Aalto-yliopisto
Kauppakorkeakoulu

Management control system as a platform for sharing tacit knowledge and supporting the quantification of the customer - Managers' perception

Case: Usage of Pulssi at HOK-Elanto Prisma hypermarkets

Laskentatoimi

Maisterin tutkinnon tutkielma

Sampo Oksanen

2015

Laskentatoimen laitos
Aalto-yliopisto
Kauppakorkeakoulu

Aalto University
School of Business

Management control system as a platform for sharing tacit knowledge and supporting the quantification of the customer - Managers' perception

Case: Usage of Pulssi at HOK-Elanto Prisma hypermarkets

Master's Thesis
Sampo Oksanen
Spring 2015
Accounting

Department of Accounting
Aalto University
School of Business

Aalto University
School of Business

Management control system as a platform for sharing tacit knowledge and supporting the quantification of the customer - Managers' perception

Case: Usage of Pulssi at HOK-Elanto Prisma hypermarkets

Master's Thesis
Sampo Oksanen
Spring 2015
Accounting

Approved in the Department of Accounting ___ /___ 20___ and awarded the grade

---

Author Sampo Oksanen

Title of thesis Management control system as a platform for sharing tacit knowledge and quantifying the customer - Managers' perception

Degree Master's

Degree programme Accounting

Thesis advisor Juhani Vaivio

Year of approval 2015 **Number of pages** 83 **Language** English

Abstract

The purpose of this study is to examine the feasibility of a management control system as a platform for sharing tacit knowledge and supporting the quantification of the customer. This is studied from the lowest level user perspective, in this context the managers'. The thesis is carried out as a single case study and uses the conducted 15 semi-structured interviews as primary data source. The secondary data consists of the information stored in the management control system.

The studied management control system is *Pulssi*, an activity-based system provided by Trainers' House Plc. *Pulssi* is used to monitor the recurring weekly actions, which are critical for strategic change. Managers' perception is studied at HOK-Elanto's 12 Prisma hypermarkets after one years' use of the system.

Pulssi was seen helpful in sharing information among the organization, but the interviewed managers hoped that they could use the picture module to improve the sharing of tacit knowledge. 8 out of 12 interviewed managers thought that tracking activities and non-financial metrics along with the operative outcomes is a good practice. Standardization of activities and steering those in a new direction was approved and thus the system was found to support the quantification of the customer.

The two most important factors behind the sharing of tacit knowledge, the usage rate and correct use of the system, are active leadership on the matter and interesting and frequently changing management control questions. The role of consultants was generally seen unimportant. This study hopes to help the future internal knowledge management projects.

Keywords Tacit knowledge, reporting system, management control, quantification of customer, user perspective, strategic change

Tekijä Sampo Oksanen

Työn nimi Management control system as a platform for sharing tacit knowledge and quantifying the customer - Managers' perception

Tutkinto Kauppatieteiden maisteri

Koulutusohjelma Laskentatoimi

Työn ohjaaja Juhani Vaivio

Hyväksymisvuodo 2015 **Sivumäärä** 83 **Kieli** Englanti

Tiivistelmä

Tutkimuksen tarkoituksena on tutkia kuinka hyvin johdon kontrollijärjestelmä toimii alustana hiljaisen tiedon jakamiseen ja kuinka se tukee asiakasarvon käsitteellistämistä. Tätä tutkitaan matalimman tason käyttäjän, tässä tapauksessa päällikön, näkökulmasta. Tutkimus on yhden yrityksen case tutkimus ja käyttää 15 puolistrukturoitua haastattelua ensisijaisena lähteenään. Toissijaisena lähteenä käytetään järjestelmään 66 viikon aikana syötettyjä tietoja. Tutkimuksen kohteena on *Pulssi*, aktiviteetteja ja tuloksia mittaava järjestelmä, jonka kehittämisestä vastaa Trainers' House Oyj. *Pulssia* käytetään jatkuvien viikoittaisten tekemisten seurantaan, jotka ovat kriittisiä strategian muuttamiseksi. Päälliköiden suhtautumista järjestelmään tutkitaan yhden vuoden käytön jälkeen kahdessatoista HOK-Elannon Prisma hypermarketissa.

Pulssi nähtiin hyödyllisenä informaation levittämisessä organisaatiossa, mutta haastatellut päälliköt toivoivat voivansa käyttää valokuvaominaisuutta, jolloin hiljaisen tiedon levittäminen olisi helpompaa. Kahdeksan kahdestatoista haastatellusta päälliköstä piti tekemisen ja ei-taloudellisten mittareiden seurantaa hyvänä operatiivisten mittareiden lisänä. Tekemisen yhtenäistäminen ja sen ohjaaminen uuteen suuntaan hyväksyttiin ja siten järjestelmä tuki asiakasarvon käsitteellistämistä. Kaksi tärkeintä tekijää järjestelmän käyttöasteen ja hyödyllisen käytön takana ovat paikallisen johtajan suhtautuminen järjestelmään ja kiinnostavat ja tarpeeksi usein vaihtuvat tekemistä ohjaavat kysymykset. Konsulttien rooli nähtiin yleisesti merkityksettömänä. Tutkimus pyrkii tuomaan uuden kulman strategisten muutoshankkeiden läpivientiin.

Avainsanat: Hiljainen tieto, raportointijärjestelmä, johdon kontrolli, asiakasarvon käsitteistäminen, käyttäjäkokemus, strategian muuttaminen

Table of Contents

List of Tables

List of Figures

1. INTRODUCTION

1.1. BACKGROUND OF THE STUDY

"An important problem in the strategic management literature is to establish linkages between managerial actions and their consequences in terms of measurable outcomes." (Bowman & Tombs, 2010). Today, employees are suffering from the abundance of information and it is no more easy to tell which data matters. According to Hopwood (1972), the accounting systems are designed to provide all levels of management with timely and reasonably accurate information to help them make decisions which are in agreement with their organization's goals. These accounting systems can be defined as management control systems (MCS) as they act as gatekeepers of information. These systems can be used as performance measurement systems (PMS) as well and their usage has been studied extensively in many organizations and industries (e.g. Gutierrez et. Al, 2014; Dambrin & Robson, 2011; Hopwood, 1972). These systems are vital for the ambition of management to handle the ever increasing information flows and keep the interested parties informed.

A part of this information can be described as tacit knowledge. This is information that is difficult to express, formalize or share. '*It stands in contrast to explicit knowledge, which is conscious and can be put into words.'* Explicit knowledge can be characterized as "knowing that" and tacit knowledge as "knowing how". Companies boast that their personnel is their greatest asset as they possess some unique skills or have specific, that is, tacit knowledge. This knowledge makes it possible for companies to thrive, but the companies encounter often problems with managing and sharing it. As one HP director put it *"I wish that HP knew what HP knows."* (Lubit, 2001). For the whole organization, learning is essential to survival (Baumard & Starbuck, 2005).

Tacit knowledge is non-numerical, non-financial information. The "softer" side has been a part of management control and performance measurement systems ever since Kaplan and Norton introduced the Balanced Scorecard in the early 1990s. However, little attention has been given to the implementation of measurement systems (Tuomela, 2005). The managers might suffer from "not invented here syndrome" and

resist the change and usage of others' tacit knowledge. They might be unwilling to share it, too, as the information secures their current status (Lubit, 2001). The measures of the system have been criticized (Vaivio, 1999) as well as the lack of measures to control the fulfillment of those measures (Cäker, 2007).

Even a 'weak' understanding about correlation between the non-financial performance measures (NFPM) and activities has been found to increase the willingness to archive targets and thus executives should inform their subordinates for the reasons for the chosen metrics (Booker et. Al, 2011). Furthermore, it has been suggested that CEO's primary role in change process resolves around the concepts 'sensemaking' and 'sensegiving' (Gioia & Chittipeddi, 1991). It is of utmost importance to understand how the managers perceive the metrics of MCS for a successful MCS implementation and usage.

Despite the increased understanding about project management during the past decades, only a minority of projects can be said to be successful. Even the completed projects suffer from the cost overruns, delays and fail to deliver the promised functionality (Kearns, 2007). The costs are globally hundreds of billion dollars on the software side only (Ewusi-Mensah, 2003), which relates strongly to the management control systems, which are nowadays often electric. The academic research and practice both emphasize that stakeholder management and performance are strongly correlated (Beringer et. al. 2012) and thus the focal point of this study is the low-level managers' perception of a new internal process.

The implemented management control process in the case part resolves itself around the concept of activity-based management. Activity-based management is the management and control of enterprise performance using activity-based information as the primary means of decision support (Hixon, 1995) and action facilitator. This differs from the result-focused management style, where the management perceives mainly the delivered results, e.g. monthly sales figures.

1.2. OBJECTIVES AND CONTRIBUTION

With multiple contradictory findings on managers' views of the imperfect PMS (e.g. Dambrin & Robson, 2011; Jordan & Messner, 2012; Malina et al., 2007), it can be safely assumed that the managers' perception on the matter varies greatly between the companies and settings. The focus of the study will be on the first year of the system use, which is critical for the success of the project. This thesis examines how managers perceive a new management control system and what kind of change resistance arises when their activities are closely and transparently monitored by the executives and their peers. This thesis studies how the managers perceive the undertaking of top management to steer the managers' actions. Monitoring managers' actions in addition to their results is likely to cause irritation among the managers, but is important for the executives so that they can steer the managers' focus on the most important actions and the use of best practices. Accounting studies have called for the measurement of the customer in order to make it a quantified unit (Vaivio, 1999) and thus this study focuses on how a MCS helps supporting the execution of the needs of a quantified customer. How the managers feel about the sharing of both tacit and explicit knowledge is studied as well.

This thesis is a case study, examining the use of activity-based management control system Pulssi at HOK-Elanto Prisma hypermarkets. Pulssi has been used by the managers and the directors from the early 2014 onwards. Users of Pulssi answer weekly 1-3 questions based on their status. The questions attempt to steer the actions of the users in the wanted direction and enable the sharing of tacit knowledge. It is possible to comment on others' actions and have a discussion about their ideas on the system, which resembles Facebook. This paper benchmarks the use of Pulssi with the best practices presented in the Enterprices Resource Planning (ERP) literature as presented by Bradley (2008). ERP literature was chosen as a baseline as the ERP system shares many same aspects as Pulssi. Both IT systems are developed outside of the user organization, both affect the planning and working methods, chosen by the top management and often used by the managers.

This study will consider both the financial and non-financial measures. In addition to the obvious differences, the literature distincts the financial and non-financial targets so that the former indicates whether targets have been achieved and the latter monitors and controls the important success factors (Tuomela, 2005). The qualitative data is collected with 15 interviews with Prisma personnel and the quantitative user data is exported from the Pulssi system.

The research question of this study is:

"How managers perceive the use of an activity-based management control system and does the system enable the sharing of tacit knowledge and support the quantification of customer?"

This thesis contributes to the discussion about the change resistant managers and how to improve their current negative association with organizational changes.

1.3. STRUCTURE

This thesis is structured as follows. Firstly, the relevant literature to the theoretical model will be presented. Secondly, the methodology used in the case part is presented. Thirdly, the case company is introduced and empirical results presented. The thesis will be concluded with discussion about the results and consider the limitations and implications for future research.

2. LITERATURE REVIEW

This section introduces the reader to the management control systems and their use. First the history of the management control systems is presented and the usual metrics in a performance measurement system are discussed. After that the differences between explicit and tacit knowledge are presented. The section concludes with presentation of critical factors behind a successful implementation of ERP system.

2.1. MANAGEMENT CONTROL SYSTEMS AND THEIR USAGE

History of management control systems

In the early 20th century, standard costing and the quantification of every work phase and measurement of resources needed for those phases emerged (Miller & O'Leady, 1987). In the 1970s America started to awaken for the threat presented by the country of the rising economy, Japan. Initially, American executives claimed that the cheaper Japanese cars were solely due to the lower labor costs. They had to reconsider their assessment as Japanese companies started to establish car manufacturing plants in the American soil and were still able to offer cheaper cars with similar quality than their American counterparts. First, the corporate America started to pay attention to efficiency advantages provided by the Toyota Production System (TPS), Just-in-Time (JIT) and Just-on-Time (JOT) practices, which were invented by the Japanese companies (Ohno, 1988). Second, it was realized that traditional costing practices are often unable to determine the actual costs of production and those related to the services (Cooper & Kaplan, 1988). Third, the role of non-financial measurement metrics was even increasingly emphasized after Kaplan and Norton (1992) presented the balance scorecard (BSC). Thus the focus of management has shifted from products to people. Introductions of different non-financial measures have greatly changed also the role of controller (e.g. Vaivio, 2004). An interesting topic is whether the introduction of these performance measurement systems, that is additional control, affects the innovation capabilities of the company. The issue is likely whether the control is seen as supportive to innovation or strangling. According to various studies (e.g. Miller & Friesen, quoted in Simons 1995 article) control has positive correlation for conservative firms and negative

in entrepreneurial firms. This could be due to the improved information flow in conservative companies, which are often large. This acquired knowledge might cause the entity to act in a positive way. In entrepreneurial companies, these measures could cause the employees to feel themselves being restricted and could even leave the company. As Rovio closed their start-up studio, some of their employees thought that their innovation capability is restricted and left the company for setting up their own company, Epic Owl (Talouselämä, 2015).

Use of MCS

Hopwood (1972) notes that *managers, in adapting to accounting systems, deliberately falsify the data and make decisions which may be detrimental to the long-term interests of the organization*. Despite the obvious contradiction to their own long-term benefit, this is a widely spread phenomena (Hopwood, 1972). This relates to literature on Reliance on Accounting Performance Measurement (RAPM), which has been said to have multiple design problems. First, neither accountants nor managers have developed perfect measures and standards. Second, the cost structure is unclear and if presented, very complex. Third, the accounting data is more concerned with presenting outcomes, while managers think more about their processes, which lead to the outcomes. Fourth, the accounting reports' main focus is on short-term activities while the managers focus on the long-term. *"Ultimately, of course, the very cost of providing the information is an important constraint on the accuracy and relevance of the data."* (Hopwood, 1972). The more detailed the data is the more expensive it is, in both time and monetary terms.

Hopwood (1972) further criticizes the strict RAPM is inappropriate as it causes tension among the employees. On the other hand, in a study performed by Otley (1978) no such tension between job-tension and budget use was found. It has been assumed that this conflict arises because both studies consider different evaluative situations (Hirst, 1981). It is also unclear whether the nationality affects the attitude toward RAPM and PMS. Harrison (1993) argues that in Singapore, where employees have a high power distance at the workplace have a more positive interpretation toward the RAPM than in Australia, where organizations are usually flatter in their power relations than in

Singapore. Harrison's findings have been confirmed in later studies (e.g. Lau, Low & Eggleton, 1995)

Table 1: Different strategic archetypes presented by Miles & Snow, 1978

Type	Definition
Prospecting	Innovative and exploratory
Defending	Narrow and focused
Reacting	Waiting for environmental cues
Analyzing	A mix of prospecting and defending

There is a potential tension between the decision-facilitating role of accounting and, on the other hand, its role as an instrument of control (Hopwood, 1972; Jordan & Messner, 2012; Simons, 1990). Still how should the management control system be chosen for ensuring the wanted activities? The chosen strategy should be kept in mind while doing this. If the strategy archetypes presented by Porter or Miles & Snow were investigated, which are listed on table 1, it is easy to say that overall cost leadership and Defender strategies require advanced cost controls, but for others it is very difficult to name one particular system (Simons, Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal, 1995). Many works (e.g. Simons, 1990; Otley 1999) stress that research focuses often on MCS as a way to implement strategy and neglects its impact on strategy formulation, which actually makes the MCS and strategy interrelated. This raises the question whether companies should change both the strategy and MCS to be successful in the new setting (Tuomela, 2005), which is illustrated in Figure 1. Nevertheless the strategy, a good management and performance indicator system should both enable transparency for the top management and enforce the wanted action for the managers and employees (Cuguero-Escofet & Rosanas, 2013; Jordan & Messner, 2012).

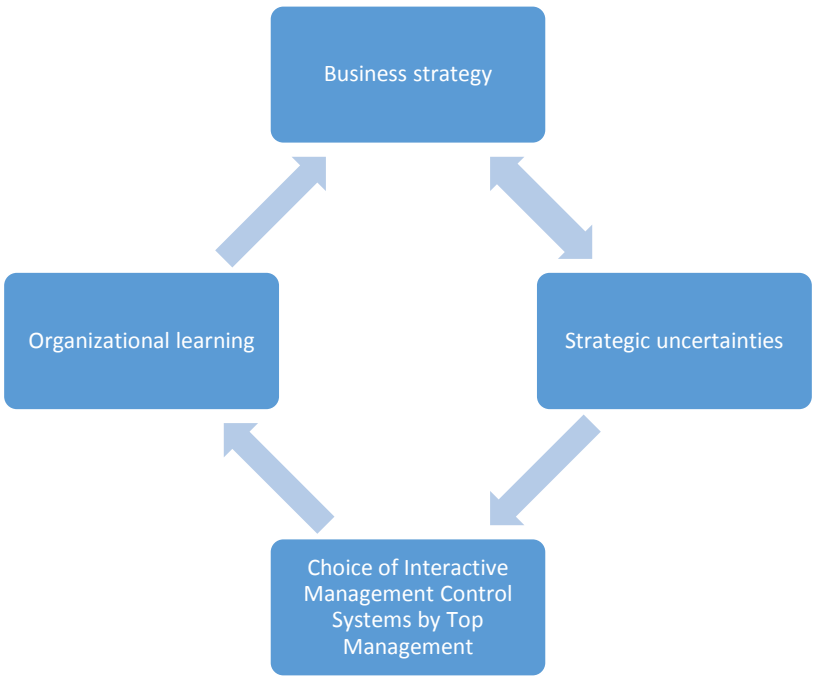


Figure 1: Process model of relationship between business strategy and management control system. Apodted from Simons (1995)

Simons (1990) writes that top management must decide which aspects of MCS they want to use interactively and which to program. '*Management controls become interactive when business managers use planning and control procedures to actively monitor and intervene in ongoing decision activities of subordinates'* (Simons, 1990). The intervention enables management to debate and challenge underlying data, assumptions and action plans and thus requires regular attention. This can be burdensome and that is why typically only some parts of the MCS are interactive (Simons, 1990). According to Simons (1990) the selected interactive system can be used by the top managers for three functions: signaling, surveillance and decision ratification. According to Simons, it is often difficult for the management to know who makes the important decisions and how or why a decision will be made. *'For this reason, top managers do not know ex ante, and often not even ex post, who in the organization initiates and fosters important policy decisions. By using interactive management controls to monitor strategic uncertainties, top managers reveal their values and preferences to the many individuals in the organization who have input in decision processes.'* (Simons, 1990). Strategic uncertainties are those seen so crucial

that the top managers believe that they must personally monitor those to ensure that the objectives of the company are achieved (Simons, 1990). Surveillance is a method of searching and controlling surprises and gathering information from them. Employees gather information much more than they would traditionally share with their superiors and by searching for them actively, the management receives ideas for new alternatives for the company's actions. (Simons, 1990). This relates to tacit knowledge and distributing it among the entity, which have increased with the emerge of the interactive non-financial measures (Vaivio, 2004). Decision ratification is necessary with any change and by acting interactively the management receives information from the field and can address the concerns rising from the employees and lower managers.

Organizational learning aspect is important in an interactive management control system as it stimulates the whole organization about the strategic uncertainties. Keeping in mind that the ideas often emerge in unsystematic ways, this enables the organization to share their knowledge easily. The personal involvement of the top managers is essential for employee motivation to produce and share information. (Simons, 1990). Without the top management support, the employees might be reluctant to share information as it might weaken their relative position among the employees. This phenomenon is wide-spread in the corporate life and its drawbacks are especially transparent in the field of capital budgeting and investment decision-making, see for example Lumijärvi (1990).

Table 2: Combinations of justice of the design and use of the MCS and their results. Adopted from Coguero-Escoget & Rosanas (2013)

		MCS design	
		Formally just	Formally unjust
MCS use	Informally just	Maximum goal congruence	Occasional goal congruence
	Informally unjust	Perverse goal congruence	Minimum goal congruence

The management control systems are affected as much by absence of use as by inappropriate use (Mundy, 2010). Cuguero-Escofet & Rosanas (2013) list the just

design and use of MCS as requirements for goal congruence. Whether the requirements are fulfilled or not lead to four different scenarios, listed at table 2. First, the maximum goal congruence is the optimal situation, where '*justice requirements are included in the design, and managers use them proactively and consistently' (*Cuguero-Escofet & Rosanas, 2013). The managers are loyal to the system, but are informally just as well and thus willing to change certain aspects of the system, if the system doesn't act in a just way as it did when it was designed. This leads to maximum goal congruence under the organizational circumstances.

Second, if the design is formally unjust, but managers are informally just, they can affect the system and improve it. This phase doesn't usually last long, because as the managers become aware of the problems in the system, the system is changed before long. *'At this stage, the MCS may be designed to assign bonuses in a way that works for the sales department but offers no incentive to people in other departments that should be supporting the sales force'* (Cuguero-Escofet & Rosanas, 2013). A study by Healy (1985) found out that managers changed the accounting procedures to those that resulted in them achieving the highest bonuses possible.

Third, if the MCS design is just, but the system is used unjustly, this could lead to dysfunctional learning and perverse goal congruence. The employees might be suffering from the unjust use of the system and instead of calling for the just usage of the system; they could end up wanting a stricter system. Creating new rules could lead to even greater perceived unfairness, but will certainly lead to a more rigid and less flexible system. There are too many rules in highly formalized systems, which tend to contradict each other, which make it harder to comply with the system. Managers might legitimize themselves with certain rules and then neglect others. As more rules are added, the managers become increasingly better to cheat the system and until 'they fully master being unjust'. This will lead employees to resign and head for companies, which offer higher transparency between management control design and use. The perverse goal congruence leads highly likely to minimum goal congruence. (Cuguero-Escofet & Rosanas, 2013)

Fourth, when both the MCS design and system uses are unjust, there will be minimum goal congruence. The motivations of the organizations and its members become misaligned, which leads to unwanted actions, worse results and higher employee turnover. Cuguero-Escofet & Rosanas (2013) recommend to focus activities on the just usage of the system as it will lead to better results than a just system. If the system is used informally justly, the system will at the end become more just. If the system is just, but the usage is unjust, it will just descend into minimum goal congruence. (Cuguero-Escofet & Rosanas, 2013)

Panopticon & quantification of customer

Complete control over subordinates and knowledge of every single detail in the organization is a recurring theme in history. *"Foucault (1977), drawing upon the work of Bentham (1791) develops the 18th century model of prison as a modern surveillance technique. The panopticon was basically a twelve-sided polygon with a central tower through which it was possible for the superintendent to observe the behavior of prisoners. The panopticon model drew attention "to the use of techniques of surveillance which render visible or potentially visible the most minute details of individuals behavior""* (Akella, 2003). A business example of panopticon is management by objectives (MBO), where achieving the targets in a certain time limit is vital. This is can be used as a regular evaluation criterion. Akella (2003) quotes Garland (1987) with *"the successful control of an object .. requires a degree of understanding its forces, its reaction, its strengths and weaknesses. The more it is known, the more controllable it becomes."* In order to control the employees, the directors should know everything about them. As they have the employees in their control, they can have them focus on the most value added work, no matter how unpleasant it might be. On the other hand, it could make the organization more efficient and thus justify the action. Foucault (1983) suggests that the knowledge can be gained by observing the individuals or having them do self-assessments. (Akella, 2003)

Harold Geneen is a prime example of foucaultian executive. He was a legendary business director and prime example in this field as he led a multinational company

called *ITT*. To illustrate his success, between the years 1961 and 1971 when Geneen was CEO, he was able to multiply company's revenue by 13-fold. Geneen had organized the nearly 400 000 ITT employees into 250 cost centers and every cost center was measured with the same 30 metrics. This enabled Geneen to evaluate every cost center manager simultaneously. The headquarters of ITT had a massive color-coded "Comptollership Grid", where 250 field units were on the vertical axis and each of 30 evaluation criteria on the horizontal axis. With his accountant background, Geneen was an enthusiastic lead-with-numbers –type and with ITT's accounting system, he was able to do that for the whole ITT. The system allowed him to monitor everything and take action if the numbers weren't where they should have been. Every month, Geneen flew with his staff to Europe, where 150 managers had monthly meetings. Geneen saw this as an opportunity as "everyone could get the help", but for the managers, this was a nightmare. People had to fear of being bullied in front of every colleague for some minor details. Yet, even in this setting, the control was not absolute as in a panopticon described by Foucault. The managers were also able to take advantage of Geneen's complete control of everything and defer the discussion about key topics to just prior to Geneen's departure. Critics claim that despite Geneen's immense results, those could have been achieved with less drastic measures. (Hopper & Macintosh, 1993)

Geneen applied panopticon to his employees and in similar mode, the idea of applying Foucault's ideas to customers have been presented. Vaivio (1999) studied a UK subsidiary of Unilever and the introduction of quantitative knowledge as a calculable space in the name of The Customer. The cohesion to Foucault is evident: *"The new formal knowledge "by numbers" is implicated with the organization's underlying structures of power. The Quantified Customer can be seen as an expression of power/knowledge." (Vaivio, 1999).* Vaivio's study starts one year after the Quantified Customer is first presented. In this case, the first sign was *"a monthly management report which complemented financial measurements by regularly monitoring an array of activities and functions that were deemed critical areas of this locale in terms of The Customer's satisfaction."* The case company measured dozen non-financial metrics, which would symbolize The Customer's needs. The non-financial metrics would be in numerical texture and thus make the situation visible.

Before the company had settled on The Quantified Customer, the company had relied on ad hoc metrics. This had caused the managers to have wrong priorities, poor preparation and minimal internal co-ordination, all at the customers' expense. The situation improved as the company dug deeper to the root causes of dissatisfaction of The Customer. However, the new setting caused remarkable organizational disorder and after two years of practice, the Quantified Customer was buried, but not without changing the organizational practices for good: now the monthly performance review would accommodate some of the non-financial calculus. (Vaivio, 1999)

In Vaivio's (1999) case the sales people thought that the Quantified Customer framework simplified things too much and didn't allow enough heterogeneous service for the customers, which is in accordance with Hopwood's (1972) study. In Vaivio's study, the sales people were able to change the direction from bottom-up as they affected their management. The senior managers in Cäker's (2007) article felt and acted exactly the opposite. In Cäker's article, there was a department that had strong ties to an old customer, whose needs overrode those of new customers, causing chaos in the organization. Cäker summarizes the accountability issue of the case organization by stating: *"Do you know what your customer wants? If you are not sure, ask your boss."* As too tight personal ties to the old customer were able to wreck the whole department, senior managers decided to step up and act as gatekeepers to slow down the communication flow. The company decided that it was better to standardize the procedures to treat the customers equally, opposite to Vaivio (1999)

2.2. METRICS IN A PERFORMANCE MEASUREMENT SYSTEM

"What you measure is what you get" has been a cited widely in discussion about performance measurement. *"This axiom works in practice because performance measures are linked to any of a number of incentives, both extrinsic and intrinsic, that employees value or penalties that they wish to avoid."* (Merchant, 2006). Thus the measures affect the decisions of employees and result new activities. Merchant (2006) divides the measures into three categories. First is market measures, such as stock prices changes or shareholder return. Second is accounting-based measures, which are either defined in residual terms (e.g. operating profit) or ratio terms (e.g. ROI). Third is a broad measurement category, which consists of a combination or either one of earlier two categories plus some financial (e.g. revenue) or non-financial measure (e.g. customer satisfaction). (Merchant, 2006)

The quantitative, financial performance measurements represent a somewhat clear view on the causalities and correlation between different actions and outcomes, but are alone often inadequate. Even with quantities, outcomes are uncertain as additional working hours might be inefficient or counter-productive (Sousa-Poza & Ziegler, 2003). The qualitative, non-financial performance, metrics are harder to measure, but essential for a more comprehensive picture (Kaplan & Norton, 1996). This is emphasized by other studies as well (e.g. van Veen-Dirks, 2010). The balanced scorecard (BSC) combines financial, customer, internal business and innovation and learning perspectives in the same measurement system (Kaplan & Norton, 1992). A problem even with BSC is that the system is unable to track every possible variable which affect company's revenue. *"Given the fuzziness of goals and problems with defining and implementing a successful strategy, one might claim that strategic performance management has more to do with randomness and retrospective sense-making than with rational decision making"* (Tuomela, 2005).

In her study, Lillis (2012) states that *"profit center managers perceive less problems in managing the performance of cost centers when they are able to construct more complete measures of performance, and that they experience strategy implementation problems when measures are incomplete."* In her study, this is illustrated by the relative

easiness of improving the quality while the studied 36 cost profit center managers had problems with managing the customer responsiveness. Balancing those two targets is also difficult since they are somewhat contrary: if company starts to manufacture customer-specific products they will have problems with maintaining their earlier quality as the product has ceased to be generic (Lillis, 2012). This can be reflected on Cäker's (2007) case company, where one department had imperfect measures of performance and in practice had neglected financial metrics and solely focused on delivery time. Even a comprehensive metric can be seen inadequate, if the customers are thought to be very diverse as was in Vaivio's (1999) case company.

Dambrin & Robson (2011) studied the performance in pharmaceutical industry where their study revealed that the sales representatives were not concerned at all about their flawed measurement. Although bonuses accounted to a significant part of their salary, the bonus system itself was so complex that the sales representatives didn't understand it, but believed in the software, which crushed the numbers. Their superiors understood the system and were willing to explain it to the sales representatives, but they never gave them a copy of the actual bonus calculations. As authors write on p. 411: *Transparency would offer opportunities to question the interruptions of traces between drug reps' activities and the performance measures shaping their rewards.* (Dambrin & Robson, 2011)

A system, which lacks transparency, is still unlikely an ideal way to confront the problem. Better solution would be a complete understanding about the PMS, what it measures and what it doesn't as presented in the article by Jordan and Messner (2012). In their study, the managers realized that the PMS was just pointing for the direction and they can't neglect other activities, which are not measured by the PMS. If the company has prior measured performance with non-financial metrics only occasionally or if it lacks the experience completely, the confidence might be low toward the system (Tuomela, 2005).

The balanced scorecard was developed at the Harvard Business School by Kaplan and Norton at the beginning of the 1990s. The BSC asks four questions and thus defines the dimensions the company should focus on at equal enthusiasm. The first question is how

the customers see your company (customer perspective). This is can be measured by analyzing lead times, quality, performance and costs. Second, what must your company excel at (internal business perspective)? Which processes and skills are the most vital and which measures should track them? These could be cycle time, quality, employee skills and productivity. Third, how can the company continue to develop and create value (innovation and learning perspective)? This can be seen from the ability to introduce new products, improve operating efficiency and create additional value for the customers. Fourth, how good has your company been to the shareholders (financial perspective)? How have the cash flow, sales growth, income, return on equity and market share developed? These aspects and their interrelation are illustrated in Figure 2. The beauty of the balance scorecard is that the executives can track whether they emphasize one area at the expense of another. (Kaplan & Norton, 1992, 1996, 2005)

'Think of the balanced scorecard as the dials and indicators in an airplane cockpit. For the complex task of navigating and flying a plane, pilots need detailed information about many aspects of the flight. They need information on fuel, airspeed, altitude, bearing, destination, and other indicators that summarize the current and predicted environment. Reliance on one instrument can be fatal. Similarly, the complexity of managing an organization today requires that managers be able to view performance in several areas at once.' (Kaplan & Norton, 2005)

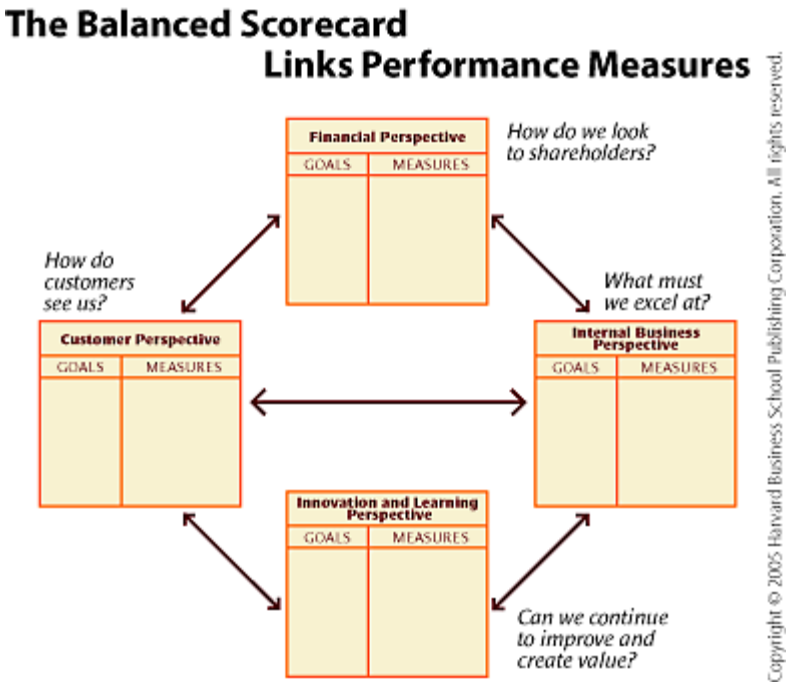


Figure 2: How the different aspects of BCS link to each other. Adopted from Kaplan & Norton (2005)

Usually, the companies are not suffering from having too few performance measurement systems, but having too many. The number of different metrics increases almost unnoticed as employees or consultants bring up new ways to measure issues, which were earlier neglected. The balanced scorecard provides a fast way to see where the ship is heading. The second advantage of a balanced scorecard is that it reduces sub optimization. This is achieved by forcing the executives to consider every important operational measure together so that the improvement in other area won't compromise another's. *'Even the best objective can be achieved badly. Companies can reduce time to market, for example, in two very different ways: by improving the management of new product introductions or by releasing only products that are incrementally different from existing products.'* (Kaplan & Norton, 2005)

Otley (1999) presents a framework for management control systems research which is then tested against three major systems of organizational control: budgeting, economic value added and the balanced scorecard (BSC). Five issues are objectives, strategies and plans for achieving those, target-setting, incentive and reward structure and information feedback loops. Otley's analysis of BSC will be further discussed as it is the

best benchmark for the MCS of the case company. *"The Balanced Scorecard is… a potentially powerful tool… to address the fundamental issue of effectively deploying an organization's strategic intent…"* The details on how to select specific performance measures to be placed in the BSC boxes are still few and Otley assumes that this is left to the tacit knowledge of a management consultant implementing the process. There is not that much guidance on how means and ends should be linked analytically. Otley sees this as a critical flaw and might prevent the formulation of a meaningful BSC. The literature around the system has still shortcomings as target-setting and reward structure are not mentioned and the establishment of information systems and feedback loops are taken for granted. (Otley, 1999).

Sensegiving

In strategic change, the role of CEO has been portrayed as one who is responsible for both setting the direction and for guiding actions to ensure the fulfillment of those plans. After the new direction is chosen, or the old reintroduced (Brunsson, 2006), the employees must be convinced to support the change. "*The initiation of strategic change can be viewed as a process whereby the CEO makes sense of an altered vision of the organization and engages in cycles of negotiated social construction to accept that vision"* (Gioia & Chittipeddi, 1991)**.** If the CEO fails in giving sense to his employees, the change won't happen in the hoped scale.

A similar case is evident with the introduction of a new measurement system or if some new elements are added to the old system. The perception of personnel varies greatly depending on their own attitude and how greatly it affects them. Those people, who are unconcerned about the flawed measurements and are satisfied with crude approximation, are defined as calculative pragmatists by Power (2007). They are only interested in measurement metric's capability to help with steering the behavior and action in the right direction (Power 2007), which is also one key conception of an activity-based measurement system. Being roughly right is often considered superior to being preciously wrong.

Wouters & Wilderom (2008) studied the framework of enabling control in a setting with incomplete accounting information. They advised to address the problem with managers' participation in the design and development process of a control process. This is likely to improve the acceptance of the new system, understanding about the incompleteness and could fix the flaws of the control system.

One way to make sense for a new performance measurement system is to compare it with earlier practice. This reveals if action is taken because of the new indicator or is it just business as usual (Balogun & Johnson, 2004). Other is to use narratives to illustrate the causes as was done at Fiat's factory, where the most successful team to solve disruptive occurrence used to think about them as detective stories (Patriotta, 2003).

2.3. EXPLICIT AND TACIT KNOWLEDGE AS A CONSTRUCTION OF REALITY

There are many ways to define knowledge, where Plato's definition is likely well-known. This is cited in the book of Von Krogh etc. (2000): *"Knowledge is justified true belief".* Von Krogh etc. illustrate this by writing how individual justifies of his or her beliefs in the observations of the world, which depend on their own experiences, views and personal sensibilities. Thus, knowledge is created after encountering a new setting, which is then made understandable by using the existing personal values. Hence the used definition would state that knowledge is *"a construction of reality rather than something that is true in any abstract or universal way."(Von Krogh et. Al., 2000).* If this statement is accepted, it becomes clearer why the sharing knowledge is so difficult in companies today; employees might just disagree on what is said. This makes them less likely to accept knowledge created somewhere else and less willing to implement that. As the knowledge has some subconscious aspects, it is important to divide the knowledge into explicit and tacit.

Explicit knowledge can be put on paper, whether in words or pictures. (Von Krogh et. Al. , 2000) A mathematician can write down a mathematical formula or an engineer can draw a design for a project. If the mathematical formula has been proven, there is little use to argue whether the formula is correct. The difficulty lies in understanding and implementing it successfully. Still, there might be room for discussion if the formula is useful in the specific setting. Various studies have shown how the usage of different investment calculation formulas differs greatly from CFO to CFO (Farragher;Robert;& Sahu, 1999).

The concept of tacit knowledge was created by philosopher Michael Polanyi in his book 'Personal knowledge' (1958). In this book Polanyi makes the case for all knowledge relying on personal judgments. He famously said that "*we know more than we can tell"*. People are not usually aware of how the knowledge they possess and whether it could be valuable for others. Famous examples of tacit knowledge are riding a bike and playing the piano. People with serious brain injuries have great problems with learning to re-learn those skills. Tacit knowledge is also present in the work life, people operate using their own methods, which can be very difficult to transfer to others. The theme

was brought to Finnish discussion by Koivunen (1997) in her book "*Hiljainen Tieto",* where she included all the genetic, physical, intuitive, mythical and experience-based knowledge the human has to the theme. All of this knowledge is very hard to pin down and share in writing**.**

Working closely with an expert, one can acquire tacit knowledge. How the expert solves the problems can be best learned by observation, trying the activity and receiving feedback afterwards. *"These activities help us both consciously and unconsciously to absorb guidelines concerning what data to focus on, how factors are causally related, and how to address problems."* Tacit knowledge often makes it possible for people to reach better results than with explicit knowledge. People have been shown to be able to control complex systems although they have been unable to answer questions about the system they learned to control. (Lubit, 2001). The phenomenon of knowing something is off, without being able to specifically address the issue has been covered extensively in non-academic literature, e.g. Malcolm Gladwell's *Blink*.

Von Krogh et. Al (2000) list five steps for knowledge creation: (1) Sharing tacit knowledge, (2) creating concepts, (3) justifying concepts, (4) building a prototype, and (5) cross-leveling knowledge. As Lubit (2001), also Von Krogh et. Al. (2000) recommends to start sharing tacit knowledge with face-to-face meetings among the team members. This tacit knowledge could then be used to create a new concept or product. After this is done, the team should use market studies, benchmarking and trend studies to build arguments for or against the concept. In the next phase, the team has chosen the best concept and should build a prototype about it and finally share it with the organization at large.

Lubit (2001) divides the tacit knowledge into four categories. A) Hard to pin down skills – "know how", b) mental models, c) ways of approaching problems and d) organizational routines. These are discussed next. People need to practice the skills, receive feedback and feel them. Lubit shares an example of a major airplane manufacturer, where mechanics suddenly couldn't fit the doors on the planes. After an investigation, it turned out that one mechanic who had the knowhow of the matter had

just left the company. Replacing this kind of knowledge is extremely difficult and costly for the company.

The second category resolves around the mental models. These help us to make sense of the world and "*masses of data we are faced with, to extract those parts which are relevant, to formulate an understanding of problems, and to find solutions".* Mental models tell us whether some people are trustworthy or not, whether there is a real opportunity in this case and how we judge risk.

The third category of tacit knowledge is about approaching problems, which essentially means our decision trees. What kind of questions we ask, when encountering a problem, derive from our habits. If all you have is a hammer, everything looks like a nail. How one decides to perceive and approach the problem affects the solution one chooses.

The fourth category is organizational routines, which store plenty of tacit knowledge. The word "routine" itself signals that it something common and predictable behavior pattern. "*Routines include ways of producing things, ways hiring and firing personnel, ways of handling inventory, decision-making procedures, advertising policy, and R&D procedures.* Knowledge is thus integrated into the very organization. As a manager leaves the company, his tacit knowledge might stay as a legacy how things are made. As the tacit knowledge is very hard to pin down, express and transmit, it is easier for the company to protect it. If company wants to acquire other company's tacit knowledge, recruitment from their staff is a good start. However, this is often not sufficient for various reasons. A lonely wolf doesn't necessarily have all the desired tacit knowledge and his knowledge might valuable only in a certain setting. The newcomer doesn't probably have enough power to establish all the organizational routines to the new company – this often not even desired. The difficulties associated with tacit knowledge make it a corner stone of long-term competitive advantage. (Lubit, 2001). Competitive advantage is the way which it creates value for its customers and does so by outperforming its competitors on various dimensions (Flynn et. al, 1995)

Tacit knowledge is important in avoiding the past mistakes or installing old processes again, which were already once abandoned. Tacit knowledge as an organizational

routine can be reflected in this theme to Brunsson's (2006) article *"Administrative reforms as routines."* In the article, Brunsson states that a major component behind recurring reforms is organizational forgetfulness. Three reasons why this happens are high personnel turnover, replacement in top management and the use of consultants. If the company loses experienced line personnel or makes too radical changes in top management, they might end up losing tacit knowledge. This could have been vital in preventing the chosen (and probably already tried) course. "*Consultants – especially if they are different from the last ones – can see the organization with fresh eyes and can thus more easily repeat the old mistakes."* (Brunsson, 2006) is essentially saying that the consultants lack the tacit knowledge of the company and this prevents them for serving their customers in the best way. Brunsson further criticizes the management consultants for being experts at introducing norms, but are either too busy or too expensive to be involved in implementing them. If used in this way, the consultants don't learn about the difficulties or the lack of implementation or about the results of the reform. This makes them eager to push for similar changes in other companies as well.

Other way to take advantage of tacit knowledge in the organizational routine theme is learning from failures. Companies have been generally quite incapable of documenting projects, let alone willing to conduct post-completion audits (PCA) of their investments (Huikku, 2008), which means that the company won't have explicit knowledge of their past mistakes. The theme is further investigated in Baumard's and Starbuck's article *"Learning from Failures: Why It May Not Happen" (2005).* The authors studied 14 strategic failures in a very large European telecommunication firm. They present four different facets for discussion about learning and organizational survival, which all relate to tacit knowledge. These facets are summarized in table 3.

Firstly, learning is essential to survival and success in the face of changing environmental demands. Companies, which don't adjust to major economic and environmental changes, could suffer. However, many companies have bankrupted after betting heavily on some trend (Baumard & Starbuck, 2005). Still, there seems to be a little harm at having a better understanding about the company's internal knowledge base – both tacit and explicit – and share it among the organization to avoid

unnecessary double work. Brunsson (2006) writes how the small changes might appear to be attractive improvements, but as they are implemented, they turn out to be somewhat less simple and beautiful. *"Reforms tend not to deliver what they promise. But their promises are so good that people are easily lured into trying again."* This causes additional complexity to the company, which makes the difficulties even more visible. A failed reform might sink the ship quite as easily as the unimplemented critical change. Also in his earlier article from 1982, Brunsson argues that the biggest problem with decision making is not deciding what to do, but executing it (Brunsson, 1982).

Table 3: Effect of learning on success of the company, four different arguments and their counterarguments. Adopted from Baumard & Starbuck (2005)

Argument	Counterargument
1) Learning is essential to survival and success in the face of changing environmental demands	Many firms have failed as they have changed toward a trend, which has lasted only for a while
2) Adaptive changes by firms do not matter they have only minor effect on populations of firms, but behaviors that spread among the firms are important	It is arguable whether the populations of firms improve or merely change over time
3) Learning is essential for survival, but doesn't create competitive advantage for the survivors. To build strategic advantages, learning must be difficult, rare or impossible to imitate quickly	Sometimes it is possible to maintain advantages for years
4) Beneficial learning depends on supporting the success behaviors, not depending on accuracy of managers' perceptions	Feedback decreases performance more than one third of the time

Secondly, changes do not matter, but spreading behavior does. The counterargument for this is that the personnel of company might just change over time, not improve. The third argument is: Learning might be essential to survival, but it must "*be difficult, rare and impossible to imitate quickly*". Otherwise it can't create long lasting competitive advantage. Still, according to some studies, firms maintain advantages for long time. (Baumard & Starbuck, 2005). This is likely explained by the fact of it being implicit. As Lubit (2001) put it: *"because tacit knowledge is much harder for competitors to copy than explicit knowledge, the ability to capture and transfer tacit knowledge is the key to developing sustainable competitive advantage."* Sharing and storing the tacit knowledge is still risky, as it might become explicit knowledge, which is then easier for competitors to copy. Luckily, the risk is modest as the tacit knowledge can rarely be completely transformed into explicit form (Lubit, 2001).

Fourth argument in the literature review of Baumard and Starbuck (2005) says that beneficial learning depends on strengthening the successful behaviors and suppressing the unsuccessful ones and not depending on managers' perceptions. The problem is that *"feedback actually decreases performance more than one third of the time".* Feedback has better results if it is focused on the tasks, not on the people themselves. Lubit (2001) recommends that tacit knowledge should be transferred with coaching arrangements and opportunities to observe experts rather than trial and error learning.

Barriers to learning

Henfridsson and Söderholm (2000) explored learning implications of introduction of an information technology system. They encountered a "vicious circle"; the more learning was sought after, the more users were observed to have negative learning implications. These are presented in the table 4. Firstly, the managers were interested to make their department look better compared to other departments and were thus unwilling to allow any criticism. *"The technological utopianism held and perpetuated says that if you are in doubt, this is probably a sign of your ignorance".* As the potential of the system was praised, the culture allowed no reflection or critical discussion. This attitude disabled organization's ability to learn. Secondly, a defensive routine labeled as "IT as

administration" was found. The system was seen feasible for its current use only and no further possibilities were searched.

Table 4: Barriers to learning around technology, adopted from Henfridsson and Söderholm (2000)

Espoused theories of action (Justifies)	**Enacted organizational defensive routines:** (Produces)	**Theories-in-use**
The vision of the learning organization	System's potential is praised	No reflection. Discussions and critical reflection prevented in action
The virtues of the workers	Viewing system as administration	No exploration of system's potential for core activities of work

2.4. CRITICAL FACTORS BEHIND THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING SYSTEM

According to Tuomela (2005), the academic understanding about the implementation phase of management control systems is flawed although there has been plenty of discussion about the MCS themselves. The discussion has been anecdotal and reference to research often lacks.

Gutierrez et al. (2014) studied the implementation and evolution of a performance measurement system in a logistics department of a broadcasting company and list three critical elements for success. First, the important and different roles played by the top managers during the change. The roles were as follows: *"the sponsor, providing the necessary resource; the project manager, following up the initiative's progress and demanding achievements from the employees; and a user, being an example of a key PMS user."* Second, the participation of employees is equally critical. Potential ways to engage employees are workshops, training sessions and clear communication of goals. Third, it is always a trade-off between the pace of implementing new performance measures and the data quality. This problem can be at least partially solved by setting up a test department or choosing one of the current teams to test it. These three insights combined resulted improvement in people's behavior, development of organizational capacities and increased performance results.

Whether the system is perceived as coercive or enabling reflects greatly on managers' thinking. An enabling system has four characteristics: First, it can be used to repair the formal system. Second, it provides internal transparency and managers understand the logic. Third, global transparency makes it possible to understand the implications of their activities to other departments as well. This makes it possible for operators in a manufacturing company to check the quality for any station. Fourth, flexibility works as a way to act against the recommendations of the computer model. Aircraft autopilot systems are designed in this way. (Adler & Borys, 1996)

Joseph Bradley chose the ten most important factors behind a successful ERP implementation presented in the literature and tested them out in his 2008's article. The test was carried out with eight different projects in which Bradley analyzed the

importance of the highlighted factors. Figure 3 sums up the important factors into one figure, which is now further analyzed. '*Planning is a management function that precedes all other management functions'* and thus determinates which goals the organization is pursuing and how. Bradley says that '*literature suggests that the higher the level of integration of ERP planning with business planning the more likely the ERP implementation will be successful.'* If the system is built to serve the specific needs of the organization or at least takes them into consideration, it is more likely to be successful. The first proposal is thus:

> *P1. The level of integration of MCS planning and business planning is positively related to implementation project success*

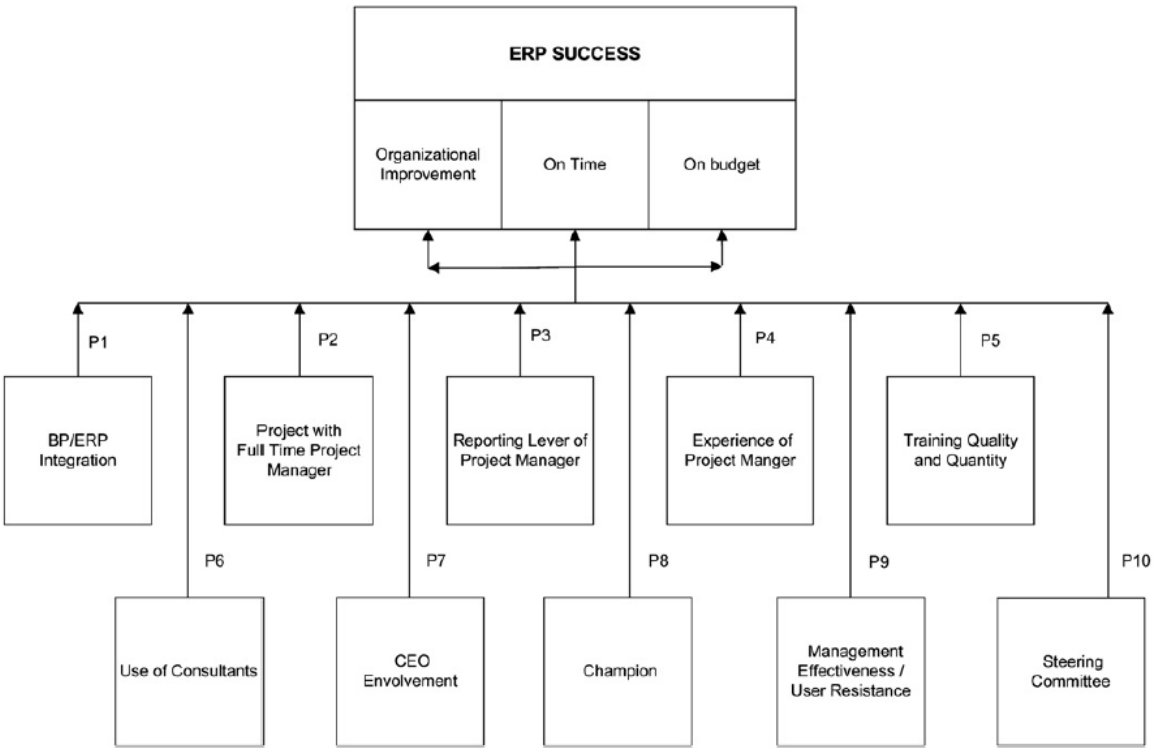


Figure 3: Bradley's research model for the most important factors behind a successful ERP implementation (Bradley, 2008)

After planning, the firm must organize itself into action. Frantz et. al (2002) conducted a survey of 308 chief financial and information officers at 170 organizations, of which 159 people answered yielding a 53% response rate. On a 5-point scale, both CFOs (4.52)

and CIOs (4.72) agreed that a project manager should be assigned full-time to the implementation phase. The project manager needs to have enough power to solve problems fast and steer the action with a steady hand. The same has been proposed in the context of mergers and acquisition (DePamphilis, 2010). The closer the project manager is to the executive group, the better the project fares. This leads to the following two propositions by Bradley (2008):

> *P2. Organizing the MCS implementation project under the direction of a project manager, whose sole responsibilities are the project, is positively related to implementation project success.*
> *P3. An organizational structure in which the project manager reports to the business unit's senior manager is positively related to implementation project success.*

If the project manager is skilled, the project has a better chance to succeed. The person is more likely to be able to avoid the worst pitfalls due to one's experience. The seasoned project manager is in a better position to assess the situation and act accordingly. In general, everyone is somewhat change resistant as the change requires the person to alter his/her earlier practice models and accept new organizational truths. If the reservation of the employee is not handled carefully, the user might change his/her attitude from skeptical to resistant. This might slow down the implementation process or destroy it altogether. To make the person more positive about the project, the organization might motivate the employees with some reward, which would be given, if the implementation was successful. Reward systems have been found to motivate the team to do their best for the project, as well. Thus:

> *P4a. Staffing the ERP project manager position with an individual with extensive experience is positively related to implementation project success.*
> *P4b. Formal or informal rewards to the project team are positively related to implementation project success.*

Bradley (2008) cites the study by Bradford and Florin (2003), where SAP users had been surveyed and a positive relationship between training and perceived

organizational performance and user satisfaction was found. The survey by Frantz et al. (2002) found a similar result from the top executives as CFOs gave on average a 4.57 and CIOs 4.83 on a 5-point scale for the statement *'All employees who will use the software should receive thorough training'.*

P5. The quantity and quality of training are positively related to implementation project success.

Consultants can be helpful in an ERP implementation as the organization might lack their own know-how of the project. They are also able to perceive the situation from a neutral stand toward the organization's power play and know what is truly important. Bradley (2008) cites the study by Davenport (1998), which stresses the perceived importance of consultants as the expenditure on their fees equals the investments in the ERP systems itself.

P6. Use of a consultant for guidance in the implementation project is positively related to implementation project success.

"*Major changes are more and more necessary to survive and compete effectively in this new environment. More change always demands more leadership"* (Kotter, 1990). A major component of a successful project is often the commitment of the top management. Sometimes there could be an individual, who is enthusiastic about the project and is willing to contribute significant amount of time for it. The person doesn't have to be a part of top management and sometimes it can be even better if s/he isn't. A case example could be a situation, where a new system is introduced to a factory, where the labor union is very powerful. If the system is introduced from top to down, it could cause remarkable change-resistance. However, if the management is able to convince one popular worker that the system actually helps the labor force and makes their work easier, the personnel is more likely to adopt it. This leads to Bradley's (2008) next two statements:

P7. CEO involvement

P8. Champion

The change resistance of the employees toward strategic changes is a widely acknowledged problem. In Tuomela's (2005) case study, '*managers were always busy and seldom pleased about increased reporting requirements, the business controllers often found themselves making subsequent requests to the managers with respect to the data provided'.* According to his study, the interactive PMS actually increased the change resistance as some individuals view it even more threating. The increased visibility and strengthened peer accountability makes it difficult for some to accept the changes as they would diminish their power. Some lower-level managers were also reluctant to inform the executives about the wanted numbers. In this study one domestic sales manager tried to sabotage the more customer focused performance measurement system in multiple ways. First, he didn't attend the meetings of measurement team, in similar fashion as sales managers missed Customer Service Meetings in Vaivio's (1999) study. Second, the manager tried to shift discussion from the actual results and future action plans of the system to the specifics of the system. Third, as the manager was responsible for the measurement of marketing activities those were left undefined for the first two years. A similar case was presented in Granlund's (2001) paper in context of ERP implementation, where one financial manager opposed the reform with every possible way.

> *P9. Management's effectiveness in reducing user resistance to change is positively related to implementation success.*

Bradley (2008) cites studies, which emphasize the importance of effective data management and a mean to control the change. Often, a steering committee is formed to monitor the implementation and ensure the change. Steering committee consists usually of key decision makers and depending on how important change is, the higher officer leads it. To make the steering efficient, the committee should meet at regular intervals and often enough to ensure the change. This leads to Bradley's (2008) last proposal:

P10. The use of a steering committee that a.) is headed by the CEO, and b.) meets at least every four weeks is positively related to implementation project success.

These eleven proposals are not statistically tested in the case section as this is a single case study and can't confirm those with reasonable certainty. Instead, these are mirrored to the findings. In Bradley's (2008) paper, eight companies were studied, which had implemented an ERP-system, four of them successfully. The study verified that experienced project manager, the quality of training and the presence of champion were needed for a successful implementation. The use of consultants, the role of management in reducing user resistance and steering committee were found to be indifferent to success or failure. Integration of business planning and IT planning, reporting level of project manager and participation of the CEO were not supported by the success stories. (Bradley, 2008)

3. METHODOLOGY

In this chapter, the research methods used in the case chapter are presented. First, the methods and metrics are presented, the reason for choosing those are explained and then evaluated. The limitations of the methods will be discussed at the end of this chapter whereas the limitations of my study will be discussed in Section 5.3. This chapter describes the time frame of this thesis and how the thesis was executed.

3.1. CASE STUDY

According to Koskinen, et al. (2005) the case study is one of the most used qualitative methods in economic research. In social science, it is often hard, if not impossible, to test the hypothesis in a vacuum, add variables and test hypothesis over a longer time period. Case study was the most logical choice for this study since the research question can be best answered with descriptive case study. Case study can test simultaneously different hypothesis and often uses surveys, interviews and reports as data gathering methods (Järvinen & Järvinen, 2000). In addition to usage rates and user patterns of the system, only qualitative data will be used in this study. Case study describes some particular process in one or multiple companies (Koskinen et al., 2005). This study focuses on one single company as it was possible to gather enough data from one source.

Usage of existing material is advised in the literature (e.g. Koskinen, et al., 2005) as it is the cheapest and usually fastest way to study the phenomenon. Pulssi gathers the data about the usage rate and how successful the managers have been on target reaching. I will use this secondary data in assessing the quantitative metrics: how high is the user participation rate and how well the managers' have achieved the targets. The qualitative secondary data emerges from the user comments on the metrics and weekly activities, which are also stored in the system.

Primary data for my study emerges from the interviews with the managers and observations from the meetings, where the results of the metrics measured by the

performance management system are discussed. These two methods are discussed next.

3.2. THEME INTERVIEW

One form of the research interview is semi-structured interview. This form allows more freedom than the structured interview, which is often based on closed, fixed-response interview, where the questions are pre-defined and are presented in pre-decided order. The most spontaneous form of interviews is unstructured, where the questions are often not pre-defined. (Hirsjärvi & Hurme, 2008)

Semi-structured interview enables the same questions to be asked in different orders and add new questions, based on how the interview is developing. The long answers can be fit in the open questions (Dearnley, 2005), thus giving the possibility for the interviewee to answer with her own words and reveal new angles to the theme. Semi-structured interview form was the best choice for this study.

Silverman (2001) divides the interviews into three parts; positivist, emotionalist and social constructionist. The first one concentrates on what has happened and how the interview represents the full picture. This focuses on "hard facts", which has raised plenty of critique over the years due to the illusive feasibility (e.g. Houtkoop-Steenstra,1996). From Houtkoop-Steenstra (1996): *"In the semi-open research interview questions are presented to the respondent without mentioning the answer categories to be used for coding… When the question is met with an inadequate answer the interviewer uses certain interactional devices in order to generate an adequate answer. This may easily result into answers the validity of which may be doubted."*

The emotionalism study focuses on how the interviewees experienced the change. Silverman (2001): "*Their (emotionalists) concern is not with obtaining objective "facts" but with eliciting authentic accounts of subjective experience… The key here is to obtain rapport with respondents and to avoid manipulating them."* The constructive interview focuses on how the interviewees communicate

3.3. INTERVIEWS

For this study, a total of 12 managers from six different HOK-Elanto Prismas were interviewed. Six of them were sales managers and six logistic managers. This means that half of all the logistic and sales managers of HOK-Elanto Prisma were interviewed as every Prisma has one of each. This gives a good view on the opinions of the whole organization. The interviewed managers were chosen by the chain director of HOK-Elanto Prisma, who said that the chosen managers represented the diverse views of the organization. This was evident during the interviews, some were more positive toward Pulssi than others. Additionally, I interviewed two of the four regional directors, who have a dual role and work as Prisma Directors as well. The chain director of HOK-Elanto Prisma was also interviewed. The organizational chart can be seen in Appendix 4 and 5.

Eskola and Suoranta (2008) emphasize that in the qualitative study the interviewees should be chosen carefully. The interviews are from managers in different business units to attain a comprehensive view on the subject. A tape recorder was used during the interviews, which was allowed by every interviewee. The tapes were transcribed on the same day as the interview. The managers had the opportunity to receive a copy of the transcript to check my notes for misunderstandings and add additional comments, if they considered it necessary.

4. CASE: IMPLEMENTATION OF ACTIVITY-BASED MANAGEMENT CONTROL SYSTEM PULSSI IN PRISMA

Introduction to the case company, HOK-Elanto Prismas

This study focuses on S-Group's subsidiary, HOK-Elanto, and its hypermarket chain, Prisma. HOK-Elanto was formed in 2004 as S-Group's Helsingin Osuuskauppa and Osuusliike Elanto merged. Both companies were consumer cooperatives and the merged company is still one. In 2013, HOK-Elanto had 6300 employees and 583 210 owners, who represented 81.2% of the households of the greater metropolitan area. Thus the consumer cooperative is the largest consumer cooperative of S-group and most-widely owned company in Finland. HOK-Elanto is active in Espoo, Helsinki, Hyvinkää, Järvenpää, Kerava, Mäntsälä, Nurmijärvi, Tuusula and Vantaa with 300 markets. In 2013, the revenue was 1 916 MEUR and it paid 71.5 MEUR bonuses to the owners. HOK-Elanto has 12 Prismas, which are located in Hyvinkää, Espoo, Helsinki, Järvenpää, Kerava and Vantaa. In 2013, the Prismas increased their revenue substantially and their share of the total revenue of HOK-Elanto was 32%, equaling 613 MEUR. Currently, new Prismas are planned to Lommila, Kivistö and Myyrmäki. (HOK-Elanto, 2013)

According to Prisma's web page (Prisma), *"Prisma is the family-friendly hypermarket of the cooperative S-Group. It always has low prices and a diverse product selection. All of the purchases for the home can be made at once. In addition to the extensive food and consumer item selection, Prisma features an extensive selection of products for the home along with leisure and clothing products. The store selections include approximately 11,000 consumer products and the total number of products is approximately 60,000. There are 64 Prisma stores in Finland. In addition to Finland, Prismas are located in Estonia, Latvia and Lithuania and Russia."* Prismas have two business lines: food trade and home and specialty good trade.

About Pulssi

To overcome a shortcoming of BSC, the missing link of ends and means, (Otley, 1999), a framework called Impact Map was created in 2012-2013 by the consultants of Trainers' House. The author of this thesis co-created its applications to different business functions. This was done by connecting strategic goals with daily activities, not just operative metrics. The work was done as a project for Trainers' House Plc in the early 2013. The assignment was to study function by function which operative metrics have been shown to cause an improvement in financials and even more importantly: which weekly activities ensured a positive change in those very operative metrics? As a result, function-specific Impact Maps were created for e.g. manufacturing, sales and research and development. Example of an Impact Map can be seen in Appendix 7. The Impact Map answers the problem presented by Bowman and Tombs (2010): what is the connection of managerial actions and their consequences?

These can be used as benchmarks or examples as a company strives to implement their strategy on a specific frontier, but the actual metrics should always be decided case-by-case by management in cooperation with business controllers. Customer service, for example, can be a leading indicator of company's financial performance (Kaplan & Norton, 1996) or have no strong connection (Cäker, 2007).

When a company wants to measure whether the employees are taking the critical weekly actions or not, Pulssi comes into the picture. Pulssi is a management control system, which focuses on organizational change management by measuring the fulfillment of those recurring weekly tasks. Whereas *"management by objectives"* philosophy focuses on the outcomes or output (Akella, 2003), the "*management by activities"* philosophy focuses on the weekly activities and their measurement. This management philosophy has been earlier studied e.g. by Hixon (1995) and is the cornerstone of Pulssi.

Usually, the users answer weekly to 1-5 questions, which steer the users in the wanted direction. The questions can prepare the user for the next week *"did you send an*

agenda to the clients you are meeting next week?" or inspect whether the user took the agreed action *"did you give feedback to your subordinate?"* In addition to the clicking of yes or no, the users can be expected to write some clarification of their action and the emerged results. Collecting numerical data is also possible as is answering with a photo. The system is usually used by managers and their superiors and is completely transparent; everyone can see each other's answers and comment on them as required earlier by academics (e.g. Cuguero-Escofet & Rosanas, 2013; Jordan & Messner, 2012). This provides a possibility to share tacit knowledge and experiences with different tasks. Pulssi generates the graphs of the earlier usage; how have the numbers or "yes" –answers developed, making it easier for management to follow-up the change. After those have reached the wanted level for long enough, the activity has become an organizational norm and management can change the questions into new ones and "install" new activities in the users. The system can be set to send an e-mail notification, if someone comments on user's answer, enabling an interactive discussion. This enables the organization to transform into learning organization and reflects successfully the first three arguments of Baumard & Starbuck (2005) and could help the organization to avoid the associated pitfalls. First, Pulssi makes it possible to test different changes in a minor scale, gather feedback and act accordingly. Second, due to the transparency of the system, Pulssi can spread new behaviors both horizontally and vertically in the firm. Third, the system makes learning easier. These could result a competitive advantage to the company using the system.

Pulssi can be used with an app on a smartphone or with a browser. On Pulssi, it is possible to monitor the usage rate and numerical data, which can be a yes-no-ratio or number of weekly appointments over the weeks. This provides a view whether the organization is reaching their target and how normalized the action is. Currently, there are over 150 companies using the system. Management consulting company Trainers' House Plc. is developing Pulssi in cooperation with information technology company Cloudriven Ltd.

In the interviews, the system was characterized as follows:

> *"Pulssi is like a notebook, you write what you have done during the week. It reminds me of the important actions and how I spent the week." –Sales Manager (SM) 2*
>
> *"It is a tool, where one can go through the weekly activities and write if you had any improvement ideas. You get good advice and can read what others have done. When everyone writes something, you can read how the things are made in different units. If somebody gets a good idea, it is easy to copy to other units." –Logistic Manager (LM) 6*
>
> *"I am not in the social media, even though I probably should nowadays, but as an old sportsman I see it as an electric practice diary. When you have objectives, which you have to achieve, it (Pulssi) keeps you on track." – Regional Director (RD) 1*

Introduction of Pulssi at Prismas

The chain director of HOK-Elanto Prismas changed in 2012 and the new director wanted to organize the daily work at Prisma hypermarkets in a new way and conduct a strategic change. This *involves an attempt to change current modes of cognition and action to enable the organization to take advantage of important opportunities or to cope with consequential threats* (Gioia & Chittipeddi, 1991). In this setting, it meant new organization. Earlier, the home and specialty good trade was organized in sections, one for entertainment, one for sports etc. At that time, every section had their own sales manager, who was responsible solely for that department. Although this made it possible for each individual sales manager to specialize in their respective field, the organization didn't perform in the best possible way as a whole. The new chain director wanted to alter the structure and tackle this problem and further improve the practices. Thus the section managers were replaced with one sales, who was responsible for the whole home and specialty good trade. To make the new position bearable, a new post for logistic manager was introduced. This meant that some of the earlier sales managers lost their positions and some of them were chosen to continue as a logistic manager. This organizational change was set to take place in the early 2014 and to support the change; the management team of HOK-Elanto Prisma chain chose Trainers' House to support them during the process. The management control system

Pulssi was a part of the contract. The organizational charts are attached as Appendix 4 and 5.

Pulssi was first introduced at HOK-Elanto Prismas in October 2013 as the executive group of Prisma chain started to use it. At that time, there were 14 members in the executive group, consisting of twelve directors of individual Prismas, the chain director of HOK-Elanto Prisma and HR-Director. After three months' usage, they decided to extend Pulssi deeper into the organization. In February 2014, the sales managers, the logistic managers and he service managers of individual Prismas started to use the system. At that time, the executive group had practiced the usage of Pulssi for three months, but to enhance the ongoing change and the implementation of the system, they decided to organize a two-day event in Vierumäki on 4.-5.2.2014. During the event, the ongoing change was discussed and Pulssi was introduced to the managers.

Of those 12 managers, who I interviewed for this thesis, two said that they were absent from that event due to their sick leaves. The two absenter received the materials used at the event and personal training for Pulssi from their Prisma directors. *"My supervisor (the director of the interviewee's Prisma) went this through (how to use Pulssi) with papers in her hands. Obviously, this wasn't a similar event to the one held in Vierumäki. The guys who were there said that the event was a success and they were clearly sold for Pulssi." –LM 4.*

After the launch, the questions have changed two times for the managers. The sales managers have constantly answered for two or three questions whereas the logistic managers have had only one. The usage rate has constantly been over 80% as the holidays are taken into account. Currently, it is not feasible to enter vacation weeks, which makes it more difficult to interpret the real usage rate. In September 2014, a new version of Pulssi, 4.0, was introduced, which boosted the usage rate. The new version improved the visualization of the system, enabled to answer the questions with a picture & like others' answers and made the tracking of the answers easier. Both on Pulssi during the launch and half a year later during the interviews, the users emphasized the improvement. An anonymous Prisma user wrote on Pulssi after the launch of the new Pulssi version that *'New Pulssi is easy to use and very interactive. Let's now share even*

the smallest ideas, which affect the everyday life, on this platform to inform everyone.' The chain director was equally happy and concluded during the interview that *"with the new version of Pulssi, the usage rate and readability of the comments improved significantly."*

Despite the changes, after Christmas season the usage rate has declined and the idea stream has stopped. At the beginning of April, the food trade department's managers are starting to use the system, expanding Pulssi to the whole organization. How should the system and its' use be changed in order to ensure a healthy usage rate without demoralizing the users? Is the system viable for storing knowledge and sharing tacit knowledge? How could it be improved? What are the key elements behind a successful management control system?

The case study will focus on following aspects: First, the usage of Pulssi will be studied from managers' perspective. Second, how well Pulssi works as a platform for sharing tacit knowledge. Third, how Pulssi supports the quantification of customer will be discussed. How these reflect to Bradley's (2008) ten factors behind a successful ERP implementation literature review will be discussed as well.

4.1. USAGE OF PULSSI FROM MANAGERS' PERSPECTIVE

Users have had constantly from one to three questions, which they have answered weekly. Pulssi shows a summary of the answer rates by questions, so one can see how many have answered with a "yes", "no" or haven't answered at all. The user might be tempted to answer only to some questions if answering all of them might compromise them and thus it might be more convenient for the user to simply pass the difficult questions. Hopwood (1972) noted a similar case, when managers altered the financial data to make their situation seem better. Unfortunately, the system shows answer rates only by questions and doesn't tell if the user has answered only to one of the three questions. This prevented the author of this study from analyzing the overall usage rate of user group or whether the usage of individual logistic manager is correlated with his peers (other logistic managers), his work partner (sales manager) or his superior (Prisma director) directly. Luckily, it is possible to convert the data to Excel, where more accurate analysis is possible. On the other hand, some data is lost, e.g. the comments from other users to one's activity are lost in the process. Bearing this in mind, the Excel data is used solely as a supplement to data gained from interviews. The usage rate of logistic managers (LM), sales managers (SM) and Prisma directors (PD) can be seen in Figures 4 and 5. First graph show the overall usage rate during the old Pulssi, which was used during the weeks 1-39/2014. Overall usage rate means in this setting that the user has answered at least one question. This doesn't indicate whether he has commented or liked the other users' activities. As we can see, there is a sharp drop during the weeks 25-32. This is due to the holiday season, which can't be marked in Pulssi.

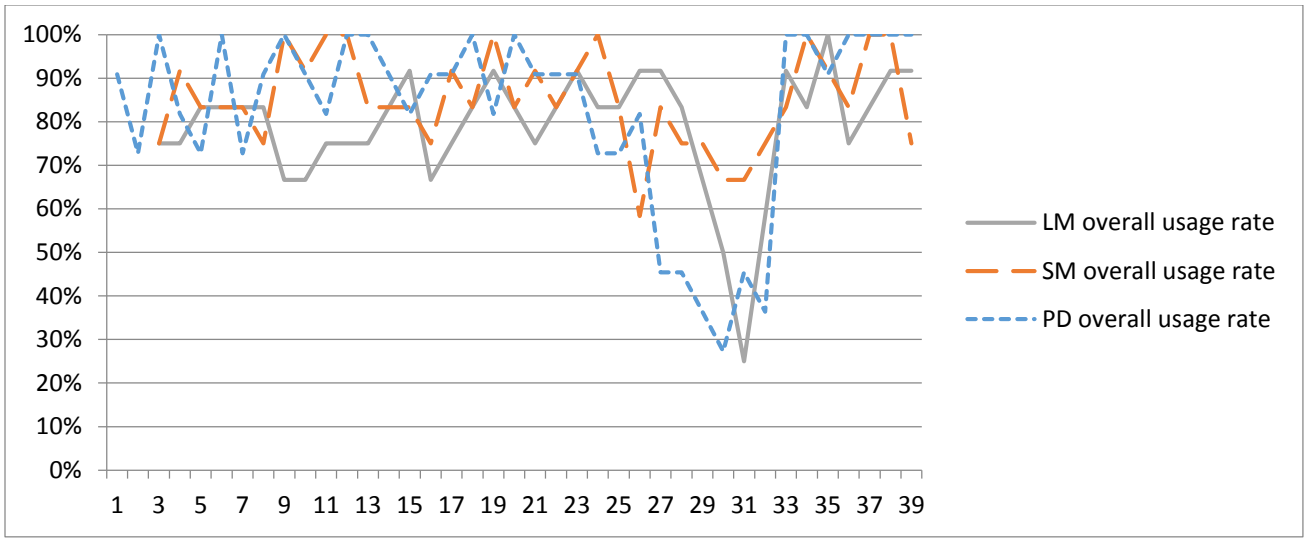


Figure 4: The overall usage rate of Pulssi by titles during the first 39 weeks of use or 1-39/2014 (Old Pulssi)

The usage rate improved after the new Pulssi version was introduced. As in Figure 4, also in Figure 5 the holiday effect is evident. However, the lines haven't quite recovered from the Christmas drop and even more worryingly; the quality of the answers is not as high as it used to be, according to both chain director and data driven from Pulssi. When asked about the differences between old and new Pulssi, SM3 said: "*Using the system has never been the problem. The old version wasn't difficult, but the content (questions) matters. We would need to have more variation (of questions)".*

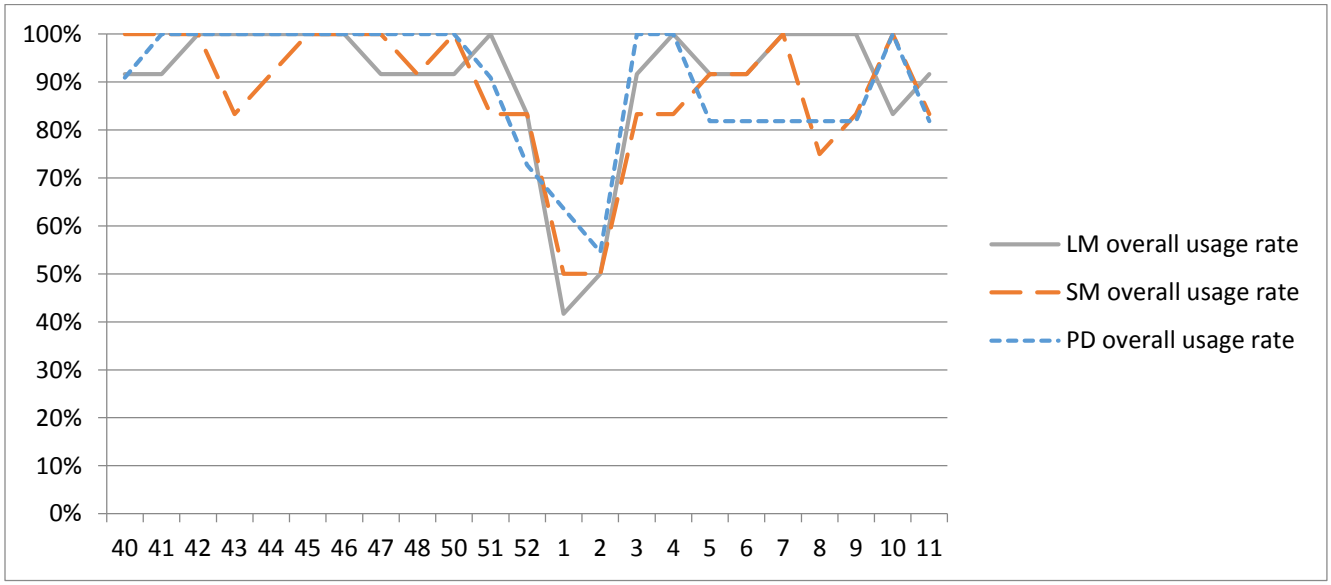


Figure 5: The overall usage rate of Pulssi by titles during the weeks 40-63 or 40/2014 – 11/2015 (New Pulssi)

As can be seen from both graphs, the usage rate is on a satisfactory level although the chain director complained during the interview that *"the usage rate is currently so terrible that it can't be used as effectively as we would like."* Appendix 6 sums the usage rates with new and old Pulssi and how holiday season affects the usage rate. Only three managers said that they had a calendar reminder to Pulssi, others said that they remember it without additional reminders. Still, a joint calendar reminder from the top management was yearned for. This would emphasize the importance of answering the questions and it could clarify the logic behind the questions. If the weekly question changes, the managers have had problems with answering as intended by the top management. *"I have tried to clarify the questions with my comments on managers' activities, but with slim results"* –CD. Judging by the numbers, the problem is likely to be in quality and lowered interest to contribute to the system. During the interviews, the superior's attitude toward the system was highlighted, which is in accordance with Bradley's (2008) study. *"If my superior doesn't think that this is important and doesn't use the system, why should I?"* – LM3. This question is discussed more thorough in Section 4.2.

Naturally, the usage of the system is strongly affected by the setting. According to the chain director, the whole change project, not just the implementation of Pulssi, had a project manager. *"It was on the responsibility of the project manager to coordinate the actions with the consultants and steer the personnel*." However, only two of the interviewed managers knew who was responsible for Pulssi and whom they should contact if they had any problems. *"We didn't have any specific contact person for this."* – *SM2*
"If I had problems, I would naturally inform my supervisor, Prisma director, about it." – *SM2.* Still, as I asked whether he had had problems recently, he reported one, which had prevented him from using the system for two past two weeks. *"This makes me really angry!"* Yet, he hadn't still told about the problem to the Prisma Director since they hadn't been talking about Pulssi for two weeks during their weekly meetings. Although the usage rate seems unaffected by these problems, as it is generally on a good level,

this might reflect in the underlying attitude toward the system: it is used, but not completely embraced.

Logistic Manager 2 summarizes the problem: *"We weren't taken along at all with this project. I have no idea, who is responsible. I need justification and if I don't understand why we are doing something, it is considerably more difficult for me to participate. If I had actual knowledge, what is the upside, it would be easier. For example, if I go jogging, I know that I might lose 5 kilograms."*

Gutierrez et. Al (2014) listed the engaging of employees as one critical element for the successful implementation of the performance measurement system. In this case, it wasn't clearly critical, but as the interviewed said, it had helped. The managers would have likely be more motivated to use the system, if they had been consulted first. The case company has similar logistic managers as the study of Gutierrez et. Al. (2014) had and both groups have probably shared views on management in general. The interviewed logistic managers at HOK-Elanto respected the top management of the chain tremendously, but there was some suspicion whether the top management completely understood what the tasks of logistic managers were. This shouldn't be the case as the top management has been responsible for creating the role in the first place. However, to make the logistic managers more open to the ideas, taking them along to the workshops where the management control questions are jointly decided could be wise. A similar argument can be made for the sales managers as well. This relates to the paper from Booker et al (2011), where the understanding of the aspects of the measurement system was found to improve the willingness to achieve the targets and the role CEO as a 'sense giver' (Gioia & Chittipeddi, 1991).

In the literature, the importance of consultants has been emphasized as drivers for change (Brunsson, 2006) and reason for a successful system implementation (Bradley, 2008). The interviewed managers had different views on the usefulness of consultants. In general, the system was seen so simple that the interviewees saw only a little use for more presence from consultants. *"The executive board got help from Trainers' House, but managing of this is not that difficult that we couldn't handle this. If we are familiar with the technology, then managing is our own activity, which we should be able to do*

ourselves."-RD1. Still, 22% of the managers had wanted more support from consultants to be more familiar with the system. *"If user thinks that the system is difficult to use, logging in to it can be a nightmare." -SM6*

On average, the interviewed managers used 14min weekly for answering questions and commenting other users' activities on Pulssi. Time varied greatly, from 5 minutes to 35 minutes. Managers stated that they were using less and less time with the system as they have become bored with "*answering the same question for half a year". "At first, I spent more time as I was more focused. The time used has declined from 15-20 minutes to current 5 minutes… as the questions haven't changed that often." –SM4.* As Pulssi system is more personal than average corporate IT systems and requires personal input, observations of this kind arise. Pulssi focuses on activities and writing about the same activity can be dull, but changing the question might make it more interesting. However, typing numbers about the same activities to an ERP or business intelligence (BI) system is more normalized. This can be illustrated as follows: Answering each week to a question "did you approach the customers in a different way this week, share your insights?" versus "how many customers did the shop have this week?" Generally, the managers were very positive toward the measurement of activities, instead of just results. The variety of the measurement system as presented by Kaplan & Norton (1992) in their Balanced Scorecard approach was seen optimal in the case company as well. *"There should be even more steering toward correct activities, so that we would be doing the correct things and have better results."* – SM2.

Focus on non-financial metrics was seen positively, which signals in accordance with Booker et al. (2011) that managers understand the cause and effect relationship and are more devoted to the targets. This was evident although the organization lacks strong prior history on the matter, which was seen by Tuomela (2005) vital for success. *"I think that it (trend toward non-financial metrics) is good, as we already have daily numerical data. So it is good to have focus also on activities. I suppose that this is something we should focus more on chain level to ensure homogeneous presence (toward customers) and have less individualism." –LM2.* This support the findings of Lillis (2012), where the more complete measures of performance yielded good results.

The design and use of Pulssi was seen just and thus the system should lead to maximum goal congruence as defined by Cuguero-Escofet and Rosanas (2013).

Pulssi was seen at least partially coercive by half of the interviewed managers whereas the remaining said that it is not a coercive system. During the interviews, two major causes were raised. First, some managers argued that the organizational change has been completed successfully and thus Pulssi has lost the justification to exist. Second, Pulssi is no more that useful for the managers as the idea stream has dried and there is less communication occurring than at the beginning. As the questions have been the same for a long time, the managers have grown tired of those. Yet the system has not been considered unjust, but the focal area of complain was rather its' usage.

The otherwise positive stand toward the system and at least moderately hierarchic organizational culture makes the Finnish setting more close to Singapore than Australia as presented by Harrison (1993). Hierarchy and power-distance have their roots in the organizational structure, which is typical for such a large entity. The organizational charts are attached as Appendix 4 and 5. The power-distance was witnessed and the interviewed managers communicated it both non-verbally and verbally. The interviewed managers improved their posture notably as top management was discussed and there was typical reservation toward the top management. Still, comments from top management on Pulssi were valued very highly and managers' hoped to receive more of those. The importance of superiors' stand toward the system is discussed in section 4.2.

It is evident why managers think that the questions have been unaltered for too long and why the directors haven't taken any action. On average, the managers hoped that questions would be changed every month. The directors, however, stated that questions should change only every three months. Chain director commented on that: "*the questions should change more often than those have so far, that is certain. After two months, we should start to evaluate whether the answers reflect frustration and boredom and how does the usage rate look like. Still we can't constantly change those. It is somewhat boring, but repetition after repetition enables continuity and brings safety.*

We can't alter the focus every second week; we should have a firm goal, which we are constantly approaching."

Still, it can be argued in theory and in practice, based on managers, that Pulssi meets the four requirements of an enabling system as defined by Adler and Borys (1996). Both internal and global transparencies are fulfilled as everyone can see others' inputs - the possibly panopticonal (Foucault, 1977) nature of the system will be discussed in Section 4.3. Flexibility is involved as the system allows answering the weekly questions, even if the user had left earlier weeks' questions unanswered. The directors showed similar flexibility to managers about their activities as logistic manager 4 put it: *"I can be skeptical about the weekly tasks and ask from my superior whether I have to do this or not… There has been this one new activity, which I have done differently from the start point onwards. Just doesn't make sense to do it as our Prisma is much smaller than others."* If this flexibility is then good for the creation of identical procedures in every Prisma, is another matter. Whether Pulssi has the last distinctive feature of enabling system, *"repair"*, as defined by Adler and Borys (2001) is negotiable, however. Managers can't change questions or add new questions by themselves, but they have to lean on their directors. Still, neglecting the questions has been possible with the approval of some of the PDs; if it has been jointly decided that the new procedure is not necessary in their setting. This naturally makes it difficult for the organization to pursue joint goals, if everyone is not playing the same game and destroys the ways for control. The learning of tacit knowledge is harder and the wanted action will not be executed. These issues are discussed next.

4.2. PULSSI AS A PLATFORM FOR ENFORCING ACTION AND SHARING TACIT KNOWLEDGE

"Pulssi is a tool for ensuring that the agreed affairs are executed and a way to transfer best practices and enables learning" – CD. The linkage between Pulssi and business was seen as a primary cause for buying the system for Prisma by the executive board. This is a vital aspect for any system (Bradley, 2008) and was emphasized by the managers as well. 90% of interviewed managers said that the questions have been selected well and they support learning. *"Initially, I wondered that what kind of stalking system this is? Again something new, don't we have enough of these systems? Nevertheless as I started to use it, I realized that this really supports our operations, especially as we check this jointly (with LM and PD). I have received feedback and comments from both my superior and the chain director, this has been extremely nice"* – *SM1.* This comes back to the issue presented in Section 4.1., how superiors' attitude affects the subordinates. In theory, every Prisma director should check Pulssi weekly with logistic and sales managers. The more the system usage is emphasized from a high level, the more important it is seen by the subordinates. In reality, this is sometimes neglected. During the new Pulssi, there has been a question for Prisma directors if they checked Pulssi with their team or not. The results are can be seen in Figure 6.

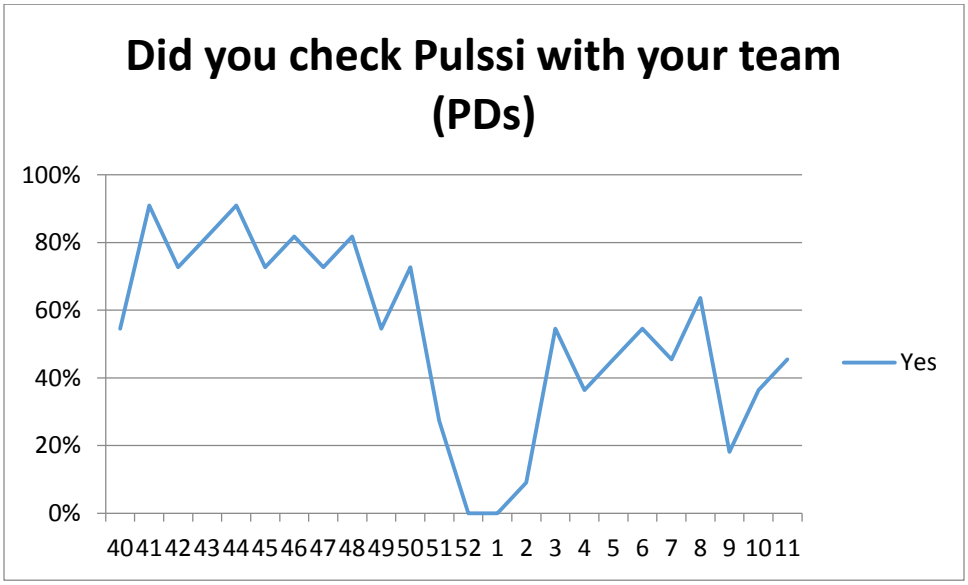


Figure 6: How many of Prisma Directors checked Pulssi with his team. If the question wasn't answered, it is assumed that Pulssi wasn't checked.

Pulssi has been checked less after Christmas and after holidays the “yes” answers never returned to their pre-Christmas level. There is considerable difference among Prisma directors, “yes” answers ranging from as high as 71% to as low as 29%. If Prisma directors have been honest during these 24 weeks as they have answered the question, we should see the effect on subordinates. According to the theoretical background (Bradley, 2008 & Tuomela, 2005 & Kotter, 1990), those more active to discuss Pulssi should have more motivated subordinates. 11 Prisma directors have answered the question, meaning that one Prisma has been without a director during this time. Prisma directors were then split into two groups, depending on how many “yes” they had written. Five of them had answered 50% or less with a “yes”, averaging 40%, making the group “low”. Six remaining had answered over 50% of time with a “yes”, averaging 63%, making the group “high”. Their subordinates’ activities were then studied within these groups. The summary of these can be seen in table 5. Whether the discussion about Pulssi had any effect on sales and logistic managers’ activity is debatable, the activity of logistic managers rose barely 2% and sales managers actually declined by 3%. The correlation is stronger with the length of comments: the logistic managers of active PDs wrote 15% longer and sales managers wrote even 33% longer texts than their counterparts who work as subordinates of less active PDs. The causality is nevertheless not certain; the PDs might seem more active just because their subordinates themselves were initially active, wrote longer comments on Pulssi and wanted to hear their superior’s opinion about those ideas face-to-face.

Table 5: How Prisma directors (PD) answers to question “did you check Pulssi with your team” affected their subordinates’ Pulssi activities

Groups depending on “yes” on Pulssi usage, PDs	PDs: Did you check Pulssi, answered ”yes”, average	SM overall usage rate	SM written characters	LM overall usage	LM written characters
PD low (≤50%)	40 %	90 %	7389	90 %	5396
PD high(>50%)	63 %	88 %	9823	92 %	6225
Difference	58 %	-3 %	33 %	2 %	15 %

The managers agree with statistics: *"That the top management uses Pulssi.. It is extremely important, that commits the people. We see that they have to use it, too."* – SM1. Sales manager 5 agrees: *"I would consider this spying if the top management wasn't involved. The open discussion is an extremely good thing."* Even if the effect of the actions of management is not that vast on the activity of managers, their presence is a basis for any Pulssi use.

Currently, Prisma managers meet their colleagues from other Prisma hypermarkets six times a year, down from earlier monthly meetings. Thus it is more important than before to have a channel for internal communication and knowledge sharing. *"If I think about my typical workday, I have very limited time to call colleagues, but on Pulssi I can read what they have been doing. This is a good tool for managerial duties."-SM1.* Both sales and logistic managers have had specific questions for innovation and idea gathering and sharing. These ideas have then been commented by others and in some cases further developed and even taken as standards on chain level. *"I rarely see other sales managers face-to-face, but with the help of Pulssi I can monitor what is happening on other hypermarkets and what kind of projects or processes are underway. If there is some good insight or improvement idea to my own activity, it is easy to spot. Asking for help is also easy with Pulssi."*- SM6*.*

Pulssi makes the hypermarkets' managers' activities more transparent and ideally makes them more consistent. This could be problematic in accordance with Vaivio's (1999) perception: *"It can be argued, of course, that organizations are locales where different knowledges emerge and co-exist in relative harmony. However, it also seems that organizations are terrains where knowledges collide and where resistance against a particular knowledge can occur."* Pulssi could be seen threating from managers' perspective as they are required to change their working methods and "give up" their earlier knowledge base. Still, there were few signs for that. *"If it steers me in some new directions, which are beneficial for the company, it just as well may do that"* –LM1. Loud counterarguments were mostly time-related: *"Now we have had a major change in our workplace and I hope that we could just continue to work like this. We don't have any*

capacity for further changes, at least not in this year." -LM3.The underlying problem seemed to be the scrutiny and some had hoped to be "left alone."

Dambrin & Robson (2011) raised the issue of possible dissatisfaction about the performance measurement system if it were completely transparent; its logic could be questioned. Pulssi can be used as measurement system and acting accordance to top management wishes might contribute to the career development in some sense, but currently has no direct connection to reward schemes at Prisma. This likely resulted a similar attitude toward the system as in the study by Jordan and Messner (2012), the managers realized that they can't neglect other activities, but they should focus on their routine task as well.

The system is considered at least partially interactive by 83% of the managers and 100% of the directors. In accordance with Simons (1995), the top management uses the interactive aspect to steer managers in the wanted direction. *"I have noticed that just by commenting on managers' activities, I can check how valuable the idea was. E.g. how much did the sales of citrus presses increase after you added those next to the citruses? I am still quite cautious with that as I don't want to encourage (the managers) too much… I am not certain if it is a key to happiness to mix food trade with home improvement." – CD*. Earlier, the system sent e-mail if somebody commented on person's activities. This feature was disabled on the turn of the year 2015. Managers hoped that it would be reinstalled as it made the system more interactive. *"It would be good to have it still, I would use the system more and it would be easier to defend or clarify my stance, if somebody commented on my activities."* –SM4. The worries presented by Tuomela (2005) were not realized in this case; the increased visibility was not seen as a threat by any of the interviewed. The reasons why the system wasn't seen interactive were more practical. One complained that a system is hardly interactive for the user, if it requires a separate logon to the system. Second manager argued that Pulssi can't be interactive if it is used only once a week.

To cope with this problem, logistic manager 3 proposed that the system could involve some incentive to make it more lucrative for the user to log in to the system. *"It wouldn't' have to do anything with money, but rather about variety. The questions could change*

more often and have different forms. For example, there could be a weekly or bi-weekly vote about some concrete matter." Earlier there has been a question about who had the best idea last week. This question type could be further improved by voting about it or asking how the idea was carried forward and what kind of results it yielded. The top management could also highlight the best idea in their perspective and ask how many have already tried it, are going to try it or if somebody already has a better idea how to execute it. This could improve the trying of others' ideas. The "not invented here" – syndrome was evident as many interviewed managers "noted" that some idea wouldn't be suitable for their hypermarkets due to various reasons, in accordance with Lubit (2001).

"Pulssi enables interactivity and has the most important features of Facebook. However, the interactivity of use has much room for improvement. The key elements of the system are: top management sees that the agreed actions are taken (a tool for control) and learning from others, creation, chatting with those people, with whom one wouldn't meet otherwise (sharing of knowledge). Still, we can't enforce the interactivity." – CD.

Interviewed managers pointed out many ways to improve interactivity and how sharing of (tacit) knowledge would become easier. Although the open platform was commonly seen as an advantage, some still hoped that it would be possible to comment privately on others' activities. Sales manager 6 illustrates this as follows: "*it would be nice to comment without others' seeing it. I don't think that everyone gives his best input and tells what he truly thinks. Of course, this (Pulssi) is one kind of social media and is connected with the question about why everyone doesn't want to fully embrace it."* One manager even suggested that directors could have their own forum on Pulssi, which wouldn't be visible for managers. Directors could use it as their own platform for innovation and discuss more openly about the new ideas presented by the managers on Pulssi. Logistic manager 5 hoped that the managers could share their thoughts without the acknowledgement of top management, which could turn the commenting more honest.

To make the discussion more open, sales manager 5 recommends adding a question about recent failure. This would increase the learning as the pool wouldn't be restricted

to success stories. *"If somebody has planned to do similarly, one could note that this is not worth the effort… Of course there is the issue of how to get the people to open up. Some might be unwilling, but at least I could confess."* The logistic manager 5 agrees: *"what went wrong –question would be good."* According to LM5, the users are currently not that willing to share negativities. Somebody might write that the market is clean, but if the market is visited, the ugly truth is evident. This case is similar to the paper by Henfridsson and Söderholm (2000), where the IT system can't be criticized without appearing ignorant. One possible solution would be to start by asking the question from the directors so that they could lead the way. Only later the question would be introduced to managers and even then it might be reasonable to limit the frequency to once a month. Other useful reference study is the one of Simons (1990), where he observed the employees' reluctance to share information without the personal commitment of top management.

The case presents also other aspects of IT system implementation problems highlighted earlier by Hengridsson and Söderholm (2000). Sales and logistics managers are the largest user groups within the system, but they were troublesome little activated during the implementation phase. The questions came from the top level and the users had no say about them. Although the system is used for fulfilling the new strategy, the users might be more enthusiastic about it, if they were asked about the questions first. This could be achieved by organizing workshops in the future where the most important operative metrics would come from the top management, but the managers would have a say on the actual weekly activities, which would be monitored with Pulssi. This way they could openly criticize the shortcomings of the system, which could then be jointly discussed without the fear of appearing ignorant (Henfrisson & Söderholm, 2000). Based on the interviews, this procedure would benefit the managers in the future implementations of the system as well. As Sales Manager 2 said: *"At the beginning, we just got a piece of paper about Pulssi, which we would start to use in the next week. I would have used more time for clarification on why we use this system and how this reminds us in the long run about the critical weekly activities behind the successful change. There was too much "why haven't you done this" –attitude and too little leadership to the actual activities."*

As Lubit (2001) notes, tacit knowledge is often intangible and difficult to express. A major part of managers is the layout of items. After years of working in retail, the interviewed managers had acquired many skills about that. Which items sell the most together and where should the highest margin products be set on the shelf? However, it is extremely difficult to explain these issues verbally. *"One picture would tell more than a thousand words. If the text is too long, nobody has energy to read it." -SM6. "A picture would often tell it the best." -SM5.* LM6 agrees on the matter; there are many opinions about the layout of products and picture would clarify the argument. Although the Pulssi 4.0. enabled answering with a picture, the organization hadn't at the time of writing this thesis taken advantage of it.

In the case company and presumably with Pulssi users in general, the knowledge creation takes a different path from the model presented by von Krogh et al (2000). As stated earlier, the steps of Krogh et al. (2000) were (1) Sharing tacit knowledge, (2) creating concepts, (3) justifying concepts, (4) building a prototype, and (5) cross-leveling knowledge. With Pulssi, the users usually simultaneously share tacit knowledge (1) in the form of created concept (2) and existing prototype (4). After the user has posted their existing idea Pulssi, the discussion (3) about it can begin. It is possible that additional (tacit) knowledge is shared during the discussion and the idea changes to something else entirely. Based on the Pulssi data from Prisma, this was rarely the case and if the idea was modified, it was done by the top management off-Pulssi. The first ones adapt the idea already before the discussion has culminated, but the actual cross-leveling happens as the top management decides to implement it at the organization at large.

Over a third of interviewed managers pointed out unprompted that the Pulssi management control system is very similar to Facebook. Others agreed on that when asked. However, many complained that the system is not very intuitive for them as they are not currently active in the social media and don't have a Facebook account. Many were certain that those, who use Facebook, are more willing to write comments, like on the others' stories and share their experiences. *"I don't personally use Facebook; it is not natural for me to comment on something online. When I started to use this (Pulssi) I*

had the feeling that do I have to start networking at the workplace now? I don't do that in my private life, so why should I do it here? Pulssi is certainly an easier system for those who are on Facebook" –LM3. However, data tells a different story:

Of those interviewed, only two users were on Facebook and both were logistic managers. During the old Pulssi, those two wrote a total of 14875 characters, averaging 7438 characters per users. For other interviewed users, this was 11 810 characters and for all logistic managers 11 336 characters. Although the sample is small, it seems that Facebook or other social media presence doesn't at least increase the length of comments. For all sales managers, the figure was 17879 characters, well above the logistic managers. During the old Pulssi both had five questions and were urged to share their thoughts so the numbers are comparable. A similar trend is evident to new Pulssi: Facebook users wrote 10% shorter texts than their peers. If the number of questions is equalized, sales managers still wrote 21% longer texts than logistic managers. This might reflect to chain manager's view that the sales managers have more diverse job than the logistic managers. This could make it easier for them to elaborate their activities more in the long run. Additional factor could be what one logistic manager said about her sitting less on the computer than her sales manager.

As stated earlier, Pulssi helps the organization to track their key activities, which affect their operative metrics and thus links Pulssi to the quantification of the customer. It should be kept in mind that any company has two kinds of customers: internal and external. The internal customer relates to the efficiency of the company, which can be seen by the customer only indirectly, mostly due to higher prices or defects. This usually has something to do with *muda*, a Japanese word for waste, which is used with Toyota Production System and often exists at factories (Ohno, 1988). Logistic managers wrestle with these issues. One question in Pulssi touched this point directly as the logistic managers were asked, if they had had new ideas how to make the unloading of cargo more efficient. The logistic managers grew tired to this question quite fast. They considered this a good question for some weeks as they had already some ideas in their heads how the system could be improved in the whole chain. After some time, the

idea stream dried. As one logistic manager said: *“We do the unloading at 6:30 AM. Nobody has ideas at that time, nobody is innovative. We just unload it.”*

The external customer aspect is then all about the paying customer, how he sees the hypermarket. The case company gathered impressions from all users at some point about this. The questions could be how the user has helped a customer, sold additional items to her or if the user has walked the customer path to better understand the needs of the customer. The new ideas were then evidently discussed on *Pulssi*. To emphasize the ideas of other users, there was also a question, which was the best idea presented by a peer on this week on *Pulssi*. This is likely to make it easier for others to acknowledge new ideas from other sites. The quantification of customer goes deeper to the organization as the observations from others are further emphasized.

5. DISCUSSION & CONCLUSIONS

5.1. RESEARCH SUMMARY AND KEY FINDINGS

The purpose of this thesis was to answer the following research questions: *"How managers perceive the use of an activity-based management control system Pulssi and does it enable sharing of tacit knowledge and support quantification of customer?"*

In general, the interviewed managers were satisfied with Pulssi and considered it just as defined by earlier literature (Cuguero-Escofet & Rosanas, 2013). The system was seen helpful in sharing knowledge, especially as nowadays the managers don't meet with each other face-to-face as often as they used to. Pulssi gathers information from the users, who are usually at least managers and distributes it among the organization. The complete transparency of each and everyone's inputs was praised and enabled managers to learn from their directors and vice-versa. The information shared by other users was read, but not completely utilized. The "not invented here" syndrome was present as earlier presented by Lubit (2001) as one difficulty in sharing tacit knowledge. The rejection was not complete, however and each of the interviewed manager admitted that they had taken some ideas from Pulssi into use.

The opinions of weekly use of Pulssi were conflicting among the interviewed. Some stated that weekly use takes too much time and hoped that it would be used more rarely, but others thought that the weekly use is reasonable. Still, it was agreed that the users should log in a couple of times a week to enable interactivity and further learning. This could be achieved if the system sent e-mail each time when user's activity was commented on to make it possible to have a reasonable conversation. If a weekly question is specific for the season, a comment read by the user a week later could come too late. There seemed to be a little sense logging in the system daily as most of the users logged in only once, mostly during the Friday afternoon or on Sunday.

The interviewed hoped that they could add pictures to the system, which would make the sharing of tacit knowledge easier as describing things can lengthen their answers too much. The overly long answers are harder to intercept and might cause misunderstandings. This problem relates to organization's mobile devices, which don't have cameras and thus make it impossible to utilize the picture feature of Pulssi.

Organizations, whose managers have smartphones shouldn't encounter this problem. However, the system could be further developed in this matter as well: Currently, answering questions with a picture is restricted to those specific ones, which have are "answer with photo" –type and it is impossible to answer every question with a picture. Attaching other documents to the answer is also impossible, which restrict the potential of the system as a way to communicate any information, whether written, visual or audio.

The system doesn't per se quantify the customer as that should been done before Pulssi is taken into use, but it supports it, if the questions have been chosen wisely. Pulssi can help customers of two kind: internal (focus is on efficiency and employee satisfaction) and external (customer satisfaction, additional sales). Pulssi was seen as a good tool to share the insights of improving those issues as written earlier, but the system enables the follow-up of inputted numerical data as well. The data can be interpreted easily and compare to target levels. As Pulssi is on the agenda of every meeting of top management group, the data is systematically analyzed. However, Pulssi has recently been less on the agenda of individual Prisma hypermarkets and the results are evident. Those Prisma directors' who track Pulssi weekly with their team have also the most active team on Pulssi, as earlier suspected. Sales managers, who had an active Prisma director, wrote on average 33% longer comments. For logistic managers, the same figure was 15% higher. Thus the management's own attitude toward the system clearly affects the subordinates' actions, as earlier presented by Bradley (2008). Although the system was seen very Facebook-like, this didn't reflect to the user's activities, unlike suspected by the users. The only interviewed Facebook users were two logistic managers, who wrote on average 10% shorter comments than their interviewed non-Facebook user peers.

The results of this study contradict the study from Vaivio (1999) in the sense that in his study, the metric system contained a dozen of non-financial metrics, which were generated apparently at least somewhat automatically. The sales force in his study still thought that the system didn't represent the customer well enough, even though the organization had done its best in quantifying the customer. In this study, the managers'

hoped that there would be less questions to assess the non-financial side, the average being a bit over two questions and the highest figure being three. Both in Vaivio's (1999) and in this study, the organizations didn't have much experience in measuring the outputs with non-financial metrics, but the reception was positive in the both cases, in the end. The kickoff at Vierumäki probably helped in this matter as well. Tuomela (2005) warned about the problems of introducing non-financial metrics, if the organization didn't have any prior experience about those, but in this case the reception was positive. This was probably because the inputs to Pulssi don't have a clear connection to the bonus system although the data was used for managing the entities. As much as this was officially the case, the active users who contributed good ideas were generally much well-known in the organization than others and have highly likely a better chance to advance in their careers. At least, the active units and their active managers were specifically mentioned by each interviewed director. To make the users more willing to use the system, linking it to their bonus schemes might be advisable (Healy, 1985).

At the introduction of this thesis, the studies of Kearns (2007) and Ewusi-Mensah (2003) were mentioned. Both of them wrote about the failed IT projects, which were not able to contribute what they had promised. During the interview with the chain director, the result perspective was discussed. Chain director stated three targets with pre-defined metrics for the cooperation with Trainers' House Plc. Those are not discussed in detail, but it is sufficient to say that the objectives were not reached. After one year use of Pulssi, the top management had decided to continue its use and spread it to food trade as well. The logic was that the earlier industry competitors had suffered from emerging of new entrants and macroeconomic development even more than Prisma had. Chain director emphasized the diminishing revenues of Anttila and Stockmann as good benchmarks for Prisma and what could have happened if they hadn't made the strategic change and implemented Pulssi. Furthermore, he assessed that the greatest yields of Pulssi and the change were still underway.

The following proposals from Bradley (2008) were found to affect the managers' perception about the management control system, Pulssi, positively: the integration of the system and business, quality of training, CEO involvement, the existence of

champion and management's effectiveness in reducing user resistance. The role of consultants was seen contradictory, some managers stating that they weren't useful, while others had hoped to see more of them. Bradley's proposal about steering committee wasn't tested although the case company had one weekly. Although the implementation and use of Pulssi has largely been successful, the project didn't have an explicit project manager for the whole project and in the views of managers, it didn't have one even in the beginning as only one out of twelve interviewed managers knew the correct answer. It is still unlikely that the case company had somehow profited from this confusion and thus the role of project manager stays vague.

Limitations of the study

The study has several limitations. First, this is a single case study and certain aspects of the results could be more strongly associated to the case company than to the studied management control system, Pulssi. This goes the other way around as well, some of the success contributed to the system might belong to the case company. Studying the proposals of Bradley (2008) about the ERP implementation couldn't be tested completely as stated earlier.

For this study, 12 of the total of 24 managers working at the home improvement and speciality trade departments in 12 HOK-Elanto Prismas were interviewed. The interviewed managers came from six hypermarkets. This means that half of the organizations managers were not interviewed at all and half of the hypermarkets were neglected. Only two Prisma directors out of twelve were interviewed, which means that their views on the actions of managers received little attention. The activities of other users were studied with Pulssi data, however. The total number of interviews, 15, is still likely to give a fair view of the users of Pulssi in the case company.

5.2. PRACTICAL IMPLICATIONS AND RECOMMENDATIONS FOR IMPROVEMENT OF PULSSI

As noted earlier, the study found Pulssi to be a good system for sharing knowledge across the organization and supporting the quantification of customer. To get the best out of the system, it is advisable to take advantage of all features of the system, e.g. the possibility to share pictures. The developer of Pulssi should make it still easier for users to utilize this feature. Currently, the form of answer (verbal / non-verbal) is predefined and users will not be able to add pictures to their answers, if the question doesn't specifically ask for the picture. This should be changed in the next version in order to make it easier for the users to answer with the most convenient way. Attachments shouldn't be restricted to only pictures, however. As data is cheap nowadays, there isn't reason why videos, documents or other digital material should be restricted.

The interviewed people remarked that there could be question models of different kind and would like to see polls on Pulssi. This would be an effective way of measuring what are thoughts of the users on certain matters. One question model could about the users' opinions on the best practice in different settings. Second could be about an idea, which was presented on Pulssi, whether the users had implemented it and if they thought that it could work in the whole organizations.

Pulssi should be further improved by adding the possibility to mark the holidays in advance and weeks of absence, if required. Currently, it might be confusing for the top management to perceive the usage rate if they don't know how many are on vacation. A vacation cripples the performance curve of the user, if she answers that she hadn't performed the wanted action during that week. If she answers that she performed the task as she wanted to avoid the former problem, the top management receives a false image of the progress of the change program.

To incentivize the users, it might be advisable to gather more user-specific data on Pulssi. If the users had their own profiles, which would show many comments they have written, how many of the questions they have answered etc., the activity of the user could be rewarded. The profile could show the title and site, where the user is working in their profile. This would make it easier to use Pulssi efficiently in large enterprises,

where the employees don’t necessarily know each other that well. The current form of Pulssi doesn’t enable this.

For the forthcoming Pulssi implementations, two themes emerge: engaging of employees and the attitude of the management. To get the best results of Pulssi, the managers or the lowest-level users should be involved in the process as mentioned in the literature earlier. The stance of top management means much as well and they should emphasize the positive attitude to their subordinates as much as possible. One good practice is to place Pulssi on their weekly agenda and discuss the learning with the whole team, as was done in the case company. The most active teams were also the most positive toward the system and wrote longer comments.

5.3. SUGGESTIONS FOR FURTHER RESEARCH

The study concluded that the activity-based management control system Pulssi enables the sharing of knowledge efficiently across the organization. However, sharing of different kinds of tacit knowledge as defined by Lubit (2001) is problematic. The top management, who often decides the questions for Pulssi, has a good change to quantify mental models, ways of approaching problems and organizational routines. Mental models can be clarified by asking what the most important factor is affecting some aspect of the user's work and how she addresses the problem. Ways of approaching problems can be quantified by asking what kind of problems from both customers and employees the user has encountered and how she solved those. Pulssi can verify organizational routines as it focuses on more unified organizational activities. In the process, old practices, someone's tacit knowledge is lost, but new is created. However, the quantification of "knowhow" or hard to pin down skills lives to its name. Although the organization could try to derive those from mental models, it is likely to cause irritation and be an extremely slow process. Thus there is a need for further research on this field. How could the management capture the knowhow of their employees in a quantified form or what is the most sensible way of sharing it?

The proposals of Bradley (2008) couldn't be tested in this single case study and remain to be further studied in the context of management control systems. Especially the role project manager remained unclear and whether it truly has any relevance in a context where each user has a superior, who has been urged to check the system weekly with his or her team.

One way to gain further knowledge about the matter would be studying a case company, which had used a management control system for some months, but had abandoned it due to a low usage rate. The matter would be especially interesting if some departments had remarkably higher usage rate. This would further improve the insight into the managers' way of thinking. In this thesis, the usage rates were quite equal at every hypermarket, the distinctive factor was the length of comments. This might implicate that the chain director, who constantly marketed Pulssi to the managers and directors, is the biggest reason why the system had such a great usage rate, some

90% weekly. A case where the implementation failed would thus have a less active project owner and the differences among the users and the reasons behind the differences might be more easily studied.

REFERENCES

Adler, P. S., & Borys, B. (1996). Two types of bueraucracy: Enabling and coercive. *Administrative Science Quarterly*, pp. 61-89.

Akella, D. (2003, July-September). A Question of Power: How does Management Retain It? pp. 45-56.

Balogun, J., & Johnson, G. (2004). Organizational restructuring and middle management sensemaking. *Academy of Management Journal*, 523-549.

Baumard, P., & Starbuck, W. H. (2005). Learning from Failures: Why It may Not Happen. *Long Range Planning*, 281-298.

Beringer, C., Jonas, D., & Kock, A. (2012). Behaviour of internal stakeholders in project portfolio management and its impact on success. *International Journal of Project Management*, 830-846.

Booker, D., Heither, D., & Schultz, T. (2011). The effect of causal knowledge on individuals' perceptions of nonfinancial performance measures in profit prediction. *Advances in accounting, incorporating Advances in International Accounting, 27*, 90-98.

Bowman, C., & Tombs, S. (2010). Accounting for competitive advantage: The resource-based view of the firm and the labour theory of value. *Critical Perspectives on Accounting*, 183-194.

Bradford, M., & Florin, J. (2003). Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning system. *International Journal Accounting Information Systems*, 205-225.

Bradley, J. (2008). Management based critical success factors in the implementation of Enterprise Resource Planning systems. *International Journal of Accounting Information Systems*, 175-200.

Brunsson, N. (1982). The irrationality of action and action rationality: Decision, Ideologies and Organizational Actions. *Journal of Management Studies*, 29-44.

Brunsson, N. (2006). Administrative reforms as routines. *Scandinavian journal of management*, 243-252.

Cooper, R., & Kaplan, R. S. (1988). Measure Costs Right: Make the Right Decisions. *Harvard Business Review, 66*(05), 96-103.

Cuguero-Escofet, N., & Rosanas, J. M. (2013). The just design and use of management control systems as requirements for goal congruence. *Management Accounting Research*, 23-40.

Cäker, M. (2007). Customer Focus - An Accountablity Dilemma. *European Accounting Review*, 143-171.

Dambrin, C., & Robson, K. (2011). Tracing performance in the pharmaceutilca industry: Ambivalence, opacity and the performativity of flawed measures. *Accounting, Organizations and Society*, pp. 428-455.

Dearnley, D. (2005). A reflection on the use of semi-structured interviews. *Nurse Researcher*, 19-28.

DePamphilis, D. M. (2010). *Mergers, Acquisitions, and Other Restructuring Activities.* Academic Press; 6th edition .

Ewusi-Mensah, K. (2003). *Software Development Failures.* Cambridge, MA: MIT Pess.

Farragher, E., Robert, K., & Sahu, A. (1999). Current Capital Investment Practices. *The Engineering Economist*, 137-150.

Flynn, B., Schroeder, R., & Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage. *Decision Studies*.

Frantz, P. S., Southerland, A. R., & Johnson, J. T. (2002). ERP Software Implementation Best Practices. *Educause Quarterly*, 38-46.

Garfinkel, H. (1967). *Studies in ethnomethodology.* Cambridge: Polity Press.

Gioia, D. A., & Chittipeddi, K. (1991, September). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, pp. 443-448.

Granlund, M. (2001). Towards explaining stability in and around management accounting systems. *Management Accounting Research*, 141-166.

Gutierrez, D. M., Scavarda, L. F., Fiorencio, L., & Martins, R. A. (2014). Evolution of the performance measurement system in the Logistics Department of a broadcasting company An action research. *International Journal of Production Economics*.

Harrison, G. L. (1993). Reliance on accounting performance in superior evaluative style, the influence of national culture and personality. *Accounting, Organizations and Society, 18*, 319-339.

Healy, P. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, pp. 85-107.

Henfridsson, O., & Söderholm, A. (2000). Barriers to learning: on organizational defenses and vicious circles in technological adaptation. *Accounting, Management and Information Technologies*, 33-51.

Hirsjärvi, S., & Hurme, H. (2008). *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö.* Helsinki: Gaudeamus.

Hirst, M. (1981). Accounting information and the evaluation of subordinate performance: A situational approach. *The Accounting Review*, pp. 771-784.

Hixon, M. (1995). Activity-based management: its purpose and benefits. *Management Accounting, 73*(6), 30-31.

HOK-Elanto. (2013). *Vuosikertomus 2013.* S-Ryhmä.

Hopper, T., & Macintosh, N. (1993). Management Accounting as disciplinary practice: the case of ITT under Harold Geneen. *Management Accounting Research*.

Hopwood, A. (1972). An empirical study of the role of accounting data in performance evaluation. *Journal of Accounting Research*, pp. 156-182.

Houtkoop-Steenstra, H. (1996). Probing behaviour of interviewers in standardized semi-open research interview. *Quality & Quantity, 30*, 205-300.

Huikku, J. (2008). Managerial uses of post-completition auditing of capital investments. *The Finnish Journal of Business Economics*, 139-164.

Jordan, S., & Messner, M. (2012, November). Enabling control and the problemn of incomplete performance indicators. *Accounting, Organizations and Society*, 544-564.

Järvinen, P., & Järvinen, A. (2000). Tapaustutkimus eli case-tutkimus. In *Tutkimustyön metodeista* (pp. 78-85). Tampere: Opinpajan kirja.

Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard - Measures that drive performance. *Harvard Business Review*, pp. 71-79.

Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 75-85.

Kaplan, R. S., & Norton, D. P. (2005). The Balanced Scorecard: Measures that Drive Performance. *Harvard Business Review*.

Kearns, G. S. (2007). How the internal environment impacts information systems project success: an investigation of exploitative and explorative firms. *The Journals of Computer Information Systems*, 63-75.

Koskinen, I., Alasuutari, P., & T., P. (2005). Tapaus eli case-tutkimus. In *Laadulliset menetelmät kauppatieteissä* (pp. 154-178). Tampere: Vastapaino.

Lau, C. M., Low, L. C., & Eggleton, I. R. (1995). The impact of reliance on accounting performance measurement on job-related tension and managerial performance: additional evidence. *Accounting, Organizations and Society, 20*, 359-381.

Lillis, A. M. (2002). Managing multiple dimensions of manufacturing performance - An exploratory study. *Accounting, Organizations and Society*, pp. 497-529.

Lim, C., & Mohamed, Z. (1999). Criteria of project success: an exploratory re-examination. *International Journal of Project Management*, 243-248.

Lubit, R. (2001). Tacit Knowledge and Knowledge Management: The Keys to Sustainable Competitive Advantage. *Organizational Dynamics*, 164-178.

Lumijärvi, O.-P. (1990). *Gameplaying in Capital Budgeting.* Turku, Finland: Publications of Turku School of Economics and Business Administration.

Malina, M., Nørreklit, H., & Selto, F. (2007). Relations among measures climate of control, and performance measurement models. *Contemporary Accounting Research*, pp. 935-982.

Merchant, K. A. (2006). Measuring general managers' performances: Market, accounting and combination-of-measures systems. *Accounting, Auditing and Accountability Journal*, pp. 893–917.

Miller, P., & O'Leady, T. (1987). Accounting and the construction of the governable person. *Accounting, Organizations and Society, 12*(3), 235-265.

Mundy, J. (2010). Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organizations and Society*, 499-523.

Neely, A., Adams, C., & Kennerley, M. (2002). *Performance prism: The scorecard for measuring and managing stakeholder relationships.* Harlow: Prentice-Hall.

Ohno, T. (1988). *The Toyota production system: Beyond large-scale production.* Portland, OR: Productivity Press.

Otley, D. (1978). Budget use and managerial performance. *Journal of Accounting Research, 16*(1), 122-149.

Otley, D. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, 363-382.

Patriotta, G. (2003). Sensemaking on the Shop Floor: Narratives of Knowledge in Organizations. *Journal of Management Studies, 40*(2), 349-375.

Power, M. (2007). *Organized uncertainty: Designing a world of risk management.* Oxford University Press.

Prisma. (n.d.). *Prisma*. Retrieved 3 12, 2015, from Prisma: http://www.prisma.fi/fi/prisma/myymalat/prisma-in-english

Sauer, C., & Cuthberson, C. (2003). *The State of IT Project Management in the UK.* Oxford: Templeton College.

Silverman, D. (2001). *Interpreting qualitative data.* Thousand Oaks, CA: Sage Publications.

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

Simons, R. (1995). *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal.* Boston: Harvard Business School Press.

Sousa-Poza, A., & Ziegler, A. (2003). Asymmetric information about workers' productivity as a cause for inefficient long working hours. *Labour Economics*, 727-747.

Talouselämä. (2015, 2 15). *Talouselämä.* Retrieved from Talouselämä: http://www.talouselama.fi/Kasvuyritykset/uusi+yrittaja+roviosta+lahdimme+kun+yhtion+sisainen+startupstudio+suljettiin/a2292210

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

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

Vaivio, J. (2004). Mobilizing local knowledge with ‘provocative’ nonfinancial measures. *European Accounting Review, 13*(1), 39-72.

van Veen-Dirks, P. (2010). Different uses of performance measures: The evaluation versus reward of production managers. *Accounting, Organizations and Society, 35*, 141-164.

Von Krogh, G., Ichijo, K., & Nonaka, I. (2000). *Enabling knowledge creation : how to unlock the mystery of tacit knowledge and release the power of innovatio.* New York: Oxford University Press.

Wouters, M., & Wilderom, C. (2008). Developing performance-measurement systems as enabling formalization: A longitudinal field study of a logistics department. *Accounting, Organizations and Society*, pp. 488-516.

Appendix 1: Demographic questions for all interviewees

1. Describe your work history at S-Group. What are you currently doing?
2. How many years tenure you have in total, S-group and your current position?

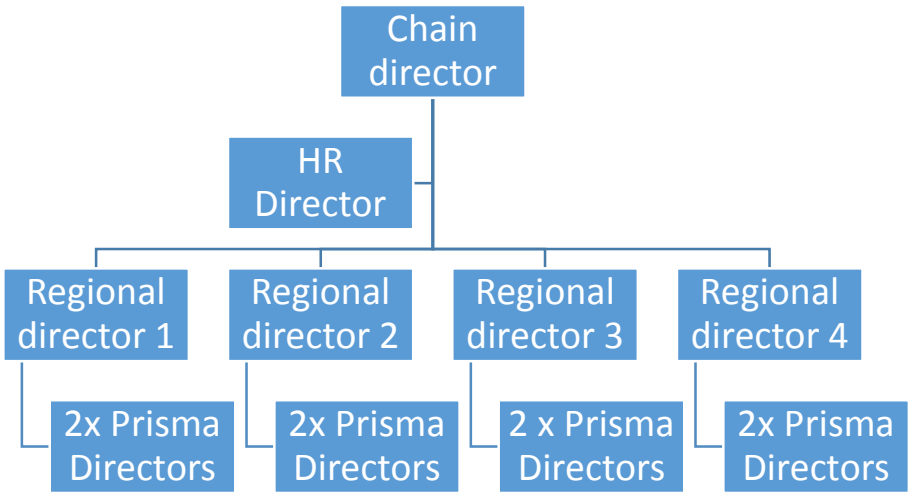
Appendix 2: Questions for managers

1. Could you describe a successful internal process implementation? How was it done?
2. Describe the organizational structure prior to the change, which occurred in early 2014
3. How was the change communicated to you?
4. How was the change project lead? Was your opinion asked during the process? Who was responsible for the implementation?
5. Management chose *Pulssi* program to monitor the change. What is Pulssi and which were your initial thoughts on the matter?
6. How did others react?
7. Describe the first weeks using *Pulssi*. Did you encounter problems? If yes how were those solved?
8. What were the critical factors behind the improved Pulssi usage rate?
9. How important do you think that the consultants were in the implementation phase? Did you encounter them often?
10. How has the information from *Pulssi* been utilized?
11. How have you benefitted from *Pulssi*? What have you learned?
12. Would you describe *Pulssi* as coercive or enabling? Interactive or programmed?
13. How important is the participation of management for the overall usage rate?
14. What are your thoughts about tracking of activities instead of results?
15. What kind of questions would you ask from managers if you were a director?
16. How would you improve Pulssi?

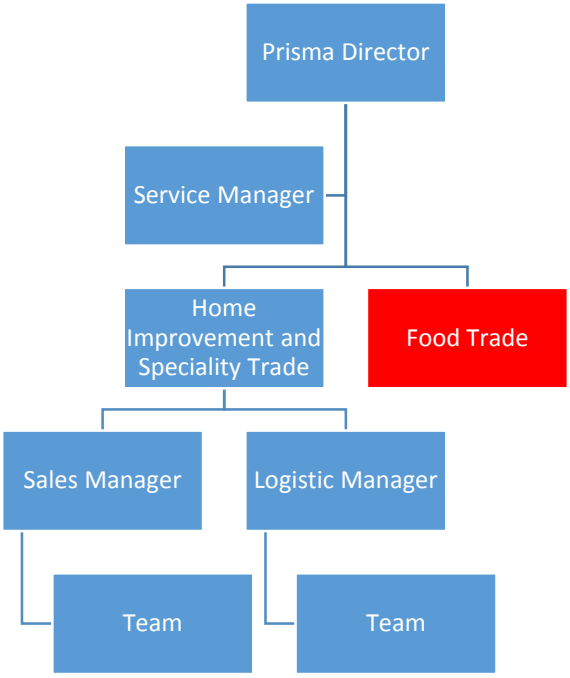
Appendix 3: Questions for directors

1. Could you describe a successful internal process implementation? How was it done?
2. How did you change your strategy for the company in 2013-2014 and why?
3. What is *Pulssi* and which were your initial thoughts on the matter?
4. What lead you to choose *Pulssi* as a new management control system?
5. How did the managers react on *Pulssi*?
6. Describe the first weeks using *Pulssi*. Did you encounter problems? If yes how were those solved? Who has responsible for implementation of *Pulssi*?
7. What were the critical factors behind the improved *Pulssi* usage rate?
8. How has the information from *Pulssi* been utilized?
9. Would you describe *Pulssi* as coercive or enabling? Interactive or programmed?
10. What are your thoughts on the transparency of the system?
11. How important were consultants in all this?
12. If you implemented Pulssi today, what would you do differently?
13. What kind of management practices you use?

Appendix 4: Organizational chart of HOK-Elanto Prismas



Appendix 5: Organizational chart of a Prisma hypermarket.

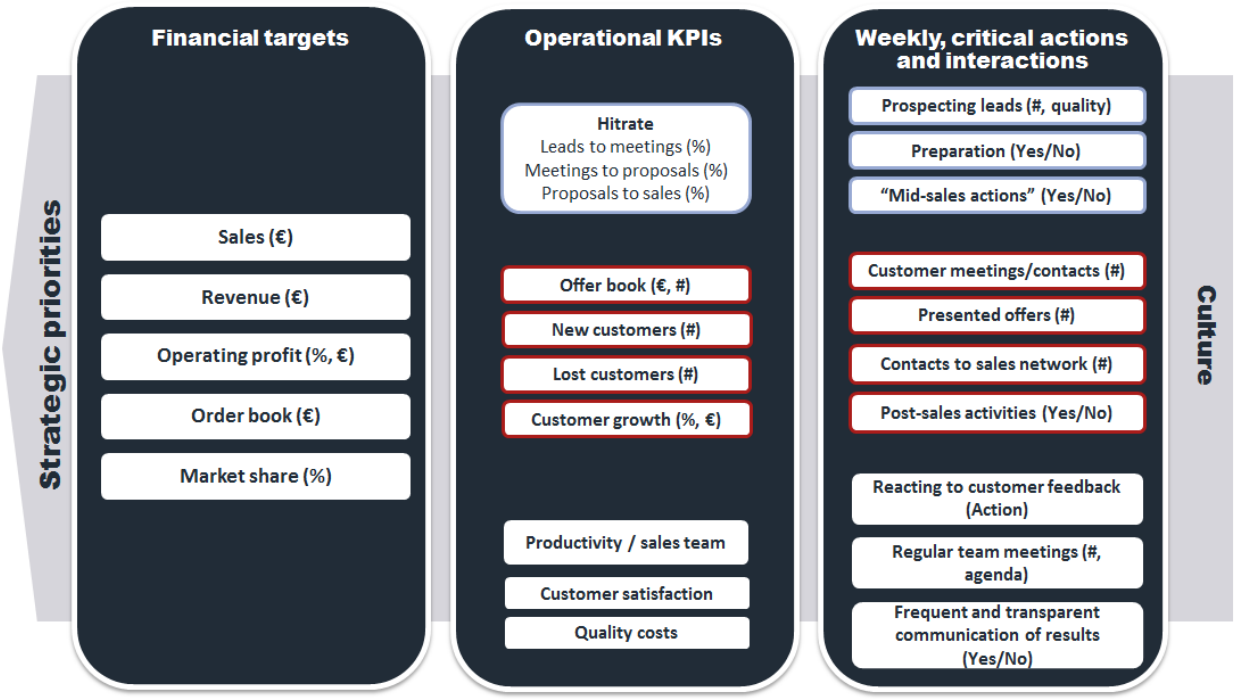


The food department's Pulssi usage is not part of this thesis.

Appendix 6. The average overall usage rate of logistic managers, sales managers and Prisma directors.

	Old Pulssi, total	New Pulssi, total	Old Pulssi, without w25-32	New Pulssi, without w1-2/2015	Old + New Pulssi, w1/2014 – 11/2015	Total, without w25-32/2014 & 1-2/2015
LM average overall usage rate	79 %	91 %	82 %	95 %	83 %	87 %
SM average overall usage rate	85 %	89 %	89 %	92 %	86 %	90 %
PD average overall usage rate	83 %	90 %	91 %	94 %	85 %	92 %

Appendix 7. Example of B2B Sales Impact Map.



Usually, Pulssi measures the realization of the right-hand column: weekly, critical actions and interactions. It is possible to ask monthly questions as well.