the firm's objectives are implemented. PMS reports the current level of performance, and comparing it with the desired level of

performance, facilitates effective control and correction of processes (Melnyk et al., 2013). Bititci et al. (1997) discuss about a proactively closed loop control system where the organizational strategies are deployed to all processes, activities, tasks and personnel, and feedback is obtained through the performance measurement system to enable appropriate management of decisions. The goal is undertaking of corrective and/or adaptive courses of action (Ferreira & Otley, 2009; Otley, 1999). Pavlov & Bourne (2011) add that recent contributions have stressed measurement in its feed-forward role, where measures prescribe learning domains and stimulate learning in strategically important areas helping processes to generate new ideas and evolve without being completely predetermined by management.

Figure 4 visualizes this interplay between the different levels within an organization and the different roles PMSs can have. It also illustrates how relevant information flows through the system (Bititci et al., 1997).



Figure 4 The feedback and feed-forward system of a performance measurement process / Adapted from Bititci (1997), Pavlov & Bourne (2011)

Otley (1999) reminds that the timescale of these feedback and feed-forward roles may range from instantaneous to hours, days, weeks, even years. He continues that the learning processes range from simple corrective actions to the revision of organizational objectives if the current ones are proved to be ineffective.

Bititci et al. (2004) found that a successfully implemented and used PMS can lead to a more participative and consultative management style. However, this linkage is not unambiguous as the findings by Ukko et al. (2007) suggest that the leadership style is more dependent on the organizational culture and individual characteristics of managers than on the PMS. However,

they also endorse the notion that PMS can support managers in leading people. Franco-Santos et al. (2012) found in their study of previous performance management literature that the ability of these systems to positively influence people’s behavior, organizational capabilities and ultimately performance is directly linked to the way the system is designed, developed and used, and how well it fits the context where it operates. The danger is that even though measuring performance does have power to produce an effect on performance, the effect is unpredictable, creation mechanism is often poorly understood, and there is also a substantial amount of research with conflicting results about the amount and direction of the influence (Pavlov & Bourne, 2011).

Internal and *global transparency* can be seen as key components of a PMS and important to successful performance management (Adler & Borys, 1996). Internal transparency refers to understanding the definitions and measurement of the indicators, which is necessary when identifying problems. Global transparency positions the PMS to the organization’s bigger picture and in line with its vision or strategy. This transparency also opens up the possibility to identify incompleteness in the PMS. (Jordan & Messner, 2012)

A framework by Melnyk et al. (2013) in Figure 5 illustrates the interfaces within a performance measurement system. It forms an integrated system instead of operating in an organizational, strategic, or environmental vacuum. Changes in organizational structure, culture, corporate strategy or the environment are likely to have a direct consequence for the PMS.

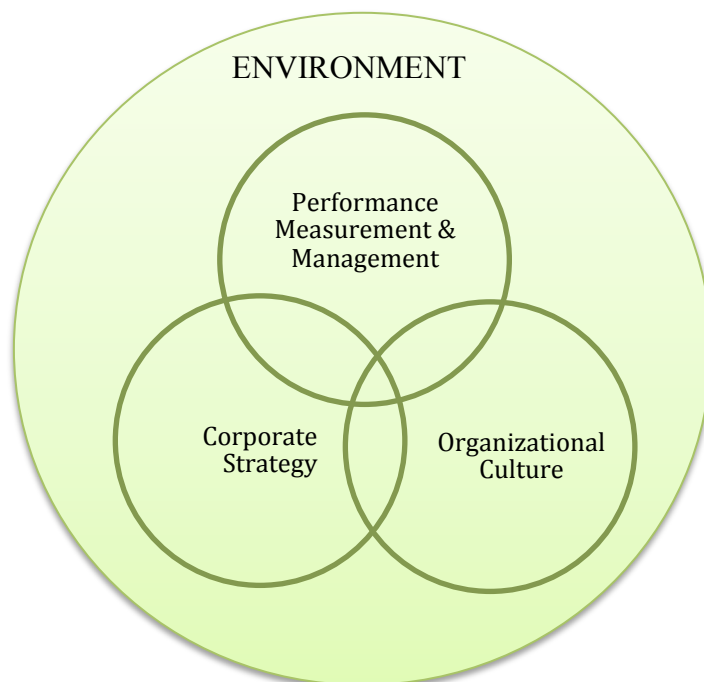


Figure 5 Theoretical framework of the interfaces within a performance measurement system (Melnyk et al., 2013)

2.3.1 Acknowledging Organizational Culture and Context

Besides business strategy, performance measurement and management also need to fit with the organizational culture and external environment (Melnyk et al., 2013). This is because ultimately the effectiveness of performance measurement systems will depend on how they affect individual's behavior (Chenhall & Langfield-Smith, 2007). Henri (2006) states that prior PMS research has mostly concentrated on national culture instead of organizational culture. This means assuming a difference between countries but not measuring culture more specifically (Otley, 2003).

Organizational culture has an effect on how PMSs are implemented and used, and thus affect their success or failure (Bititci et al., 2004). Context, meaning societal and organizational situation, plays a major role in molding the nature of any PMS. The internal environment provides challenges and opportunities to which the organization will need to choose whether to react or not. (Broadbent & Laughlin, 2009) Henri (2006) found evidence in his study that organizational culture has a direct effect on the diversity of measurement and an indirect effect through the use of PMS. However, Ferreira & Otley (2009) state that culture and context related to performance measurement is a difficult subject as the factors involved are largely outside the control of the organization.

How do organizational cultures differ? Henri's (2006) cultural classification of organizations is based heavily on division between control and flexibility. He defines control as predictability, stability, formality, rigidity and conformity while flexibility values refer to spontaneity, change, openness, adaptability and responsiveness. Henri found support that flexibility type of organizations tend to use PMS for attention focusing purposes, meaning promoting discussion, debate, and exchanges of information. This was also associated with greater diversity of measurement. Henri suggests that in these organizations both financial and non-financial measures are more widely used to correct actions, foster learning and in emergence of new strategic patterns.

Broadbent & Laughlin (2009) suggest that the organizational context varies significantly depending on history, purpose, technology, people, environment etc. Otley (2003) states that this environment is often taken for granted by participants, even though it provides the foundation for PMS design and use. He continues that similar systems operating in different cultural environments may well have different outcomes.

When talking about culture, we need to think about organizational culture as well as the different personalities involved in the performance measurement system. Otley (2003) suggests that there are distinct aspects of organizational culture, workgroup and professional cultures. He also adds that on individual level people are affected by a range of cultural differences based on their personal and work history. Performance measurement and management can arguably be seen as a social phenomenon that is shaped by the feelings, values and basic beliefs of the individuals, organization, community and the society within which it operates (Bititci et al., 2012).

By understanding the context and culture, we understand better the focus, i.e. what the PMS is intended to control, and the challenges and opportunities that the external and internal environment provides (Broadbent & Laughlin, 2009). Technically perfect systems can be useless if they are not integrated into the organizational management and structures (Jääskeläinen & Sillanpää, 2013). Meekings argues that making people use measures properly becomes a vehicle for a cultural change, which helps liberating the power of the organization (as cited in Nudurupati et al., 2011). Bititci et al. (2012) suggest that there still appears to be a need for a better understanding of the interplay between organizational culture and performance measurement.

2.3.2 Employee Motivation and Performance Measurement as an Enabling Structure

Motivating people to work towards the goals of the organization is an integral part of a PMS. However, the relationship between rewards, motivation and performance is very complex and often more intricate than what it first seems (Ferreira & Otley, 2009). The problem is that performance measurement systems are often seen as control devices (Wouters, 2009). How to turn this upside down and better motivate employees? Even though the subject has been researched extensively, we still face the problem of how to motivate people to act in the organization's best interest (Otley, 2003).

The traditional way of motivating people towards organizational goals is through overt, monetary incentives such as sales bonuses, incentive pay, pay-for-performance or other concrete rewards. Less tangible incentives, such as increased probability of promotion or recognition, operate in the same way even though the rewards are different in nature. (Austin, 1996, p. 22) Kerzner (2011, p. 110) suggests that it can be very difficult to consistently motivate individuals to work on improving performance if they are not rewarded for doing so. However, informal praise or criticism and general attitudes can have a significant effect on

how employees perceive the PMS and influence the workings of the system (Ferreira & Otley, 2009). All in all, one central problem with incentive systems is the difficulty to anticipate the behavioral responses to the controls (Berry, Coad, Harris, Otley, & Stringer, 2009).

The subject can also be approached from another angle. Wouters & Wilderom (2008) and Wouters (2009) discuss about the *enabling* effect of performance measurement systems: instead of being a control device, performance measurement can be something that supports, helps to assess how things are going, identify problems, develop ideas for improvement and engineer solutions to concrete problems. Adler & Borys (1996) have created a framework to help assess these different sides of formalization. They talk about *enabling* and *coercive formalization*. The former is more interactive and helps employees to do their work better as it provides visibility into the processes by explicating key components and by codifying best-practice routines. The latter works more as a control function when procedures are formulated as lists of flat assertions of duties and are designed more to help supervisors than employee efforts. Wouters (2009) suggests that employees are likely to have a more positive attitude to formalization, such as a performance measurement system, when it enables them to better master their tasks as opposed to being an attempt to coerce employees' effort and compliance.

Adler & Borys (1996) point out that goal congruence is a critical contingency to enabling formalization. They suggest that when employees concur with organizational goals, they no longer experience formal procedures as a negation of individual autonomy but as a valuable means to a desired goal. Austin (1996, pp. 84–86) talks about group identity or clan mechanisms. If people identify with the organization where they work, they are more likely to sacrifice their own interests in favor of group's interests. He continues that these mechanisms strongly influence behavior in successful organizations.

Achieving this enabling effect of a PMS is not an easy task. How to affect stakeholders' attitudes? Jordan & Messner (2012) noticed in their study of previous literature that the enabling or coercive effect is highly dependent on the PMS design and implementation process. Franco-Santos et al. (2007) identify communication as one of the key roles of performance measurement systems. This notion receives support from Farrell, Kadous, & Towry (2012) whose research indicates that communicating qualitative information about causal linkages between actions today and performance tomorrow improves significantly employee effort allocation, and through this company's performance. They noticed that

simple mechanisms of communication such as face-to-face meetings or electronic messages can work effectively on explaining these linkages. Consequently, communication can be related to the rationale for making the changes and factors, which will be affected by the PMS, and it also includes listening to the concerns of the employees (Jääskeläinen & Sillanpää, 2013), suggesting a strong two-way interaction. The discussion in literature seems to point strongly towards the important design and use phases of the PMS.

Closely linked to the enabling structure is the learning and growth perspective presented in the Balanced Scorecard. It identifies the infrastructure the organization must build to create long-term growth and improvement (Kaplan & Norton, 1996, p. 28). The learning and growth come from three principal sources: people, systems, and organizational procedures. The process can reveal gaps between the existing capabilities of people, systems and procedures and what will be required to achieve desired performance. Closing these gaps may require investing in reskilling employees, enhancing information technology and systems, and aligning organizational procedures and routines. (Kaplan & Norton, 1996, pp. 28–29)

One solution to better integrate employees into the PMS could be measurement communities as presented by Bauer et al. (2004). These communities can be physical or virtual, but at their heart lies an idea of a group of people who are seeking to understand what drives performance in their respective organization. Bauer et al. (2004) give an example of an organization that cascaded its scorecard through its intranet and this way encouraged very open and honest discussion. In a research by Jääskeläinen & Sillanpää (2013) individual power figures facilitating the work and ensuring that certain tasks were done in time were the key players in a successful PMS. Their successful PMS implementation created a positive attitude towards measurement and the different units were eager to compare their results and discuss the reasons behind figures.

The enabling effect can also be enhanced by making sure that the measures are easy to understand and that the users know the appropriate actions to take when a problem is identified (Kerzner, 2011, p. 106). Adler & Borys (1996) talk about the repairing effect of the system; the users have the ability and permission to act in case of a breakdown or a problem. Bourne et al. (2005) found a significant difference between high and low-performing units in how they use the PMS and its feedback. Higher-performing units tended to use the measures more interactively, continuously moving between interrogating the performance data and

taking action on its basis. They also discussed in more detail how the business units operate and explained how aspects of operations, people and performance interact.

2.3.3 Managing the Evolution of Measures

It is common that especially over time measurement systems become very complex and difficult to interpret. Often new measures are added but old ones are rarely deleted and the system becomes less valuable than it was originally intended. Companies simply do not have processes for managing the evolution of their measurement systems. (Neely, 1999; Neely et al., 2000) It has been noted that countless managers suffer from data overload and numerous companies produce redundant performance reports that are never actually used (Neely, 1999). The review and update process of a PMS is difficult and complex as it involves the PMS users, assessment of performance measures, establishment of targets, and questions about data availability (Braz, Scavarda, & Martins, 2011). However, when successful it turn the PMS from a static system into a dynamic one that takes into account changes of priorities and captures a wide range of performance outcomes (Henri, 2010).

PwC Corporate Reporting Guide (2007) states that performance measures should be relevant over time. They suggest that as strategies and objectives change it is necessary to adjust the indicators accordingly; new metrics may also give deeper understanding of the business and challenge current assumptions (Bourne et al., 2000). Overall, the measures should be in line with environmental and organizational needs (Bourne et al., 2005). It is also important not to only let the metrics evolve over time but proactively design and manage them (Melnik et al., 2004; Neely, 1999). If the metrics are not revised or are revised incorrectly, we may encounter a situation where what the organization wants to achieve and what it measures are not synchronized with each other (Melnik et al., 2013).

Bourne et al. (2000) define essential elements for an effective review and development of a PMS. The PMS should include an effective mechanism for periodically reviewing and revising targets and the complete set of measures as well as a process for developing individual measures. In addition they suggest that the system would be used to challenge the strategic assumptions leading the system. Ferreira & Otley (2009) note that the review and change process of a PMS should apply to both the design infrastructure (management control techniques and key performance measures) as well as the way performance management information is used (which aspect are emphasized and which are not). In any case the changes in indicators and how they are measured and reported should be clearly explained to ensure

understanding of measures through the refresh process (PwC Corporate Reporting Guide, 2007).

Andon, Baxter, & Chua (2007) found in their field study that performance measures often evolve while people try to make them better, as if the measures would drift from one reincarnation to another. In addition they noticed that the measures transform as people see new aims in them. Wouters & Wilderom (2008) suggest a similar effect but have shaped it into an *experimentation* approach to developing measures. By this they mean the first development of a performance measure, which is followed by subsequent testing and refinement, to arrive at a measure that is a valid, reliable, and understandable indicator of performance in a specific local context. Wouters & Wilderom (2008) also state that the refinement should include conceptualization, definition, required data, IT tools, and presentation of the measures; no measure is hardly ever “right” straight away and the conceptual and detailed implementation requires fine-tuning. This approach is not without problems, as the study by Andon et al. (2007) shows. In their case the performance measurement project was eventually shelved without proper results. The problem is that without proper control the measures do not take the shape of a consistent measurement system but instead remain as loose components.

When planning the revise step, Henri (2010) reminds that more revisions may not always be better. A dynamic PMS requires human, technological and financial resources to periodically refine performance indicators. This includes analysis of current measures, deletion or revision of them, identification of new information needs, and the development and documentation of the new indicators. In addition, unnecessary changes may cause confusion and a possible lack of motivation among employees as well as disrupt the collection of longitudinal data to analyze trends and test causality of the chosen strategy. Hence, the review process can be seen as a trade-off between the benefits and the costs discussed above. (Henri, 2010) These factors implicate that the revision process should be well planned and not to be thought only valuable in itself.

2.3.4 Information Organization, Reporting and Analysis of Performance Data

Good balanced metrics can save many hours of wasted working time and make it more likely that managers are able to keep the organization on track towards reaching its goals. However, good reporting and analysis of the results are crucial to making the right business decision.

(Brown, 1996, p. 171) As Brown suggests, the way information is organized and presented, and how it is analyzed is critical to providing proper basis for decision-making.

Research by Lipe & Salterio (2002) suggests that information organization and measurement grouping can have a significant effect on the perception of the decision maker. Their research was based on a BSC environment where they found out that when multiple measures within one BSC category show consistent performance, managers' evaluation judgments are reliably different from evaluations made without the grouping. Cardinaels & van Veen-Dirks (2010) found support that BSC organization can also affect how financial measures are perceived when compared to a non-formatted scorecard. Banker, Chang, & Pizzini (2004) found evidence in their study that the availability of strategic information to managers affected how they evaluated different measures, relying more on strategically linked measures. They also suggest that measures common to different processes are relied on more than unique measures. Other research in different setting has given similar implications; for example financial statement presentation format may affect the way users perceive the information (Hopkins, 1996; Maines & McDaniel, 2000). The background for this is in cognitive psychology whose research shows that information processing is affected by information organization and by hierarchies and relations between information items (Kleinmuntz & Schkade, 1993; Payne, Bettman, & Johnson, 1993; Schkade & Kleinmuntz, 1994).

Based on the research it is difficult to give any unambiguous implications how the presentation format affects judgment in each setting as the effect seems to be very context-specific. Research by Cardinaels (2008) suggests that it is also affected by the expertise level of the user and hence the effect works in both directions. Regardless, it is important to note that it does matter and may well have a significant effect on how the measures are perceived by causing bias towards some measures or signaling real or false relationships between measures within the measurement template.

Information can be presented in many ways such as tables, graphs and information dashboards (Few, 2006). After quickly reviewing the measure, management should be able to assess and make necessary decisions related to the measure and its performance (DeBusk et al., 2003). It does not need to provide all the necessary details to take action, but it works if it catches attention and points the direction with only a glance (Few, 2006). Brown (1996, pp. 172–174) favors strongly the visualization of measures. He states that traditional tables with multiple columns of figures are often difficult and slow to read and analyze. Brown suggests

graphs as the best way of presenting data as they provide more information on levels, trends, and variability, about information that is more difficult to pull out of a table of statistics. Graphs also emphasize relationships in the data and provide a more holistic view by presenting the data at a glance (Cardinaels, 2008). However, it is good to remember that graphs do not support looking up individual values as efficiently and precisely as tables (Few, 2006).

A common way to organize performance measures is to present them as performance dashboards. These dashboards are like the instrumentation on a car dashboard or on the instrument panel of an airplane. The idea is to give management a quick view of organizational performance, “i.e. organizational performance at-a-glance”. (DeBusk et al., 2003) Despite the exact format, Brown (1996, pp. 171–174) defines three important factors when presenting and reviewing data:

1. Level
2. Trend
3. Variability

Level refers to performance in the most recent period compared to goals, past performance, competitor’s performance or benchmark organizations. Trend involves looking at past data points to see improving, worsening or flat performance movements. Variability, such as a peak or drop in performance, can alert about problems. (Brown, 1996, pp. 171–174) Target setting was already discussed earlier but common problem in presenting the data is not to include comparative statistics or goals related to the measures. As said these are important because they tell about relative performance and point out the need for improvement. (Brown, 1996, p. 173)

Performance reporting created for analytical use should support interaction with the data so that it enables finding out the causes for the figures and enables drilling down into the underlying details (Few, 2006). This way the route from performance measure to action to cause and effect is consistent and explicit. There are countless of factors to take into account when presenting and analyzing performance data. Perceived from the literature, there is no single correct way to perform this. As Few (2006) suggest, the most important thing to remember is, however, that despite the format, communicating the data efficiently is the overall goal, which surpasses the format.

3 RESEARCH METHODOLOGY

This section describes the methodology used in the thesis. It also explains the research approach used to gather and analyze the empirical material.

3.1 Choice of Methodology

The thesis is conducted as a qualitative research. Alasuutari (1995, p. 11; 2011, p. 38) defines qualitative research as research where the data, the material is considered as a totality. This is as opposed to quantitative analysis where the argumentation is based on average relations and differences between distinct variables. He also continues that in qualitative research the data is observed from a certain theoretical and methodological point of view. We can say that in qualitative business research the business-related phenomenon is studied in its context and this way new knowledge on how things work in real-life can be produced (Eriksson & Kovalainen, 2008). Based on the research we should be able to give an interpretative explanation of the studied phenomenon with an answer that should not be in contradiction with the observations of the case (Alasuutari, 2011, p. 88).

The empirical materials for the thesis are company documents supplemented with interviews, meeting and workshops. Based on the context, the choice to use qualitative methods instead of quantitative is justified, as these would be difficult to transform to statistically measurable variables. Observing and analyzing them as a whole reflects well the theoretical background of the thesis.

The empirical analysis is based on a single case study. The choice for this derives from the thesis being an assignment to the case company. Hence, it is natural not to include other companies or cases in the thesis. Yin (2009) suggests that a case study is the preferred method for research when it seeks to explain some present circumstance and the case is a contemporary phenomenon within real-life context. Eriksson & Kovalainen (2008) add that with case studies the research questions are always related to the understanding and solving of the case. Successful case studies offer new and fresh perspectives, observations and thorough interpretations of research objects (Lukka & Kasanen, 1995). These kinds of definitions suit the thesis case well as there has been uncertainty around the current situation in the case company which opens up the possibility for research, the approach and context provide a fresh perspective for the research and understanding and solving the case is one of the key aims of the study.

Cases studies have been accused that they do not give basis to generalize the results to other environments (see discussion McKinnon 1988; Lukka & Kasanen 1995; Yin 2009). However, it can be thought that they provide the possibility to explore and understand how the certain case works as a configurative and ideographic unit of analysis (Eriksson & Kovalainen, 2008). Kasanen et al. (1993) also state that it would be difficult to imagine a case situation and a solution which would suit well the case company but not other companies in approximately similar contexts. Therefore the goal of this study is to explore the case in its context, create new knowledge surrounding the subject in this environment and provide practical usability of the solution.

The thesis can also be seen as an interventionist research. It is a cluster of research approaches where the researcher is immersed with the object of the study and does kind of a field experiment without complete control over the design but acts together with the host organization, observes processes and analyzes findings in view of relevant literature. The advantage here is that the researcher has the possibility to obtain more subtle and significant data than would be possible with more traditional research methods. This gives understanding of what is going on in the case organization and provides understanding of theory-in-use. (Jönsson & Lukka, 2006)

3.2 Constructive Research Approach

The research approach is constructive by nature. Kasanen, Lukka & Siitonen (1993) define constructive approach in management accounting as problem solving through the construction of models, diagrams, plans etc. Jönsson & Lukka (2006) qualify constructive research as one of the disciplines under interventionist research. Constructive research usually narrows down the gap between academic research and practical applications in business (Lukka, 2001). The constructive approach is a natural choice for this case study, as the assignment from the case company requires this kind of constructive development of performance measures. Kasanen et al. (1993) also encourage researchers to this kind of relevant and useful problem solving.

There are seven steps in a constructive research process (Kasanen et al., 1993; Labro & Tuomela, 2003):

1. Find a practically relevant problem which also has research potential
2. Examine the potential for long-term research co-operation with the target organization
3. Obtain a general and comprehensive understanding of the topic

4. Innovate and construct a theoretically grounded solution idea
5. Implement the solution and test whether it works in practice
6. Examine the scope of the solution's applicability
7. Show the theoretical connections and the research contribution of the solution

One of the key ideas in constructive research is to create solutions that provide new knowledge to the existing literature (Lukka, 2001). Kasanen et al. (1993) state that it is essential to tie the problem and its solution with accumulated theoretical knowledge. The theoretical contribution can be achieved in two ways (Lukka, 2001). It can provide a new way of achieving a certain objective with practical relevance (Lukka, 2001). In addition it provides the possibility to illustrate, refine or test theories (Keating, 1995). In the thesis this is done by connecting the empirical analysis to the theoretical background presented in the first part of the thesis and testing how existing frameworks fit the case context and what input the case can provide to refine the theory. The connection is important as it supports the claim that the construction would also work in other instances than its original field (Kasanen et al., 1993). Labro & Tuomela (2003) mention the solution's applicability as one of the key steps within constructive research. With this examination and theoretical connections, we can provide new research contribution. The earlier theoretical propositions help and guide data collection and analysis in the process (Yin, 2009). From these points we can see that the research works in both directions and that the theory and the empirical results are in constant interplay.

Alasuutari (2011, p. 84) defines qualitative data as very rich in expression, many-sided and complex. In the thesis the empirical material is based on existing company documentation regarding performance measurement and key performance indicators. This includes the recurrent performance indicators and other documentation related to them. The material is accompanied with interviews of developers and key users of the measurement information. This is done to understand the causalities between measurement and performance management. Alasuutari (2011, pp. 87-88) suggests that qualitative material can be seen as one piece of the studied phenomenon and it is important to be conscious what part of the whole it represents. He also argues that the data should be collected so that it enables observations from multiple perspectives.

The aim is to analyze the existing performance measurement system in its context by reflecting it against the previous research and develop it from its current state accordingly. In addition the communication and reporting of performance measurement is analyzed and

developed together with the process team in the case company. Yin (2009) states that case study researchers need to cope with diverse situations with many variables of interest which makes case study research difficult. As there are no ready-made solutions for this context in the previous research, the solution is constructed by deriving it from the earlier findings and combining it with the reality of the processes in the case company.

The research process and my own contribution in the case company functioned so that I worked on the performance measurement system issues with the process team. This offered the team outside perspective to the processes but in addition I took part in practical tasks of developing the measurement system itself. The research process began with an analysis of the current PMS. This was done with the help of existing documentation about the processes, which were then supplemented with interviews of the key users/creators of the PMS to get more perspective into the system entity. After the base analysis was conducted the issues were further discussed in a workshop, which offered further insight into the processes. The latter half of the thesis process introduced more practical tasks into the picture. Here I worked on specific PMS issues and did practical development work in line with the performance measurement theory. This included process documentation, performance reporting development and brainstorming ideas how to integrate the different organizational contexts better into the measurement system. During this half many meetings with the process team members were held to discuss and develop specific issues. Consequently, the perspective moved to a more detailed level focusing on certain issues instead of analyzing the big picture even though this was constantly kept in mind. From the case company perspective the final result offers an overview of the performance measurement literature, practical advice to PMS design and use, outside perspective to the current processes as well as the construct itself, which is aimed to better meet the current process needs. In total the research period was slightly over four months from September 2013 to January 2014.

One of the limitations of the thesis is that because of the timeframe of the study the practical usability of the construct cannot be tested as fully as I as the researcher would like to. This kind of a practical test can be seen as an important indicator of the usefulness of the managerial construction (Kasanen et al., 1993; Lukka, 2001). It proves that the research process has been successful and that the construct is technically feasible (Lukka, 2001). The construct can be tested with a *weak*, *semi-strong* and *strong market tests* (Kasanen et al., 1993). The weak market test is passed when a manager is willing to apply the construct to his or her actual decision-making problem. The semi-strong market test requires that the

construct is widely adopted by companies and strong market test proves that with the help of the construct the companies produce systematically better results than those who are not using it. (Labro & Tuomela, 2003)

The weak market test has been the guiding principle with the thesis as within this timeframe it is the only one that is applicable. A limitation to the research is that a longer research period could have provided additional information and more extensive interaction between theory and empirical analysis, as there are most likely some issues that were not possible to anticipate within this schedule.

3.3 The Case Company

The case company wishes to remain anonymous and will therefore be called Green Inc. in the thesis. The company is a large, publicly traded, industrial company. It has a long history in Finland and Sweden, but operates today globally in more than 35 countries. It consists of the parent company and multiple of its subsidiaries operating in different countries. In the thesis Green Inc. refers to the whole group without division between the group companies. The company head office is located in Helsinki.

Within the case company the research focuses on a group level Finance Delivery unit, and more specifically on their Purchase-to-Pay (PtP) process. It is a set of processes that covers different accounts payable and purchasing functions: creation of purchase requisitions and orders, goods/services receiving, invoice receiving and matching, and invoice booking. The group's Purchase-to-Pay function produces, coordinates and ensures quality of these processes while much of the actual practical work is done by the company's business units, outsourcing partner and accounting helpdesk, who provide help with process issues. PtP function concentrates on accounts payable and accounting side of purchasing and hence the actual purchasing of goods or services is not in their scope. As mentioned, the case company operates with an offshore outsourcing partner, which is called APP Services in the thesis. APP Services handles from abroad the everyday accounting operations and straightforward reporting tasks of accounts payable, with more demanding reporting left to country specific accounting services and Group Accounting and Reporting unit.

The PtP team had noticed a need to develop performance measurement and process's current key performance indicators (KPIs) from their present state to better meet the needs of the process. The thesis is outlined based on this function and hence concentrates on performance measurement and management of these processes only.

4 EMPIRICAL ANALYSIS AND THE CONSTRUCTIVE MODEL

In this part of the thesis I will describe the case in more detail, analyze the issues with the current performance measurement system in the case company, present the constructive model and discuss the interplay between the theory and findings.

4.1 Case Description

As mentioned, the Purchase-to-Pay function coordinates and ensures the quality of the PtP processes. The process environment is very diverse, as it consists of several different stakeholders operating from different locations. The PtP team members themselves are located in three different countries (Finland, Estonia and Germany). The group companies and business units are situated in several different countries where Green Inc. has operations. The Accounting Services Helpdesk assisting with process issues is located in Estonia. Additionally, the accounting outsourcing partner APP Services operates from another country where Green Inc. itself does not have any operative functions.

Figure 6 illustrates the different stakeholders affecting the PtP processes. Besides PtP team communicating with all of the other groups, there is also constant communication between all of the stakeholders without direct contact from the process team. Most of the communication is done virtually because of the long distances.



Figure 6 Purchase-to-Pay process stakeholders

As said, Purchase-to-Pay is related to several accounts payable and purchasing process steps. Hence, it is affected by a variety of people along the process. The process starts when something is purchased, either by business unit personnel or purchasers. The purchases are

made through purchase requisitions/orders or directly with the suppliers. When the product or service is received, it is recorded. After receiving the invoice the purchase order, receiving report and invoice are matched, which is called three-way matching in accounting. Next, the invoice is booked and eventually paid. There are different alterations of the process, which may exclude some steps or include full or part automation of processes.

In the business units the processes are affected by purchasers, warehouse personnel, people checking and approving the invoices as well as controllers and purchasing managers who are also the main contacts for the communication from the PtP team. The outsourcing partner processes the invoices and performs matching of the invoices. Problems with the processes and invoices are handled with the help of the accounting helpdesk or directly between the business units and the outsourcing partner.

Besides the general PtP process goals of coordinating and ensuring quality of the processes, there is ongoing an additional development project related to the processes. PtP development project is two-year initiative expected to be completed by the end of 2014. The project focuses on systematic improvement and optimization of Purchase-to-Pay processes in the group companies. In practice it means that the project has separate goals whose performance is regularly assessed. The organizational objective behind the project is to improve efficiency and reduce costs, and it is part of a bigger cost-cutting program.

Current Finance Delivery organization has gone through major changes during the last part of 2013 due to cooperation procedure and organizational restructuring. Previously there had been a separate Finance Development team working on the PtP development project but with the current organization the PtP team handles the project as well as the reporting tasks of PtP. The change has caused some alterations to the previous work responsibilities and positions. During the making of this thesis, the new team was still partly finding its place and the final work division was ongoing.

The organizational change also affects the focus of the PtP process. While Green Inc. operates in more than 35 countries, the PtP focus has been on Finland, Sweden, Germany, Belgium, Spain, UK and France. These are the countries in the scope of the development project and until the project is finished, it receives significant attention from the process team members. The development project scope is limited to certain countries due to restricted resources and the fact that some units operate in remote countries and use separate information systems and processes, which would be difficult to include in the same process entity.

Currently the PMS of PtP works as a warning tool of problems with the processes and as a tool to enable process improvements. The figures are followed by the PtP team members, alarming changes are investigated and possible problems are solved in cooperation with the different stakeholder groups. The PtP team also creates development initiatives and communicates these to the stakeholder groups to accomplish the development project goals. All business units in the scope of the development project also receive a separate presentation of the monthly figures so they can monitor development and plan future actions also by themselves. The development actions are made into a task list form and the progress is followed in cooperation with business units, outsourcing partner and the PtP team. Currently the focus is on increasing the quality and amount of purchase orders, reducing process issues, increasing e-invoicing compared to traditional paper invoices and ensuring timely payments of invoices to avoid late payment costs. The actions are aimed to increase automation and reduce errors with the processes.

The current performance measurement system for the PtP process comprises of several different measurement reports. These are created and distributed once a month with no real-time measurement, as updating the figures and reports requires some manual work. The base data is retrieved once a month from the information system and processed with multiple formulas and calculation logics to produce the final database for the process use. The reports have been created and are used for different purposes. There are three main tools used: PtP Performance Report, Monthly KPI Summary Report and Outsourcing Partner KPI Report. The different perspectives of the system are illustrated in Figure 7.

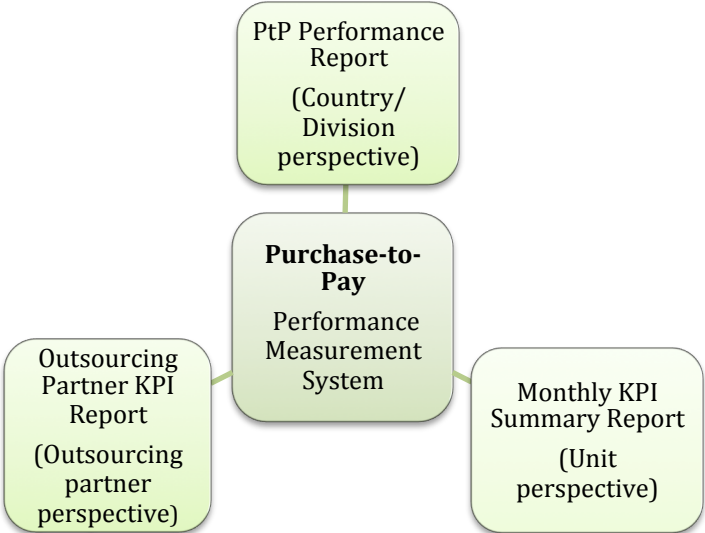


Figure 7 The relationship between performance reports

PtP Performance Report was created in 2010 to measure the whole PtP process from several different perspectives. This was at the stage when the outsourcing partner cooperation began and the processes changed significantly. Previously there had been country specific accounting centers but in 2009 the functions were centralized and outsourced. The focus of the report is on country and division level measurement because this was seen important for the stabilization of the processes when the cooperation with the outsourcing partner began. The report consists of 16 measures with multiple perspectives totaling to 60 to 70 pages of figures/charts per month. Examples of measures are *on time payment*, *cost of late payments*, *invoice turn-around time*, *autoposted invoices*, *invoice delivery turn-around-time* and *e-catalogue usage*. These metrics measure the performance and quality of the processes.

Monthly KPI Summary Report came into the picture with the development project. It measures progress of the project goals as well as process efficiency. The focus is on business unit level because the development actions are planned and carried out together with the units. The report has 6 main KPIs and 7 secondary KPIs. In addition there are extra data figures to complement and help calculate the KPIs. The report has some duplicate indicators when compared to the PtP Performance Report but also many additional ones as the process focus has changed since 2010 when the Performance Report was introduced. Examples of KPIs are *invoice autoposting rate*, *late payment costs*, *number of queries*, *share of non-purchase order invoices*, *paper invoice rate* and *internal invoice issues*.

Outsourcing Partner KPI Report is based on the contract made for the outsourcing relationship. The KPIs that are followed are directly linked to the outsourcing contract requirements and the KPIs indicate how well the partner meets the agreed service levels. APP Services supplies the report and the reporting process is therefore not directly in the hands of Green Inc., although they perform the follow-up of the figures.

The units that operate in the scope of the PtP process are using SAP as their enterprise resource planning system. The performance measurement is based on invoice data that is fetched from SAP to a Microsoft Access database from where it is further analyzed with the help of Microsoft Excel. No separate software tools designed specifically for performance measurement are used in the process.

4.2 Issues with the Current Performance Measurement System

The PtP team had already identified several problem areas with the current performance measurement system. The general view was that the whole measurement ensemble did not perfectly capture and measure the needs of the process. The team acknowledged that as new performance measures were added and old ones were updated, the processes were not documented properly. There had also been problems with the base data for the process; there were problems with errors in the data and hence issues with the data validation. The communication with the units had not worked as well as was originally desired – the aim was to better communicate the importance of improving the processes and how to motivate the different stakeholder groups to work towards the PtP objectives.

To analyze the current situation I received all the existing material about the performance measures and reporting. These included the current performance reports, business unit performance package, raw data report, all existing documentation about the measures and development project target documentation. These documents were then supplemented with short discussions/semi-structured interviews of the main users and creators of the reports to understand the big picture behind the measurement system. Framework by Ferreira & Otley (2009) was used as the basis for the discussions because it offers 12 questions related to ‘what’ and ‘how’ of PMSs¹ and helps assess the design and use of the system. The main questions were: what are the primary objectives of the process; what are the key measures in the PMS; how the reports are created; how the users are using the reports; what are the major tools in the system; what are the biggest issues of the system; is there a review process for the measures; how the information is distributed and how the communication with the different stakeholder groups works. I interviewed 7 people in total with titles of a specialist, controller, two managers, two directors and the vice president of Finance Delivery unit. The interviews took 1-1,5 hours per interviewee. Even though the main themes were defined, the discussion was let freely to float towards the subjects that were in the interviewee’s interest and own special area. It was noticeable that some interviewees look the measures from a more general perspective and some were very specific about certain issue areas. This seemed to reflect their positions and daily duties. However, in general the views were very consistent and pointing at the same direction. Hence, at the greater level there did not seem to be any conflicts between the views of the main PMS users and their objectives were uniform, which helped to assess the issue areas.

¹ Questions can be found in Appendix

Based on the discussions and documents I prepared material for a one day KPI brainstorming workshop where we discussed the themes further with the PtP team. From this session I then summed up the different themes that were the areas with major issues. This worked as the basis for the creation of the constructive model.

4.2.1 The PMS Altogether and its Focus Areas

Analysis of the PMS as a whole was the starting point for the process. The idea was to map the positions of the different KPI reports and chart how they are used and how they interact with each other. This was done to figure out the key measures and clarify if there are any unnecessary or duplicate items in the current system.

As described, the PMS consists of three different KPI reports. PtP Performance Report was commonly regarded as quite extensive and complex by the process team. The vice president pointed out that the focus of the report was useful when it was created in 2010 as it was used to observe the PtP processes in different countries after the cooperation with the outsourcing partner began. However, since then the focus has shifted and this point of view is not seen as significant anymore. Other users of the report noted that there are some interesting figures but that the whole report is not coherent as there are many figures that are redundant or measured from unnecessary or even wrong perspectives. There was a common view that the report needed reviewing and modification.

Monthly KPI Summary Report was acknowledged to be the most important tool for the current process and it is the one report that mostly affects the process team members' daily work. It is fairly well in line with the development project targets and hence supports the current focus of measuring business unit performance. This report is also the basis for the communication with the business units as the performance package delivered to the units is based on this report and its figures. The report covers many functions but the process team had also noticed that some changes were required as for some figures the current calculation logic was not completely correct and there was perceived to be a need to add some additional measures. The process team had also noticed that the report had evolved on its own. This means that some figures had been added without managing and considering the report as a whole. It was quickly noticed that the report was not completely coherent and that some reorganization would be useful for the clarity of the report.

The Outsourcing Partner KPI Report received mixed comments from the users. The general idea of the report was seen important as it could be used as a tool to assess outsourcing

partner performance and better manage their actions as well as control the outsourcing contract. However, in reality it was acknowledged that as Green Inc. does not have control over the report and it is based on contract goals that are fairly easy to meet, the end result is that it always reports excellent performance. It was admitted by the unit management that looking at the report is fairly pointless, as it does not actually indicate the real performance of APP Services.

In addition to the existing reports, the PtP team faces some other reporting requirements from time to time. A steering committee is controlling and following the progress of the development project and their needs require additional figures, which have been so far calculated manually when needed. The business units also sometimes pose additional questions or requests related to the figures, which are then answered separately.

The current reporting schedule works so that the reports of last month's figures are available around the middle of the next month or slightly earlier. It was acknowledged by the process director that this schedule is somewhat sluggish and does not enable making changes to improve current months figures. Therefore the influence of actions is seen with a delay. However, from general process perspective it does not require real-time measurement like for example many manufacturing processes, as the development initiatives' scope is months or even over a year, and the changes require time as well. Nevertheless, slightly faster reporting timetable could be beneficial in some cases.

4.2.2 Responsibilities, Roles, Documentation and Data Validation

With the recent organizational transformation the roles and responsibilities of the team members have somewhat changed. It was noted that active management of measures has been previously lacking in some aspects, as it has not been completely clear who has had responsibility over what measures and hence the overall "ownership" and control of measures has been somewhat missing. In addition a clear process for refreshing measures has been missing, which has led to the duplicate or unnecessary reporting.

There has also been obscurity who is responsible for additional ad hoc type of analysis that is needed every once in a while and requires data processing at least on some level. This has been done in line with the available resources. This is not necessarily a problem but suggests thinking whether there should be more defined roles in place.

The data for measurement system is produced by a separate team of data analysts operating from Estonia. They work in a different process line and are not part of the PtP team. Data analysts' role is to create the performance reports according to certain calculation logics so that the PtP team would have the final reports ready for analysis. The process when something is wrong or needs to be changed is somewhat complicated because the issue needs to be first communicated to the data analysts and then solved in cooperation between the teams. As the team members' competence is differently focused, communication and documentation become the key elements of successful measure development and problem solving.

One of the major issues with the PMS has been that all of the measures have not been properly documented. Documentation for the older PtP Performance Report had been created but as one of the team members was studying the documentation, she noted that some of the definitions were not accurate or they had been changed after the initial implementation of the measures. Hence, the documentation was out of date. Team members had also perceived that an even bigger problem was the documentation for the central Monthly KPI Summary Report as this was missing completely. The report was initially created by an outside consultancy company from whom the template and knowledge was transferred to the Green Inc.'s data analysts. In the process no sufficient documentation for the measures was done. The missing documentation had already caused confusion about what certain figures actually comprise and that in one place a figure was calculated differently than in another although ostensibly they were identical.

The missing documentation was also seen as a problem to data validation. There had been several issues with the data calculation logics and some items were categorized in wrong ways causing the performance measures to be falsified. Through discussions it was noted that the main reason for this was that the documentation was not adequate and adequately reviewed. As changes were made to the system, the process of verifying the measures was not sufficient. The missing documentation also hindered the validation of the base data, as it has been difficult to point out where the problems are in the process. Here it has to be noted though that problems can arise also from changes to the system from outside the process team so in this sense not everything can be anticipated.

4.2.3 Communication with the Business Units and Employee Motivation

The development project had received a mixed reception from the business units. PtP members had noted that there were individuals who were enthusiastic about the improvements

and really put effort into the development processes to make things happen. But there were also some units who thought that there was no need for improvements as they were already performing so well or it was otherwise seen trivial. Some had more indifferent attitude towards the project and chose a more distant role.

One key theme that was brought up in the discussions is motivating the business units towards the process improvements. As the PtP development project focus is in improving the process efficiency, this is the key factor when project targets are pursued. As noted, the business units have different attitudes to following progress and making changes to current processes. What complicates matters is that the PtP team does not have any formal control over the business unit personnel. If they are not inclined towards the development efforts, PtP team does not have coercive ways to control them. They can only provide support and make things easier for the business units.

It was acknowledged by the PtP team that there is a slight problem with the incentives for the improvements. There are no direct monetary rewards linked to meeting the project targets from business unit perspective as the employees are not directly assessed and rewarded. When asked what is the incentive for an employee in one of the business units to dig into the processes, find problem areas and solve them, there was no clear answer. From upper level business unit perspective there is an incentive to improve the processes, as there are internal costs for services and making the processes more efficient would lower the costs of the business unit. However, this has not been directly communicated to the units and it was acknowledged that this might not be a notable incentive for single employees as they are most probably not concerned with the business unit level costs.

Another theme that came up was how to encourage the business units towards more independent work. This is related to the motivational aspects but also to offering tools and processes to independently solve problems and improve results. As PtP team has limited resources, they are not able to follow all of the figures, drill down to the data and point out all of the steps for the units to take in order to make improvements. The units need to be encouraged to do this on their own. To solve this problem, the units were introduced with a better data resource to drill down to the fundamentals behind certain figures. This was done just before this thesis project began so during the research process it was still in experimental phase.

4.2.4 Information Organization and Visual Presentation

When going through the different reports I noticed that every one of the three reports is constructed and presented in a different way.

PtP Performance Report is a PDF file comprising the measures as numbers and charts. Most of the measures are presented on multiple pages with each one having a slightly different perspective. The division is done between months, countries and business areas. The report is normally 60-70 pages long and has an extensive amount of information. The users of the report found it fairly easy to read and interpret as the charts and figures are presented side by side even though otherwise the amount of information was overpowering.

Monthly KPI Summary Report is in Excel format and much more interactive than the PtP Performance Report. It enables easy access to every unit's data and also makes possible to drill-down to the data behind the figures. However, in this report the data is presented mainly as numbers instead of visual charts. The data is spread across several spreadsheets but is still in a fairly easy-to-read format. From these numbers the process team derives the package sent monthly to the units, which in addition has some of the numbers presented as charts for easier interpretation. The business unit set is in PowerPoint format for more simple presentation.

It was actually noted in the interviews that some of the project team analysis has been made through the business unit information package even though it was not originally designed for this use. The reason is that it offers the same information in a format that can be analyzed with a glance (the charts) and also shows changes and trends in the data more clearly than plain numbers. It was even noted by a manager that a significant change in one of the figures could have been ignored if it had not been so clearly present in the chart.

Outsourcing Partner KPI Report is also in Excel format. It includes an easy-to-read summary table of all the key figures and their performance with color-coded figures. It has a separate section for all the raw data behind the figures for more detailed observation. The report did not inspire many comments from the interviewees, as it is not widely used. The format for the report currently comes from the outsourcing partner as given.

4.2.5 Managing the Outsourcing Partner

The PtP team acknowledged certain issues with APP Services. Even though the performance seems outstanding in the figures, the team has not been completely satisfied with the actual performance of APP Services. They perceived that the current measures measure wrong

things, are not demanding enough and do not encourage striving towards better quality. Hence, it was decided that new measures were needed to better assess the partner performance and manage the outsourcing relationship.

One major problem with the measures is that they have been unchangeable as they are based on an existing outsourcing contract. Therefore there has been no obligation to change them without a common will. As this thesis was done, a new outsourcing contract was made. Unfortunately from the thesis point of view I was too late to contribute to the new performance measures but they were created by the PtP team to better reflect the actual processes. The new measures are significantly more versatile and comprehensive than the previous ones.

Otherwise the communication with the outsourcing partner is fairly straightforward. PtP team is responsible for making the process instructions to the outsourcing partner who then works in accordance with these. The instructions are updated when something changes or corrections are needed. Issues and errors with the processes are analyzed and communicated to the outsourcing personnel and discussed to improve quality. The outsourcing partner also offers some process analysis to point out potential problems.

4.3 Construction of the New Model

To construct the new model, the existing PMS was evaluated to identify, describe and analyze current performance measures and processes. The issues with the current system were identified and the construction of the new model was done together with the PtP team. In practice this meant several meetings and brainstorming sessions with the process team members. I participated in the hands-on development of the PMS by doing part of the practical development work.

The amount of measures and their organization was chosen as the starting point for the new construction. In the existing PMS the measures were divided between several different reports with several different perspectives and presentation formats. The new premise was to create a performance measurement report, which would include all the essential measures in one place with easy understandability and quick readability.

The goal was to create a template, which was ideal for measuring the process needs but also realizable with the current reporting tools. So the connection with reality was in that sense held on to even though the ideas were freely bounced without system limitations.

With the new model the reporting is simpler:

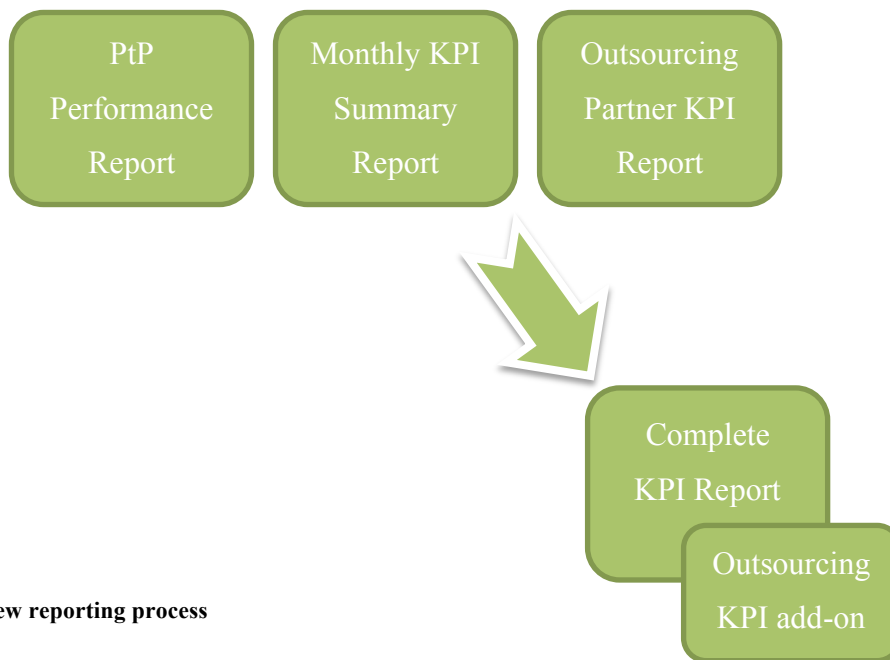


Figure 8 The new reporting process

In this ideal situation the measures can be easily found in one place in one format, which enables easy access to all essential figures. In this model the need for different perspectives is covered but within one reporting template. The resulting report is achieved by merging the two internal reports (PtP Performance Report and Monthly KPI Summary Report) and integrating an outsourcing measurement add-on to the reporting template. The outsourcing KPI measurement is likely to be handled by the outsourcing partner also in the future so I am anticipating here that it cannot be completely incorporated to the main KPI report. Hence, it is pictured as an add-on.

In addition to clarifying the reporting template, I also noticed the need to assess which measures are necessary to the current PMS. It was realized also by the PtP team that there were several unnecessary or duplicate measures across the different reports. The creation of the new model offered an excellent opportunity to eliminate the futile ones. In the old reports, the PtP Performance Report had 17 measures, Monthly KPI Summary Report had 6 main KPIs, 7 secondary KPIs and around 20 other measures used for background data, and Outsourcing Partner KPI Report included 3 KPIs with 3 additional process indicators.

When creating the new template the goal was to choose which measures are the most important indicators of performance and label them as KPIs and use them as the basis for the charts. Other measures would be labeled as background data or secondary KPIs emphasizing

their position as less important but good-to-know figures. With all the data in one place and with a consistent reporting template, the refining of measures would also be easier in the future. The new report also introduces a more coherent and complete data resource. This means that the data section has some additional information that is not currently directly used in the KPIs but could be useful in the future if the view is expanded or changed. This also better reflects different perspectives to the measures and creates a better base for ad hoc type of questions from stakeholders because of better availability of data.

Together with the process team, we identified the key figures and it was viewed that it is truly unnecessary to continue reporting many of the previous items, as they are not useful anymore for the PtP team. The new template did not change the focus of the measurement itself. The development project targets drive the emphasis of the process and there was no need to change this as currently they represent the most important improvement areas for the process. The presentation was refined so that it focuses on the most important KPIs and leaves the other figures in the good-to-know category to be available when needed.

It was also discussed whether the metrics actually reflect what is wanted to be measured or is there a possibility of measurement dysfunction in the PMS. No such effect could be identified or has been noticed in the past. It is likely that because the measures are pretty straightforward and do not encompass any negative trade-offs among the processes, there is neither a great risk of steering the processes in the wrong direction because of measurement dysfunction.

Overall there are 9 figures that are emphasized and presented visually (KPIs):

- Different invoice types
- Total number of invoices and queries for unclear invoices
- Query rate
- Query breakdown between helpdesk and business units
- Late payment costs
- Purchase order coverage
- Invoice autoposting rate
- E-invoicing rate
- Purchase order perfect match rate

Here below is an overview of the new measurement template (example template with random-generated figures and excluding some charts/data).

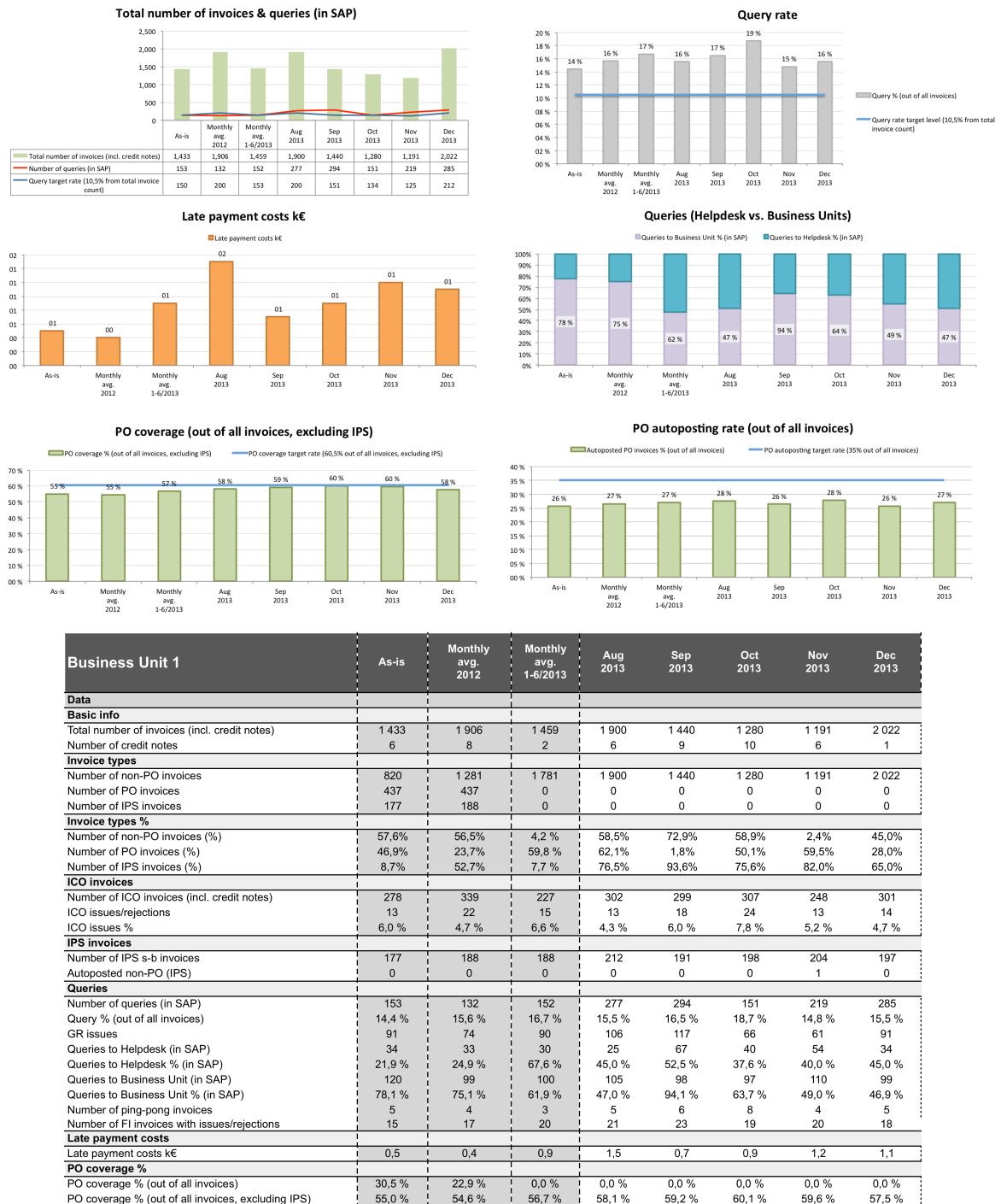


Figure 9 The new PM template

The mix of measures represents both leading and lagging indicators as in the categorization by Neely et al. (2000). Some of them present results such as cost arising from invoices paid late or queries made for obscure invoices, others like purchase order coverage aim to increase

the overall quality and automation of the processes. These different measures try to catch the critical aspects of the purchase-to-pay process.

A more graphical presentation format for the measures was chosen to the final reporting template compared to the earlier reporting. This is because it better meets the need to be able to evaluate performance at-a-glance without the need to go through all of the figures, which now serve as background information for more detailed observation. It is also important for the process needs to be able to see trends and variability in the measures and graphical charts enable this better than numeric format.

The current reporting information system was also discussed. There have been plans to later on investigate the possibility to change to a more advanced performance measurement software. However, in the past one of these plans was declined by the company IT department due to implementation difficulties. Another factor affecting the plans is the cost of the new system. Many of these specialized programs are very costly to implement and maintain. Hence, the new IT system could not be planned in the timeframe of this construct. However, more advanced system could provide substantial benefits when it comes to reporting schedule (providing even real-time reports), reporting automation (automatic reports directly from the system without any manual effort from the PtP team) and data reliability (less manual steps and work when generating the base data for analysis would reduce risk of errors). When evaluating the costs, it should be noted that this would most likely also free resources to other tasks. The possibility of implementing one of these IT solutions would be valuable to be investigated in the future. This could be especially advantageous as there have been problems with data validation in the current system. As suggested by Hannula (2002), reliability of the measurement depends mainly on the reliability of the performance data produced by the information system in use.

The organizational context where the measurement system operates was discussed from multiple perspectives with the PtP team. In the original interviews it was noted that the attitudes of the business unit personnel varied significantly. When brainstorming for better integration with the business units, several themes came up. As there are no direct monetary incentives for employees to make improvements, the motivation needed to be looked for elsewhere. The situation is complicated, as the PtP team does not have direct control over the employees working on the processes at the business units. Hence, any changes need to be

made in cooperation with the different sides and the process team can only suggest initiatives and hope for good results.

There are basically two levels of employees in the business units who are mainly related to the processes. The development project is communicated through controllers or purchasing managers at the units and the actual work that affects the processes is done by purchasers, warehouse personnel and people processing the invoices. These are the people who can mostly affect the process efficiency and outcome even though most of them work under the supervision of the above-mentioned managers. The higher-level controllers and managers are more concerned with the unit's cost so this was thought to be the primary incentive how to motivate them to work towards development project's goals. The idea is that as the processes can possess different kinds of costs depending on, for instance, what kind of an invoice the company receives from a supplier, these costs were thought to be the guiding force when communicating the improvements.

It was thought that the lower-level employees needed to be motivated in other ways. As the PtP team cannot place any monetary incentives to reaching project goals, intrinsic motivation was thought to be the starting point. Improving quality and reducing their own workload would be communicated as the major benefit for the employees. The idea is to encourage the employees towards the enabling effect of the PMS as suggested by Adler & Borys (1996), Wouters & Wilderom (2008) and Wouters (2009). By pointing out the problems and engineering solutions, the employees could be more satisfied with their own work, which would also help them to concentrate on their actual work instead of fixing problems with the processes. This would also be in accordance with the findings of Farrell et al. (2012) who suggest that communicating qualitative or quantitative linkages between performance and results to employees significantly improves employee effort allocations and firm performance.

To achieve this goal the performance reporting needs to be clear and the units need to be provided with tools to solve issues in a simple way. The performance package sent to the units was refined and the most essential measures were included in the new template. The presentation format was also polished up so that the important figures are in a more visual format for a quick review. In addition the data figures are provided but they are only available for a more detailed observation of measures and do not represent the main presentation format.

In addition to the performance report the units are given a separate Excel file containing raw data for better drill-down to the details behind the figures. This is crucial as it is the one tool for the units to tackle the problems, as they do not otherwise have access to all the necessary data. In the file the units receive, for instance, lists of most problematic vendors so they can study the causes leading to process issues. With this data resource the PtP team can point out the right direction for the business units without the need to prepare all the materials and analysis by themselves, as this is not possible due to resource limitations. The improvements also need to be done with the daily processes that are not conducted by the PtP team.

As the PtP team resources are fairly limited and the amount of units in the scope of the process is somewhat large, certain focusing was discussed. In practice this would mean that some improvement initiatives would be directed to certain units where they would be tested to find company best practices, which could then be distributed to other units. So instead of doing something with everyone, emphasis would be on finding best ways to process improvements. In a study by Bourne et al. (2005) communication was the biggest differentiator between high and low-performing business units. They found that in high-performing units communication intensity was much higher, meaning the frequency, approach, level of detail as well as the time spent on communication. The research supports the idea that focusing and giving more attention to certain units would likely improve the results. Of course it is natural that investing and focusing resources this way is probable to affect results. However, the aim would be to find the best practices, which could then be shared with everyone else as well.

For future consideration I also introduced the idea of measurement communities. Bauer et al., (2004) found this theme in their research of best company practices. They explain that some companies have adopted these groups, physical or virtual, where employees share best practices and seek to better understand what drives performance in their organizations. The company intranet site could provide tools for this kind of interaction between units as it was noted by the team members that this kind of interplay between units is currently almost non-existent. As there are major differences between units in performance on different measures, it could be valuable to encourage this kind of interaction, which could then lead to sharing best practices among company units. These kind of initiatives are supported by Adler & Borys (1996) who suggest that involving employees more in the processes and bringing forward collective voice of employees may facilitate the enabling effect in companies.

To encourage inter-business unit communication it was also decided to add unit comparison figures to the monthly report sent to the units. This means that the units can see their performance on the key figures relative to others in their business area. This way they can compare how they are doing company-wide. It is also aimed to challenge the units to strive for the top positions on the measures. Ideally it would also lead to business units questioning why some are doing so well, discussing processes and copying best practices from each other.

As mentioned earlier, a new contract with the outsourcing partner was made during the making of this thesis. I did not take part in the negotiations with the outsourcing partner and was not able to contribute to the new performance measures integrated into the new service level agreement made with the partner. However, the process team put much emphasis on tackling the problems that had been perceived with the previous agreement. In practice this means that the measures better meet the process needs and reflect the quality of the outsourcing work. The new agreement includes a greater amount of measures with greater overall detail. Performance measurement best practices books, for example by Austin (1996) and Brown (1996) present countless examples of measures that actually measure something else than what was originally intended, or encourage to wrong kind of behavior. Although otherwise the earlier PMS of PtP was seen to reflect the process needs fairly well, here the measures did not meet the desired quality standards. In the long run the new agreement is supposed to patch this gap.

The role of the accounting helpdesk was also discussed as they provide support and solve the issues that arise during the processes. However, from performance measurement point of view measuring their performance and quality is not that important, as the root causes for the problems are elsewhere, meaning suppliers, business units and the outsourcing partner. The biggest benefits can be achieved from improving those processes, which would then change the role of the helpdesk in the long run and free resources to more value added work.

5 DISCUSSION

The goal of the thesis was to study the environment and performance measurement system in a large organization with many different stakeholder groups and forces affecting the overall performance measurement. By understanding how challenges emerge and affect the PMS can help to identify new mechanisms for their management (Giovannoni & Maraghini, 2013). Through constructive research a new model for performance measurement was created, which takes into account these different perspectives. The case presented in the thesis illuminates the different forces affecting the PMS and focuses on creating a context-rich understanding of how performance measurement can be designed, developed and managed in this kind of an environment.

The case demonstrates that even though the performance measurement on process level is ostensibly simple and the starting point for the research was fairly straightforward, there are countless factors affecting the end result. Although the basic setting of organizational objectives directs the way of the PMS, it is affected by different stakeholder groups, organization cultures as well as resource constraints. In the beginning of the research it was fairly easy to point out some problems with the focal measures and measurement system based on existent literature. However, during the research more and more issues came up that needed to be taken into account and in some ways limited or expanded the design perspective for the research. It also became clear that no previous research offered answers to all of the questions even though most of the themes were discussed at least on some level in previous works.

The background literature came from two standpoints. Practical performance measurement books offered functional advice how to create performance measures and avoid pitfalls during the process. These were used especially when refining the existing PMS and designing the measures. They gave perspective on what things to avoid when designing the measures and how to present the measures in an effective way. However, they contribute very little to the general concepts and to the development of the field itself. Academic journals were used to study how performance measurement is currently discussed in the field and to bring forward wider perspective towards the issues observed along the thesis research. I also feel that the contribution of this thesis is more linked to the academic journals than the practical guides as the model presented here debates with the previous frameworks.

The research setting in the case company is interesting as it can be seen to operate on two different levels from organization-wide strategic perspective. The Purchase-to-Pay process itself is not very strategic nor does it link to the main business of the case company. It is neither linked to a greater company scorecard or PMS. Instead it acts as an accounting/purchasing support function to ensure and provide high-quality, fast and reliable processes. From this perspective we can regard the PtP PMS purely as operational process performance measurement. However, I claim that no process in any company can operate completely in its own vacuum without some sort of connection with the bigger organizational picture. In this case the PtP process is part of the group functions serving the group companies, interacting with different stakeholders and affecting costs. The most explicit strategic linkage that affects the process is the company-wide cost reduction program, which influences it in two ways. It drives the efficiency improvements strived through the development project but also has an effect on the team itself because of restructuring the organization and limiting resources. Chenhall (2005) states that a distinctive feature to strategic performance measurement systems are cause-effect linkages that describe the way operations are related to the organization's strategy. Even though here the link is not so explicit, we can still notice a similar relationship.

The starting point for the research was naturally the measures themselves. These were studied and analyzed with the help of interviews and workshops. This led to creating a more coherent template for performance reporting by uniting reports, removing unnecessary measures and refining the presentation so that it better meets the requirements of the process team. It means providing tools for quickly assessing performance as well enabling more detailed analysis of measures.

During the research process it was quickly noted that there are several different stakeholder groups interacting with the performance measurement system. These include the PtP team itself, the data analysts who provide the performance data, the business units and the outsourcing partner who makes part of the operational work, helpdesk personnel who work on process issues and the development project steering group controlling the project direction.

A major problem seemed to be that in a large organization with a long distance between the different stakeholders, both physically as well as in business related matters, the communication and cooperation between the parties is a tough task. This is also the most difficult issue to solve, as there are no unambiguous answers to the problem. Here the context

is also very special as the different groups are located in different countries and most of the communication is done virtually via video or audio calls. It definitely extends the distance between the stakeholders due to the lack of face-to-face interaction and daily meetings.

In the case company we can also notice some level of *operational decentralization*. Indjejikian & Matějka (2012) define it so that the business units have authority to make operating decisions on their own. They continue that this usually derives from their knowledge about local business environment enabling better decision compared to centralized decisions from corporate headquarters. As the PtP team coordinates the processes and compiles process instructions, the business units still have the authority to operate in their own way. This was noticeable as they had somewhat different ways of working on some of the processes and harmonizing the operations was found to be a difficult task. When communicating with the units, it was also noted that they see some of the processes in a different light compared to the PtP team. In practice this means that the improvement initiatives are also seen and approached differently.

In their study of globalization discourses in a multinational firm, Cooper & Ezzamel (2013) noticed that on national level the discourse of globalization becomes more strongly connected to the regional and national discursive field. When they moved to the level of sub-units, the discourse was strongly moderated by local assessments of the sub-unit's strengths and opportunities, its knowledge and skill base. In this case it was also noted that the organizational culture differs somewhat in different countries and between different units, and this same notion was also present in communication with the units. We can implicate that people identify with their own operational units.

Otley (2003) suggests that similar systems operating in different cultural environments may well have different outcomes. Even though in this case the cultural setting in country sense is not very diverse (business units only in European countries) there can be seen differences in how things are done in different countries. It was also acknowledged by the process team that the ways of working are more or less different in different units. The interesting observation here is that the approach was also strongly affected by the type of the unit in question. The differences were not only based on countries but also depended on whether the unit was an operative production unit or an admin unit. Many of the units have a long history and the differences are likely due to traditional ways of doing things. The outsourcing partner operates from a more different cultural background, which is also present in interaction with

them. The company is more hierarchical and communication more formal than between own group companies. These differences are important to understand because they affect the communication with the different stakeholders as well as performance evaluation. For example when doing comparison between business units, it is important to perceive that they are operating in a very different setting despite being ostensibly identical. There can be, for instance, a major difference with one of the processes that causes a certain target level to be impossible for a certain business unit even though another ostensibly similar unit had already reached it long ago.

Otley (2003) noticed that research has often concentrated on differences between national cultures but not measuring culture more specifically. In the case company I would emphasize the different environments between company units but not so significantly country-wise. I estimate that this comes from the long history as mentioned above. If we think about accounting processes such as these in the case company, the mainstream centralization has only began during the last few years when companies have started merging their accounting services. It could be that the units are not used to communicating with each other, which could derive from previous autonomy. Therefore the harmonization of processes is also still in the making. Nevertheless, this would be highly encouraged in favor of process efficiency.

When we think about the differences between the business units, it is difficult to assess how much of it is based on individuals and how much is due to the wider organizational culture. If we think about the units that are eagerly taking part in improvement initiatives, is it due to the specific individuals or due to a broader attitude? To study Henri's (2006) classification of control and flexible organizations, we would need to go deeper into the specific working environments and analyze them in more detail to identify the dominant characteristics. From the PtP team perspective, flexibility is encouraged as the team operates in an open environment promoting discussion and knowledge sharing. A central theme in the literature seems to be to take into consideration the differences between organizational contexts and to include and emphasize this aspect in the communication. Longer research period would have provided evidence how well the communication strategy of enabling effect and flexibility works in practice.

It was difficult if not impossible to understand what the different parties actually think of the improvement initiatives. As Kerzner (2011, p. 35) suggests it is good to understand that not all stakeholders have the same expectations of a project. He continues that some want the

project to succeed, but some may prefer to see the project fail even though they openly support it. We need to remember that in this case the development project aims at more efficient processes and eventually cutting costs. Jääskeläinen & Sillanpää (2013) state that productivity is somewhat problematic concept because it often has a negative image from employee point of view. This is because it is linked to cutting costs and laying off employees, although productivity can be improved by improving outputs and processes (Jääskeläinen & Sillanpää, 2013). It could be that the business unit personnel are worried about their own positions, which could hinder the improvements but this is impossible to know for sure.

There are often trade-offs between different performance dimensions and targets of the PMS, leading to relying on the belief's and prioritization of the management (Giovannoni & Maraghini, 2013). In the case company resource constraints, meaning time, cost and employee resources rose as a major theme when finding solutions to the performance measurement problems. The process organization went through some major organizational changes during the research period and this affected significantly the daily work of the team members. There were personnel changes as well as shifts in the responsibilities and roles of the employees. Even though all the team members are committed to the project, the resources that can be committed to performance measurement and management are limited. The resource limitations also affect the daily work of the team as it was noted that precise follow-up of the measures would require more resources. This also limits the communication that can be done with the stakeholders because of the large amount of units in the scope of the process. Towards the end of the research period, the resources became even more limited, which significantly affected the scope of the development project. This caused the team to concentrate heavily on only the most important issues and ignore the less significant areas.

Costs are of course the reason limiting the number of resources available for the process. It also affects the tools that can be used for assessing performance, as it is a major factor when new performance measurement system procurement is evaluated in the future. Consequently costs drive operations in two ways. They direct the improvement initiatives but also affect how much resources are available for the development work and processes.

The resource constraints are important to acknowledge because they affect so significantly what can be done and in what time. The performance measurement literature seems to approach the subject from very ideal point of view, as these limitations are usually ignored. It has to be noted though, that they are very explicitly presented, for instance, in a field study by

Andon et al. (2007). It seems that these constraints are usually more related to project management as suggested by Kerzner (2011, pp. 9–10). Even though in this case there is also a development project present, the limitations affect identically the processes in general. This causes trade-offs and forces marginalizing less important issues.

A weak market test was used to evaluate the results of the constructive research. Labro & Tuomela (2003) define that if a construct initiates actions, even if only once used, it meets the weak market test criterion. Some parts of the construct were implemented right away as the process documentation and roles were defined in more detail, new reporting template was taken into use, and target levels as well as comparison between business units was implemented. In addition the communication with the business units and their incentives were brought into discussion and planning. Altogether the new PMS format received positive feedback from the process team. However, due to the time frame of the thesis, a wider test of construct usability could not be tested. This was partly due to technical restrictions as well as practical management limitations as a wider PMS update and testing, or even a new software solution, could not be implemented in such a short schedule.

A Contemporary PMS Framework for Process Performance Measurement

In addition to the construct of the new performance measurement model, the aim was to better understand the context where the research was conducted. The research provides results to understanding a contemporary multinational context for performance measurement. To better illustrate the different forces affecting this context, they are combined to a framework presented on the next page. The frameworks by Ferreira & Otley (2009), Melnyk et al. (2013) and Neely et al. (2000) were used as the basis, remodeled and expanded to reflect this research.

In this model the design, implementation, use and refresh phases of a PMS are the central processes like often presented in the literature, for example by Neely et al. (2000) and Bourne et al. (2005). It has been noted that many of the typical issues are related to one or multiple of these phases so they are the critical stages where the company needs to succeed in order to create a successful measurement system. These are also the processes that can be most easily affected by the PMS members. Other forces influence the system from outside are often out of the hands of the measurement personnel. These other forces affecting the PMS are presented on the edges of the framework circle. Some of the factors have been present in the earlier

frameworks but here they are molded and compiled together based on the findings of this research. The forces can be seen as prevailing in many contemporary global companies.

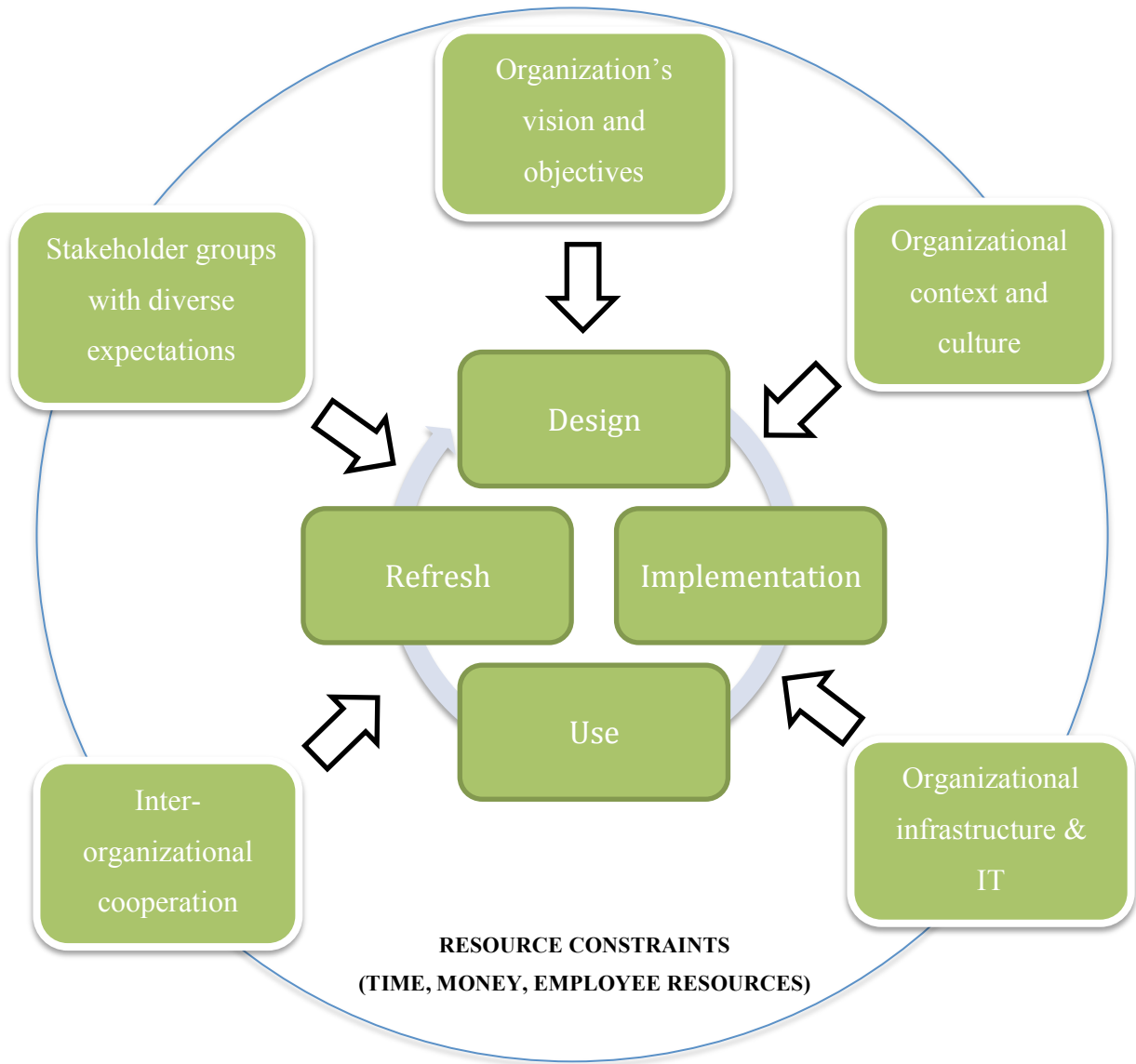


Figure 10 A contemporary PMS framework for process performance measurement

The organization’s vision and objectives are the leading factor directing the way of the PMS. This is widely acknowledged in the academic literature as a major principle (see Franco-Santos et al., 2007; Kaplan & Norton, 1996). This was also seen to be implicitly present in the case process, even though PtP is not otherwise one of the key strategic business processes in the case company.

Organizational context and culture refer to the different organizational settings in the company. From the case company we can notice that these different context affect

significantly how processes work even though they are namely uniform across the organization. This seems to be because there are often differences in the background of a company's units in a large corporation. Depending on the system individuals can also have a significant influence on the system if it enables individual authority. This is also related to the coercive and enabling cultures as defined by Adler & Borys (1996) since they qualify the basic setting where the PMS operates and the basic principles how it is managed.

Neely et al. (2000) presented infrastructure as an emerging theme in performance measurement but in addition I would emphasize the influence of company IT environment as a highly important area today. Nudurupati et al. (2011) point out how performance measurement is likely to fail or be limited in an environment of weak, inconsistent information systems. Bititci et al. (2012) also highlight supporting information technologies as an emerging trend in the field, which supports its significance. In the case company the influence was also present as the IT infrastructure affected and limited what could be done and in an ideal situation the technical solutions would likely be different.

Inter-organizational cooperation refers here to actions between two or more companies. In the case company this takes place between the company and its outsourcing partner for accounting functions. In other instances it could mean development initiatives between companies or other innovations without a clear customer/vendor relationship. Or on the contrary the performance measurement of a traditional supply chain. In any case these requirements and influence come from outside of the company itself. There is a noteworthy amount of research on traditional supply chain management but performance measurement in collaborative organization is newer subject that still needs further research (Bititci et al., 2012).

Stakeholder groups with diverse expectations highlights the fact that some stakeholders operating in the performance measurement environment may have different views, needs and objectives for the PMS. In worst case this can result in conflicts or impair the measurement system. In other instances there may be special requirements from different parties, which need to be taken into account. The vital theme is to notice these different views and consider them when planning performance measurement.

The outer layer of the framework presents the resource constraints that affect all of the stages of PMS management and all of the forces and stakeholders present in the measurement system. These are important to acknowledge as in the real operating environment, and

especially during the rather rough times in the economy, they are constantly present when making performance measurement decisions and assessing the system. Commonly many ideal solutions are not applicable in real-life environment because of the constraints.

From something that was left out of the framework, I would like to mention the feedback and feed-forward roles under the use phase of a PMS. They are not included in this framework because this model reflects the whole PMS entity and does not go into details with the four PMS phases. However, I feel that they are very central to a successful PMS and also present in the case company. These roles have been defined very well in previous works, for example by Bititci et al. (1997).

In classification by Keating (1995) the resulting framework can be seen as refinement and illustration of existing theory. He defines refinement as 1) illustration of theory's capacity to illuminate a phenomenon in new or better ways; 2) specifying theory by adding greater precision to theoretical constructs and propositions. Keating (1995) defines illustration as using alternative theoretical perspectives to document previously unappreciated aspects of management accounting practice. By illustrating the case and its different aspects, creating the construct, analyzing the findings and creating the framework I feel that I have met the characteristics in Keating's classification. Thus the thesis adds contribution to the different perspectives of performance measurement and ties them together in a contemporary way.

6 CONCLUSIONS

The aim of the thesis was to study how performance measurement can be designed, implemented, used and refreshed in a contemporary multinational context. The research context was a large, industrial company operating globally and offering a diverse environment for the performance measurement research. Inside the company the study concentrated on a group level Purchase-to-Pay function coordinating, developing and ensuring quality of specific accounts payable and purchasing processes.

The design and use perspectives of performance measurement were studied in the literature review, which also offers a general perspective to the central theoretical frameworks present in the field. In the case company the existent performance measurement system was analyzed and developed from its previous state with the help of constructive research approach. This meant refining performance measurement reporting, documentation, roles and communicational aspects. Through the empirical research it was noted that there are several factors present that constantly affect how the measurement system operates. These factors were brought together to form a framework for measuring process performance in another similar environment. The factors discovered in the research are: organization's vision and objectives, organizational context and culture, organizational infrastructure and IT, inter-organizational cooperation and the different stakeholder groups with diverse expectations towards the performance measurement system. In addition resource constraints, meaning here time, costs and employee resources, were constantly present and affected the measurement system and the processes that are measured.

In addition to the factors mentioned above, communication between the different stakeholders rose as a central theme throughout the research. Communication is noted in the literature among the most important factors for a successful performance measurement system. This notion is supported by the empirical research, as there are several different stakeholder groups and continuous communication ongoing through different channels and across multiple countries. To successfully carry out development initiatives requires effective communication from the process team.

Altogether, the thesis provides understanding to the environment where a performance measurement system operates today and what kind of factors need to be taken into account when performance measurement is designed and used.

Further Research

In a recent literature review, Bititci et al. (2012) see that the fundamental purpose behind performance measurement may be changing, with a diminishing emphasis on control and increasing emphasis on learning. They see a need for better understanding the interplay between culture and performance measurement as well changing performance measurement practices in multicultural networks and collaborations. This outlook is important as in this case study it was also acknowledged that the performance measurement system operates mostly without a traditional control system environment. Here we can see a rising emphasis on enabling structures as defined by Adler & Borys (1996), Wouters & Wilderom (2008) and Wouters (2009).

This kind of notion of performance measurement as a social system with strong cultural connections needs to be researched in more detail. Today's organization can operate in a very diverse, global environment collaborating with several other organizations and having several internal networks. The challenge is the growing amount of very diverse performance measurement environments across diverse organizational cultures and information systems. In addition the organizational environment may be quite turbulent, changing remarkably in a short period of time which calls for understanding how PMSs adapt to the changing operating environment (Bititci et al., 2012). This is likely to have a significant effect on the goals of performance measurement systems as well as on the ways they are designed and used. More thorough research on employee motivation in open, flexible performance measurement systems is needed. Today's operating environment also leads to very context-specific solutions to performance measurement problems and may require reassessment of performance management practices.

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8 APPENDIX

PMS, an extended framework for analysis (Ferreira & Otley, 2009)

1. What is the vision and mission of the organization and how is this brought to the attention of managers and employees? What mechanisms, processes, and networks are used to convey the organization's overarching purposes and objectives to its members?
2. What are the key factors that are believed to be central to the organization's overall future success and how are they brought to the attention of managers and employees?
3. What is the organization structure and what impact does it have on the design and use of performance management systems (PMSs)? How does it influence and how is it influenced by the strategic management process?
4. What strategies and plans has the organization adopted and what are the processes and activities that it has decided will be required for it to ensure its success? How are strategies and plans adapted, generated and communicated to managers and employees?
5. What are the organization's key performance measures deriving from its objectives, key success factors, and strategies and plans? How are these specified and communicated and what role do they play in performance evaluation? Are there significant omissions?
6. What level of performance does the organization need to achieve for each of its key performance measures (identified in the above question), how does it go about setting appropriate performance targets for them, and how challenging are those performance targets?
7. What processes, if any, does the organization follow for evaluating individual, group, and organizational performance? Are performance evaluations primarily objective, subjective or mixed and how important are formal and informal information and controls in these processes?
8. What rewards — financial and/or non-financial — will managers and other employees gain by achieving performance targets or other assessed aspects of performance (or, conversely, what penalties will they suffer by failing to achieve them)?
9. What specific information flows — feedback and feed- forward —, systems and networks has the organization in place to support the operation of its PMSs?
10. What type of use is made of information and of the various control mechanisms in place? Can these uses be characterized in terms of various typologies in the literature? How do controls and their uses differ at different hierarchical levels?
11. How have the PMSs altered in the light of the change dynamics of the organization and its environment? Have the changes in PMSs design or use been made in a proactive or reactive manner?
12. How strong and coherent are the links between the components of PMSs and the ways in which they are used (as denoted by the above 11 questions)?