

LAPPEENRANTA UNIVERSITY OF TECHNOLOGY
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**Performance measurement and management at manufacturing
company**

Master's Thesis

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Instructor: Pekka Valtonen

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ABSTRACT

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This qualitative research was conducted to identify and evaluate what is effective performance measurement at manufacturing company and evaluate case organization's performance measurement. Objective was to identify critical success factors of effective performance measurement and investigate how case organization was measuring their performance and develop recommendations how they could improve it to be more effective. In the theoretical part of this research previous theories and earlier research from performance measurement was investigated and critical success factors were identified. Recommendations for the case organization were developed after analyzing 13 semi-structured interviews and observations at case organization.

Case organization's performance measurement could not be described to be effective. Organization's issues were related to lack of guidelines and processes, KPIs, communication and incentives targets. Seven recommendations were developed to improve organization's performance measurement to be more effective. Organization should develop new guidelines on how to measure performance. Furthermore, Organization should review their KPIs with more balanced view on performance and have fewer financial measures. Moreover, organization should implement new processes and performance measures and benchmark best practices. Lastly organization needs to have more communication between management and controlling teams and renew their incentive targets in a way that employees can affect the outcome.

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Tämän laadullisen tutkimuksen tavoitteena oli tunnistaa ja arvioida mitä tehokas suorituskyvyn mittaaminen on valmistavassa yrityksessä ja arvioida kohdeyrityksen suorituskyvyn mittaamista. Tavoitteena oli tunnistaa suorituskyvyn mittaamisen kriittisiä menestystekijöitä ja tutkia kuinka kohdeyrityksen suorituskyvyn mittaamista voitaisiin kehittää tehokkaammaksi ja laatia suosituksia, kuinka se voitaisiin toteuttaa. Teoreettisessa osuudessa aikaisempien tutkimusten ja teorioiden pohjalta tunnistettiin kriittiset menestystekijät. Suositukset muodostettiin 13 puolistrukturoitujen haastattelun ja havaintojen pohjalta kohdeyrityksestä.

Kohde organisaation suorituskyvyn mittaamista ei voitu kuvailla tehokkaaksi. Organisaation suurimmat haasteet liittyivät ohjeiden ja prosessien puuttumiseen, suorituskykymittareihin (KPI), kommunikaatioon sekä tulospalkkaukseen. Organisaation tulisi laatia uusia ohjeistuksia, kuinka suorituskykyä tulisi mitata. Lisäksi organisaation tulisi uusia suorituskykymittarit siten, että ne antaisivat tasapainoisemman kuva suorituskyvystä ja ne niiden paino olisi vähemmän taloudellisessa. Organisaation tulisi myös implementoida uusia prosesseja ja mittareita sekä benchmarkata parhaita käytäntöjä. Lopuksi organisaation tulisi kehittää kommunikaatiota johdon sekä controller-tiimien välillä sekä laatia sellaiset mittarit tulospalkkaukseen joihin työntekijät pystyvät vaikuttamaan omalla toiminnalla.

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1 INTRODUCTION

1.1 Background

Businesses today are competing in global markets with continuously changing needs from the market. In order to survive and successfully respond to these challenges top management needs to have timely information on their performance. Nudurupati et al. (2011, 279) stated that performance information for top management have to be integrated, dynamic, accessible and visible which allows agile decision-making and proactive management style. In today's companies' managers need wide-range of information top of financial measures to support their decision making. Top-performing managers need to have timely performance measures for example on customers, production, markets and quality to develop deep understanding on current situation and future development and proactively act based on these measures and achieve overall performance targets. This new dynamically changing business environment has increased interest in appropriate performance measurement (PM) and performance measurement systems (PMS) in last two decades both in academic research and business organizations. (Nudurupati et al. 2011, 279-280)

There has been remarkable amount of academic research on performance measurement frameworks and systems and still there is evidence that innumerable organizations are relying mainly on traditional financial performance measures (Tangen 2004, 726). Neely et al. (1997) highlighted that top performing organizations are balancing financial and non-financial measures and linking organization's strategy with performance measures. Numerous studies have also shown that performance measures should be reflected actively and ensure that they are updated in regular basis to keep measures relevant to organization. (Ghalayini & Noble 1996; Dixon et al. 1990)

Furthermore, Lynch & Cross (1991) and Dixon et al. (1990) have also recognized the importance of link between organization's strategy and performance measurement. Additionally, researchers have common view that one of the most important requirements for performance measurement system is the clear link between performance measures at the different hierarchical level in a company which allows different organization level and units to strive towards the same goal (Tangen 2004, 731).

Even though there has been numerous studies on performance measurement, organizations have been disappointed on results from the use of performance measurement system (Ittner et al. 2003). According to Farris et al. (2011) one of the potential reasons for this dissatisfaction is the discrepancy between suggested processes described in academic literature and what kind of actual processes are found in organizations. This research as well found out that case organization's performance measurement could be more effective if organization could implement recommended practices from literature.

1.2 Research objectives

Key objective of this research is to investigate and evaluate what is effective performance measurement at manufacturing company. This research aims to identify critical success factors for effective performance measurement. Additionally, this research tries to identify what kind of measures organization should have and what kind of recommendations have been developed for these measures.

This research is carried out for multinational manufacturing company in Finland and from the case organization perspective this research aims to evaluate the existing performance measurement processes in the case organization and reveal issues and processes that could be developed to be more effective. Based on findings this research aims to provide clear recommendation list how to company could improve its performance measurement to be more effective both at division level and production unit level.

Based on research objectives, following research questions and sub-questions can be defined. Main research question:

- *What are the features and characteristics of effective performance measurement in manufacturing company*

Following sub-questions were identified to help answer research question and to reach the research objectives:

- *What kind of measures should be used to measure performance?*
- *What are the main weaknesses and flaws in case organization's current performance measurement?*
- *How organization's performance measurement could be improved to be more effective?*

1.3 Methodology

Empirical research can be conducted by quantitative or qualitative research methodologies. Quantitative research usually represents positivistic thinking and in the other hand qualitative research usually relates to hermeneutic thinking (Gummesson 2000). According to Hirsjärvi et al. (2007) quantitative research method usually is related to testing and verifying the hypothesis rather than gathering understanding. In qualitative research the focus is to increase the understanding of a particular issue and the questions are 'why' and 'how' questions (Yin, 2009). This research aims to gain better understanding on effective performance measurement in manufacturing company and that's why this research uses qualitative research methodologies.

Deductive approach tries to develop hypothesis upon a pre-existing theory and then formulates the research approach to test it (Silverman 2013). Single case study was chosen to be research strategy for this research. This strategy allows researcher to obtain comprehensive understanding of the context of research topic and process being enacted. Furthermore, case study design has been used in many well-known studies within performance measurement and management research. Case studies

can include use of both quantitative and qualitative methods but this research only uses qualitative methods such as semi-structured interviews and observations. Mono-method choice means that this research uses one research approach (qualitative). This research was limited to specific time frame which means this research has cross sectional time horizon. Lastly, complementary data collection was used such as interviews, observations and extraction for this research. This research's research philosophy is introduced in figure 1.

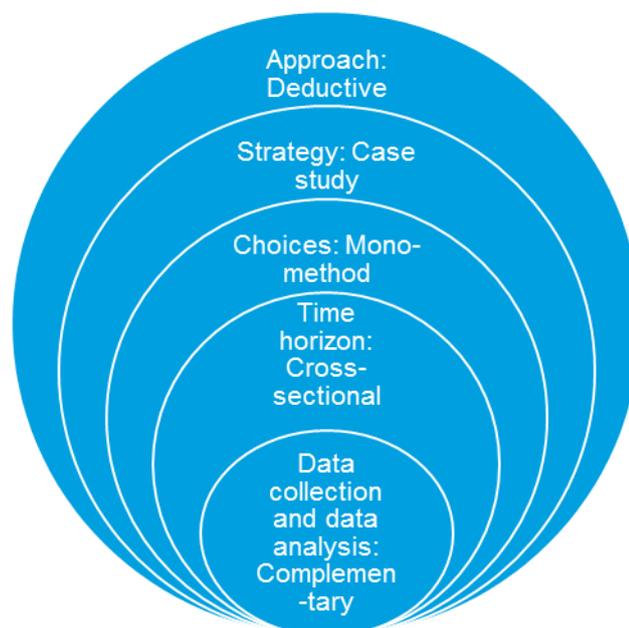


Figure 1. Research onion for this research

The execution of this research consists of four parts: research scope, literature review, case study and finally conclusion and recommendations. Execution of the research is presented in figure 2. The first phase of this research is the introduction to research scope. This phase aims to help to understand the background of this research and what are the objectives and research questions. This part also introduces limitations and the structure of the research.

Second phase of this research is the literature review which aims to present theoretical foundation of the research which is later used to evaluate case organization. Literature review gives introduction to basic concepts of this research

such as performance measurement and performance measurement frameworks. Furthermore, literature review includes recommendations from earlier researchers how to design performance measures and characteristics of effective performance measurement. Literature review was mostly done by reading relevant journals and research papers from different science and business journals.

Next phase of the research is the empirical part. Within this phase researcher developed deep understanding of case organizations performance measurement activities with semi-structured interviews and observations. These interviews were conducted both for division level managers and production unit level managers which allowed researcher to develop good overall view of organization's performance measurement. Furthermore, observations were made from different internal reports and processes. All in all empirical part of this research focused on developing understanding of organization's performance measurement activities which lead to the conclusion and recommendations made in empirical part of the research. The final part of this research presents empirical finding from this research. These findings include identified weaknesses of current performance measurement activities both in division and production unit level. Finally, the last part of this research includes recommendations to case organization how it could improve its current performance measurement to be more effective.

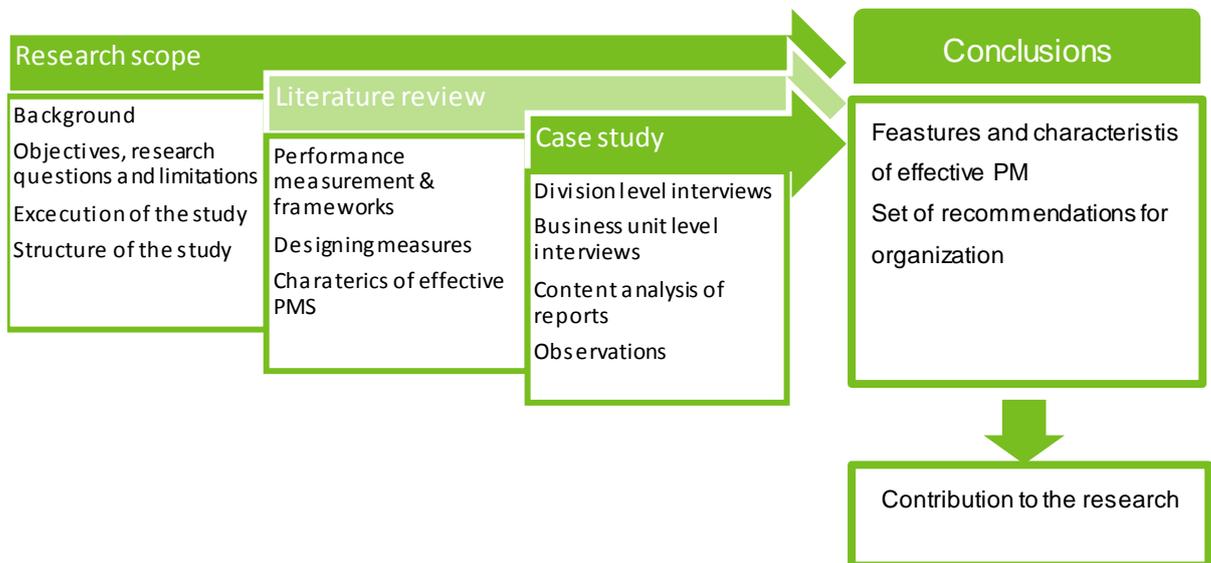


Figure 2. Execution of this research

1.4 Structure of the research

This research can be divided into theoretical and empirical parts. The theoretical part of this research includes chapters 2 and 3. These chapters represent the theoretical foundation of this research and include relevant and the most influential literature in the investigated research field. Additionally, chapter 3 goes more into details on how to design performance measures based on the academic literature and provides a set of critical success factors for effective performance measurement. The empirical part of this research consists of four chapters. Chapter 4 focuses on explaining this research's methodological choices and methods. In chapter 5 the focus is on empirical findings from case organization based on the interviews and observations. Finally, last two chapters (6-7) are focusing on analyzing the results of this research and introducing recommendations for case organization how it could improve its performance measurement to be more effective. Inputs and outputs from each of these chapters can be seen in figure 3.

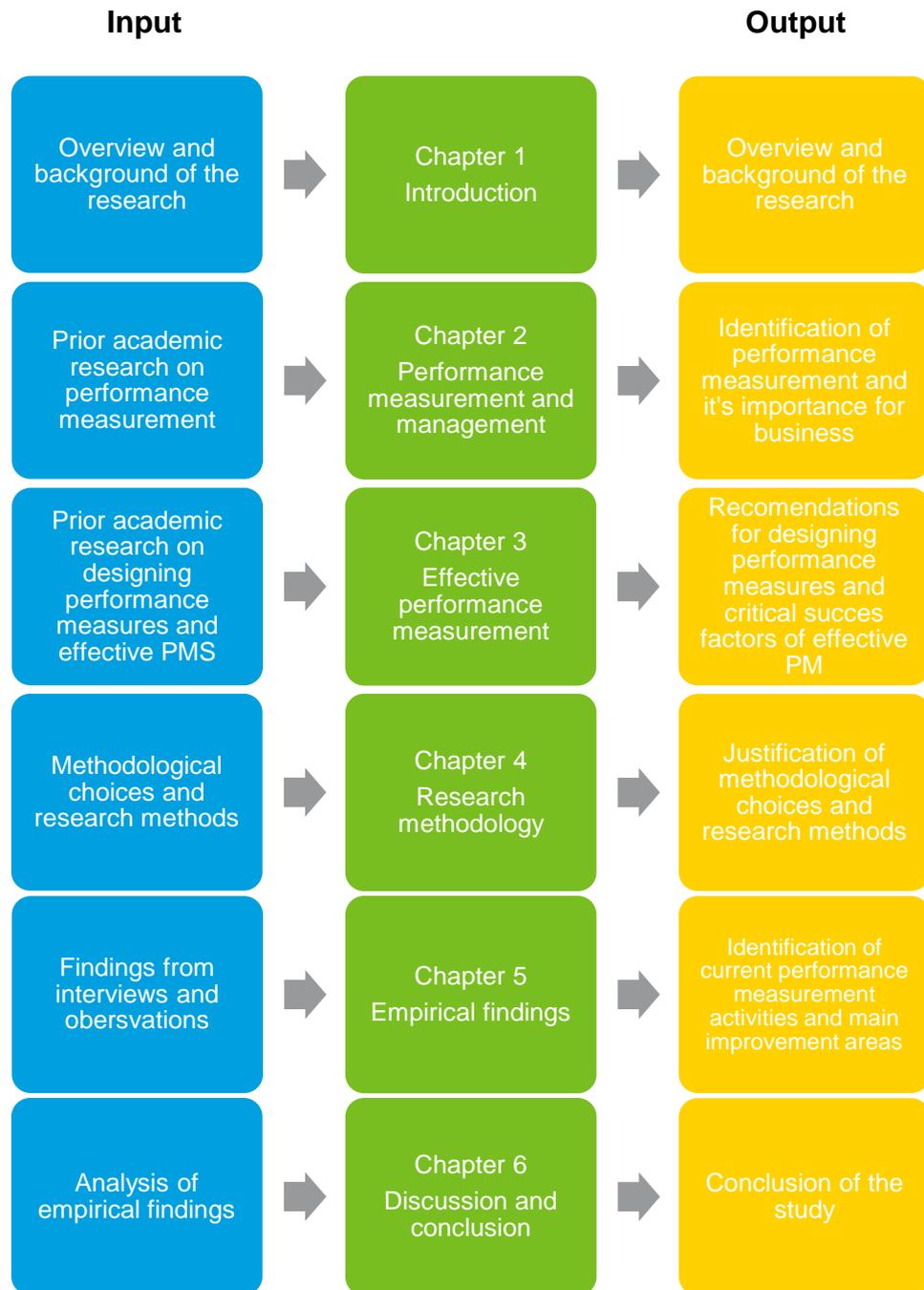


Figure 3. Structure of the research

2 PERFORMANCE MEASUREMENT AND MANAGEMENT

2.1 Performance measurement

Many authors have tried to offer definitions for performance measurement but there is no clear consistency between these definitions. Neely et al. (1995) stated that performance measurement is a matter which is often discussed but rarely defined. To help with this issue authors declared probably the most widely used definitions for performance measurement. According to Neely et al. (1995) *“performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action”* and *“a performance measure can be defined as a metric used to quantify the efficiency and/or effectiveness of an action”* (Neely et al. 1995).

Moullin (2003) argued that Neely’s definition does not give much guidance to organization what it is essentially all about. Author suggested that his definition could show clear purpose of performance measurement and emphasize the assessment both value an organization creates to its shareholders and the way organization is managed. According to Moullin (2003) performance measurement can be defined as *“performance measurement is evaluating how well organizations are managed and the value they deliver for customers and other stakeholders”*.

Performance measurement is widely used in businesses all over the world. All organizations are measuring their performance, they might do it systematically on daily or monthly basis or on an ad hoc-basis when they need it, but even though they are doing it one way or another. (Parker 2000, 63) There is wide range of reasons why organizations are measuring their performance. These reasons might be such as:

- Identifying success
- identifying if they are meeting customer requirements
- Helping them to understand their processes
- Identifying bottlenecks, waste and improvements points
- Ensuring that their decisions are based on facts (Parker 2000, 63-64)

According to Lebas (1995) performance measurement can be used to help understand current situation in the organization. Measurement can be also used to support designing of action, plans and defining future targets. Additionally, these performance measures can be used to support continuous improvement and planning activities when targets have been set. Lebas (1995) stated that “*performance measures provide feedback of the results and help to reinitialize the cycle again*”. The need for performance measurement is widely recognized and it can be seen as enabler for successful management in organization (Bourne et al. 2003; Bourne et al. 2014). Additionally, performance measurement should be firmly linked to organization’s performance management process (Bourne et al. 2003).

Performance measurement can create important value for organization when it is implemented correctly to organization. First of all, when organization is measuring something it clarifies what is important in organization to everyone. This forces management team to develop relevant and specific goals to organization and these appropriate measures will communicate framework to employees how to work towards organization’s overall target. Furthermore, organization can use these measures to check if organization’s objectives are being achieved by analyzing results and comparing them against to targets. Lastly organizations can use their appropriate measures to challenge their own strategy. (Powell 2004, 1020)

2.2 Performance management

There are various definitions for performance measurement in academic literature because it has multiple purposes depending on the level of organization it is utilized. There is still lack of conceptual clarity what does performance measurement and performance management mean. From time to time performance management and performance measurement are mistaken for each other. Radnor & McGuire (2004) noted that some of the researchers do not make distinguishing between these two terms or uses them as interchangeably.

According to Hannula & Lönnqvist (2002) performance management can be seen as management which is based on information formed by performance measurement. This definition means that performance management is based on performance measurement information and it is used to manage and boost performance and it helps to identify what has been achieved.

Bititci et al. (1997, 523) described performance management as process in which organization manages its performance in line with its organization and functional strategies and objectives. Bititci et al. (1997) highlighted the objective of performance measurement is to create proactive closed loop where these organization and functional strategies and objectives are transformed to business processes, activities, tasks and employees. Additionally, information from performance measurement system can be then used to make proper management decision within organization.

2.3 Performance measurement systems and frameworks

Same as for performance measurement and management researchers do not have complete agreement on a definition for performance measurement system (Franco-Santos et al. 2007). Performance measurement system can be defined as *“a set of metrics used to quantify both the efficiency and effectiveness of actions”* (Neely et al. 1995). Simons (2000, 337) defined performance measurement system as *“information system that managers use to track the implementation of business strategy by comparing actual results against strategic goals and objectives. A performance measurement system typically comprises systematic methods of setting business goals together with periodic feedback reports”*.

The dissatisfaction towards traditionally used financial measures in the 1980s led academic researches to develop strategically aligned performance measurement frameworks which are encouraging a more balanced view. (Ghalayini & Noble 1996; Bourne et al. 2000) Since then there have been wide-range of different kind of performance measurement frameworks and as well systems available that can be used to measure performance. These systems and frameworks aim to help organization to define and set measures which reflect their organization's objectives and assess their performance accurately. (Kennerley & Neely 2002, 1225) Performance measurement system does not only include individual measures and measuring can only see as one part of using the measures. There needs to be official forum where these measures can be reviewed and ideally agreed on actions based on results. (Bourne 2000, 761)

Numerous researchers have identified the need for more relevant, integrated, balanced, strategic, improvement oriented and dynamic performance measurement systems. (Bititci et al. 2000, 693). To answer this recognition of new needs researchers have developed frameworks for performance measurement, such as:

- Balanced scorecard (Kaplan & Norton 1992)
- Performance pyramid (Lynch & Cross 1988)
- Performance prism (Neely et al. 2001)
- The performance measurement matrix (Keegan et al. 1989)

Neely et al. (2000) and Strieska & Spickova (2012) noted that balanced scorecard, performance pyramid and performance prism have similar view on performance measurement systems. Authors have listed these similarities between these frameworks:

- Translate organization's strategy into achievable goals
- Provide an overview of the organization's performance
- Provide a "balanced" picture of the business by combining financial and non-financial and internal and external measures
- Be integrated across the organization's functions and hierarchy
- Provide measures for analyzing past and to plan for future performance by measuring both, the results and their drivers
- Pay attention to how the measures affect employee motivation
- Be the basis for employee incentive
- Define cause-effect relationships between performance dimensions
- Use multi-dimensional metrics, and
- Allow change by being dynamic. (Neely et al. 2000; Strieska & Spickova 2012)

2.4 Importance of performance measurement systems

The importance of performance measurement has been widely recognized. Over the past years organizations have understood the importance of performance measurement for their business. (Neely et al. 1999) Organizations have understood that with performance measurement it is possible to reach their business potential and it is possible to gain competitive advantage. Increasing competition and

dynamically changing business environment have driven organizations to search ways to monitor and evaluate their organization's performance. (Neely 1999; Robinson et al. 2005) Performance measurement is usually used to help organizations to shift in to the right direction and it gives tools to revise business goals and also if needed it can be used to re-engineer the business processes. (Kulutunga et al. 2007; Sousa & Aspinwall 2010). It is clear that old expression "*if you cannot measure it, you cannot manage it*" is still valid and important lesson for top management in organizations about importance of performance measurement. Organizations have nowadays realized the importance of performance measurement and they see it as part of fundamental ways to improve organization's profitability, enlarging their market and strengthen their position in industry. With performance measurement, it is possible to measure organization's performance and evaluate if organizations have achieved its targets and what will need to be achieved in the future. (Kulutunga et al. 2007; Baldwin et al. 2001)

Academic researches highlights that a contemporary performance measurement system can have number of tangible and intangible outcomes. According to Martinez & Kennerley (2005) performance management system can bring better management skills, enhanced organizational capabilities such as teamwork and healthier organization behaviors such as employee attitudes and accountability. Additionally, it can improve organizational performance by improving productivity and company image and increasing customer satisfaction and somewhat profitability. Authors have defined these outcomes to technical and social system outcomes.

First of all the effectiveness of performance measurement system will depend on how performance measurement systems is linked and aligned with the strategy of the organization and value drivers that lead to strategic success (Chenchall 2005; Ittner & Lacker 2001). Measures which are aligned with strategy will help organization to achieve better performance by closing the gap between what organization are measuring and what they should be actually measuring. This allows

organization to give more rapid feedback if organization is moving to right direction and on effectiveness of organization's strategy. (Ittner et al. 2003)

In addition to improved organization performance literature also suggest that use of performance measurement system can have social outcomes for organization. Chearskul (2010) dived these social outcomes to four categories based on Kaplan & Norton (1996) research:

1. Clarifying and translating vision and strategy
2. Communicating and linking objectives and measures
3. Facilitate planning, setting, aligning strategic initiatives and finally
4. Enhancing feedback and learning.

First of all, use of performance measurement system can be used to establish common consensus within organization's top management on strategy (Kaplan & Norton 1996; Lingle & Schiemann 1996) performance measurement system could also improve organization's communication of vision and strategy to employees (Tangen et al. 2000; Kaplan & Norton 1996). According to Nudurupati & Bititci (2005) the use of performance measurement system will improve organization's competence to pinpoint competitive advantages and weaknesses of business.

Next social outcome of performance measurement system is communicating and linking objectives and measures. With effective performance measurement system organization, can communicate to employees what is important to the company. With this communication, it can also help to improve understanding on what kind of results organization is looking for. (Lawson et al. 2007; Mayne 2001). Performance measurement system can be used to improve communication between staff and management. Finally, organization can raise employees' understanding on of the organization's long-term targets and strategy. (Kaplan & Norton 1996; Adriessen 2004)

Third social outcome of performance measurement system is facilitating planning, setting and aligning strategic initiatives. These outcomes are more related to

employees' behavior, culture and management. According to multiple authors, effective performance measurement system can improve staff motivation. (Kaydos 1999; Malina & Selto 2001; Simons 2000; Ukko et al. 2008) It can also encourage more proactive management style in organization and improve quality and speed in decision making process. (De Waal 2002; Martinez & Kennerley 2005) Bititci et al. (2006) have also found out that use of performance measurement system will encourage participative and consultative management style within organization. Furthermore, researchers have noticed that performance measurement systems can improve organizations culture towards health and safety and endorse continuous improvement culture. (Martinez & Kennerley 2005; de Waal 2002; Neely et al. 2006)

Final social outcome is related to enhanced feedback and learning. Studies indicate that the use of performance measurement systems can improve knowledge about the organization. For example, employees will understand more deeply how the business and business processes work (Martinez & Kennerley 2005; Kaydos 1999). Researchers have also found out that performance measurement systems can increase transparency and visibility of manager's responsibility and actions. (Martinez & Kennerley 2005; Chung et al 2006). According to Johnston (2008) strategy-aligned performance measurement can have multiple benefits for organization such as:

- Informing the organization about strategic direction
- Communicating strategic priorities
- Creating a shared understanding
- Monitoring and tracking the implementation of strategy
- Aligning short-term actions with long-term strategy
- Encouraging behavior consistent with strategy
- Making both goals and means visible
- Making clear the links between the performance of individuals and sub-units, and sub-units and overall organizational performance

- Promoting integration among various organizational processes
- Limiting overemphasis on local objectives, thus reducing sub-optimization
- Focusing change efforts
- Permitting and encouraging organizational learning (Johnston 2008)

2.4.1 Balanced Scorecard

The most well know and commonly used performance measurement framework is balanced scorecard which was developed by Kaplan and Norton in 1992. This framework was developed in response to dissatisfaction towards traditional financial performance measures but it was not meant to replace financial measures but to complement them (Kaplan & Norton 1996, 75). Balanced scorecard allows organizations to add non-financial measurements to traditional financial measures and it provides managers more balanced overview of organization's performance. One of the key strengths of balanced scorecard is the way how it can be used to link performance measures with the business unit goals and strategy and by that improve managerial decision making. (Otley 1999, 374-375)

Furthermore, balance scorecard's idea was to cut down amount of measures and help managers with overload of information by limiting the number of measures used. Balanced scorecard forces managers to focus on key measures which are the most important for the organization. (Kaplan & Norton 1992, 71-72) Balanced scorecard framework has been developing through years and its overall objective has been to bring strategy closer to employees and trying to link operational practices with strategic intent. (Malmi 2002, 19)

Kaplan & Norton (1992, 72) stated that balanced scorecard provides answer to four basic questions:

1. How do customers see us? (customer perspective)
2. What must we excel at? (internal perspective)
3. Can we continue to improve and crease value? (innovation and learning perspective)
4. How do we look to shareholders? (financial perspective)

Based on these four question Kaplan & Norton (1992) formed four different perspectives: customer, internal, innovation and learning and financial. Kaplan & Norton (1992) suggested that organization should be viewed from these four perspectives and organization should develop, collect data and analyze it relative to each of these perspectives. Financial and non-financial measures should be tied throughout all perspectives and they should be based on strategy of business (Kang & Fredin 2012, 639). Furthermore, these four perspectives should be linked to each other by cause-and-effect relationship (Kaplan & Norton 1992, 71). Figure 4 introduces these perspectives and it includes example goals and measures for each of these perspectives.

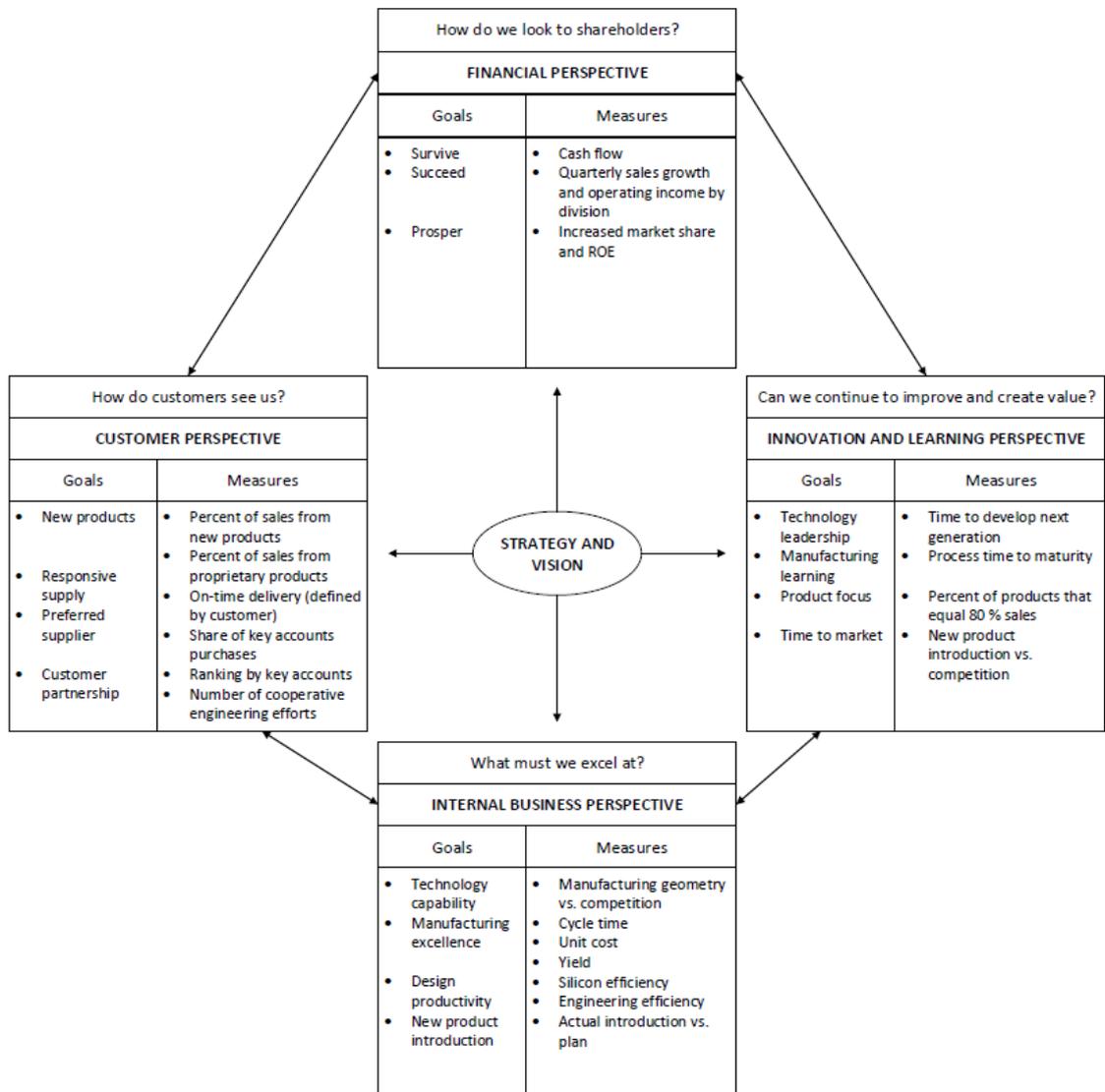


Figure 4. The Balanced Scorecard (Kaplan & Norton 1992, 72)

Customer perspective can be used to evaluate how customers see the organization. These measures could be related on brand awareness, image, customer satisfactions, customer retentions and customer's profitability. These measures are so called leading indicators which financial measures will subsequently show later. For example, brand awareness usually leads to preference which usually leads to sales growth. (Slater 1997, 38-39)

With internal perspective managers should measure business processes which have the greatest impact on customer satisfaction. For example, these aspects that have effect on customer satisfactions are cycle time, quality, employee skills and productivity. Organization needs to point out and measure processes and core competencies in which they need to excel to create customer satisfaction and value. Kaplan & Norton (1992) stated that first step is to define and decide which processes and competencies they must excel in, set clear goals and then generate measures for each of these goals. (Kaplan & Norton 1992, 75)

Originally Kaplan & Norton (1992) named third perspective as innovation and learning perspective. Later on there has been different variations to this but most of the researchers are referring to this as learning and growth perspective. According to Kaplan & Norton (1992, 75) innovation and learning perspective can be used to measure how effectively business can adapt to changing conditions by developing new products and improving their internal processes. Key focus on this perspective is on the employees of the organization and perspective should be measuring how organization exerts efforts to provide possibilities to employees to grow and learn in their domain. (Al-Najjar & Kalaf 2012) According to Kairu et al. (2013) learning and growth perspective is related to ability of employees (skills, talents, knowledge and training), the quality of information systems (systems, databases and networks) and the effects of organizational alignment (culture, leadership, alignment and leadership). This means that business process will only succeed if the employees are adequately skilled and motivated and they are supplied with accurate and timely information and they are led by effective leadership.

The fourth and last perspective is the financial perspective. This perspective signals whether the company's strategy, implementation and executions are contributing to bottom line improvement. Financial perspective is usually measured with profitability, growth and shareholders value. (Kaplan & Norton 1992, 77-78) With financial perspective managers can evaluate total performance of all functions of organization. Financial perspective can be divided in three different themes:

1. Revenue, growth and mix
2. Cost reduction
3. Production improvement and asset utilization

Companies can increase their profits by selling suitable products with favorable market mix. Cost reductions aim to decrease unit costs by improving product, process and supply chain. Lastly, asset utilization aims to improve financial results by optimizing working capital and fixed asset's utilization. Companies' long term financial targets are usually to create financial return to investors. All strategies, programs and actions should help business unit to achieve financial targets. (Kaplan & Norton 1996, 62)

Even balanced scorecard has faced some criticism on its architecture and key concepts of the framework. Neely et al. (1995) and Otley (1999) noted that balanced scorecard's perspectives are too simplified and it does not take into account other important stakeholders such as competitors. Balanced scorecard has been also criticized to be more controlling and monitoring systems rather than developing and improving tool (Ghalayini & Noble 1996, 76-78). Ghalayini et al. (1997) also stated that balanced scorecard was mainly designed for senior managers to give them tools that gives them overall view of organizations performance thus it is not applicable to factory operations level. Furthermore, according to Neely et al. (2000) balanced scorecard can be used to identify what is important and what should be measured but framework does not provide comprehensive guidance how proper measures should be identified, introduces and more over how to use them to manage the business.

2.4.2 Performance Pyramid

Researches have common view on that one of the most important requirements for a performance measurement system is that there should be clear link between performance measures at the different hierarchical level in a company. This allows different organization level and units to strive towards the same goal. (Tangen 2004,

731) Lynch and Cross (1991) developed performance pyramid i.e. SMART system to help organizations to achieve this link. In general, the performance pyramid framework acts as link between organization's strategy and operations. Performance pyramid tries to achieve this link by translating organization's objectives from top-down and at the same time measures from bottom-up. The main goal of performance pyramid is to create strategic goals to the operative measures which allows to have strong causality between them. (Lynch & Cross 1991)

Performance pyramid includes four levels as shown in figure 5. Authors argued that with performance pyramid it is possible to communicate and link organizations strategy and goals to different organization levels. (Lynch & Cross 1991)

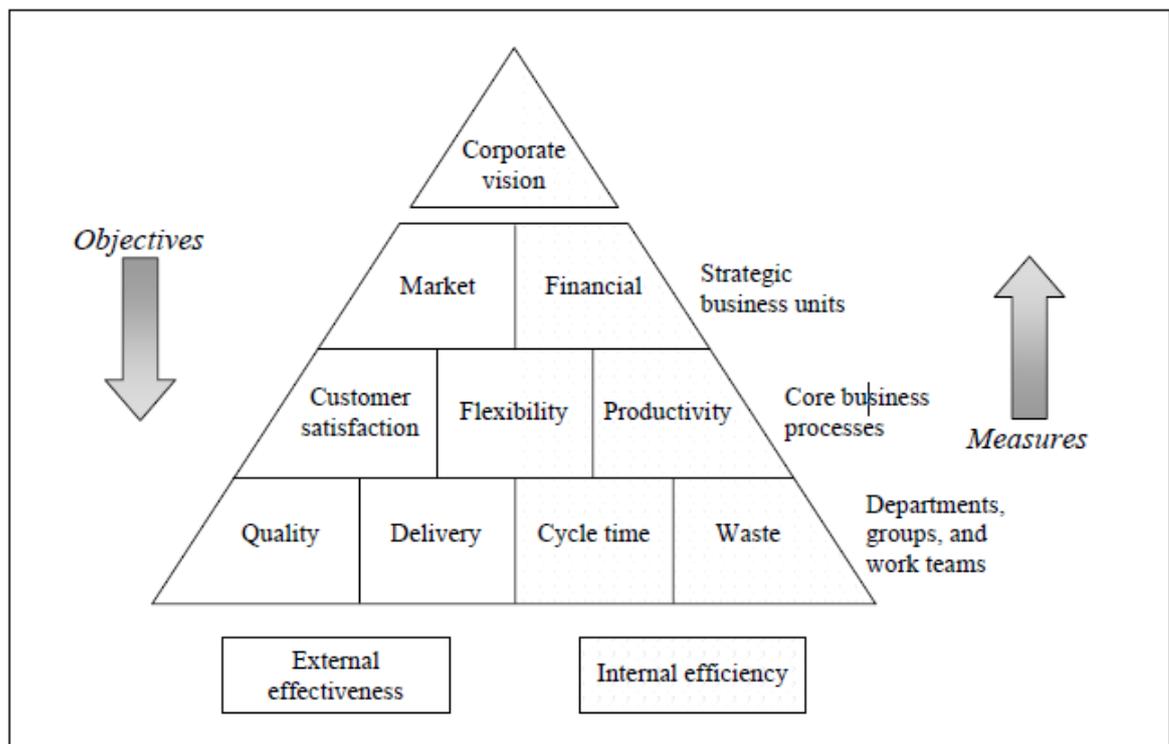


Figure 5. The performance pyramid (Lynch & Cross 1995)

Performance pyramid can be represented by a four-level pyramid of objectives and measures (Ghalayini et al. 1996, 73). Performance pyramid is hierarchical set of building blocks which starts from corporate vision and ends up with specific

operating issues and individual performance measures at the bottom. Performance pyramid can be used to gather relevant information to three main stakeholder groups: customers, shareholders and employees. Framework divides organization in to four different levels: 1) corporate management, 2) strategic business units, 3) core business process and 4) departments, groups and work teams. (Lynch & Cross 1991)

The process starts by defining corporate vision and then transforming this vision to specific business unit objectives for these strategic business units. At the second level of performance pyramid strategic business units define objectives in both market and financial terms. These objectives can be short-term targets of cash flow and profitability and for example long-term goals can be related to growth and market position (Tangen 2004, 732). On the third level are core business processes which are supporting the business. For these core processes, tangible operating objectives and priorities must be developed in terms of customer satisfaction, flexibility and productivity. At the bottom level, departments, groups and work team's performance measures are based on quality, delivery, cycle time and waste. Bottom level operational performance measures are then used to achieve higher-level results and ensure successful implementation of the company strategy. (Lynch & Cross 1991, 64-67; Ghalayini & Noble 1996, 74)

2.4.3 Performance Prism

Performance prism has been described as second generation performance management framework which aims to assist performance measure selection and tackling the pitfalls of previously developed frameworks such as balanced scorecard and performance pyramid. Andy Neel & Chris Adams developed this framework in 2002. The most significant difference compared to previous frameworks is that performance measurement should be derived from the stakeholder satisfaction rather than from strategy. Authors stated that strategy can be formulated only after stakeholders' needs are identified. Neely et al. (2002) argued that one of the

greatest deception of performance measurement is that all the measures should be based on organization's strategy. Authors highlighted that performance measures can be used to evaluate if you are moving in to the right direction. With these measures manager, can evaluate if they are going to achieve the target they have set out in the first place. In the other hand strategy is not about this destination. Instead strategy should be answering how to reach this destination. (Neely et al. 2002)

The Performance Prism aims to manage the performance of an organization from five interrelated 'facets':

- Stakeholder satisfaction – who are our stakeholders and what do they want?
- Stakeholder contribution – what do we want and need from our stakeholders?
- Strategies – what strategies do we need to put in place to satisfy the wants and needs of or our stakeholders while satisfying our own requirements too?
- Processes – what processes do we need to put in place to enable us to execute our strategies?
- Capabilities – what capabilities do we need to put in place to allow us to operate our processes? (Neely et al. 2002)

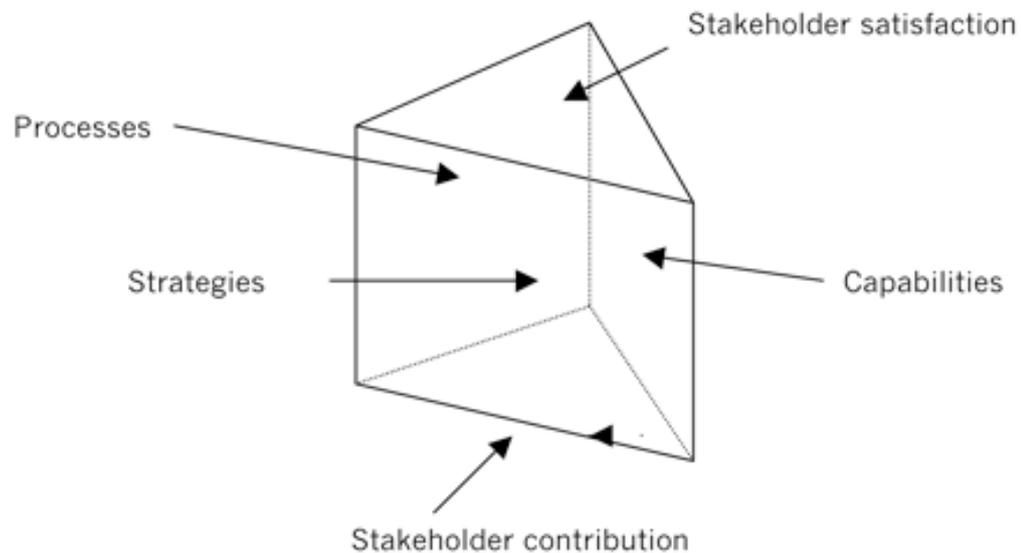


Figure 6. The five facets of the performance prism (Neely et al. 2002)

Neely et al. (2002) tried to explain in their article reasons behind why model has these constituent components. Authors argued that organizations aspiring to be successful have clear idea who their key stakeholders are and what they want from organization. Also, these organizations have clear idea what strategies they need to follow to assure that value will be delivered for key stakeholders. Furthermore, they also know which processes these strategies require and what competences they need to have in place to execute these processes. Finally, the most exceptional organizations have clear idea what they want from their shareholders – employee loyalty, customer profitability, long term investments etc.

Stakeholder's satisfaction is the first facet of the prism. Main idea of the first face is to identify all the important stakeholders and recognize what they want and need. Neely et al. (2002) accused that previous frameworks did not include wide range of stakeholders. Usually these frameworks only included shareholders and customers, when in reality there are many other stakeholders such as suppliers, partners, employees and regulators. Neely et al. (2001) noted that every stakeholder have a significant impact on the performance and success of an organization.

The second facet is all about strategies. As previously mentioned according to performance prism, performance measures should not be derived from strategy. According to the authors, at first organization needs to identify stakeholders and what they want and need. Only after that it is possible to develop strategies which are aiming to make sure that organization is able to satisfy the wants and needs from several stakeholders. Therefore, the second facet of performance prism recommends that organizations should ask themselves: “*what are the strategies we require to ensure that want and needs of our stakeholders are satisfied*”. (Neely et al. 2001, 5-6)

The third facet of performance prism focuses on processes. This facet aims to identify processes which organizations need to have in place if organization wants to achieve its strategy. Usually these processes are related to creating new products and services, generating demand, fulfilling demand, planning and managing the organization. Organizations should then develop specific measures related each of these processes. (Neely et al. 2001, 7)

The fourth facet is called capabilities. Processes cannot work on their own. According to Neely et al. (2001) capabilities are combinations of people, practices, technology and infrastructure which are enabling the execution of organization’s business processes now and in the future. Without right capabilities, it is impossible to execute or improve these processes. Managers should identify these capabilities which are required to operate key processes. Finally, when these processes are identified managers are then able to identify measures that allow the organization to asses if they have all the required capabilities in place.

The fifth and final facet focuses on stakeholder contributions. According to Neely et al. (2001) this facet has been included as separate component. The idea behind fifth face is that delivering value is not only organization’s responsibility. Stakeholders are also expecting value from the organization they are in relationship with. For example, employees want to have secure place to work, decent salary and

recognition. But in return organization expects employees to contribute to business, to develop expertise, to turn up for work and loyalty.

The main message of the performance prism for managers is that if organizations want survive and prosper in today's increasingly complicated and rapidly changing world, they need to identify and understand what their numerous stakeholders really wants and need from the organization. Furthermore, organization as well needs to identify what they want from these stakeholders. Lastly, managers need to link and align organization's strategies, processes and capabilities to meet these diverse set of wants and needs from stakeholders in a way that organization can deliver value to all stakeholders. (Neely et al. 2002)

3 EFFECTIVE PERFORMANCE MEASUREMENT

3.1 Financial and non-financial measures

Organizations should choose their performance measures based on what organizations want to achieve as their objectives. Traditionally organizations have measured their performance mostly measures related to finance such as sales turnover, return on investment and profit. There are multiple benefits from using financial measures such as they are widely accepted and they can be used to compare different business units to each other easily. However, use of financial measures have been widely criticized in academic literacy because financial measures have multiple limitations and researchers have noted that performance measurement systems can not completely lean on financial measures (Johnson & Kaplan 1987; Bititci 1994; Tangen 2004).

Traditional financial measures have been claimed to have multiple problems such as short-term focus, backward-looking, lack of predictive ability and little support to identify causes or solutions and inadequate consideration to “intangible assets”. Researchers have also noted that these traditional financial measures might encourage short-term or incorrect behavior and with these measures it is hard to capture important changes in business until it is too late. (Ittner & Larcker 1998; Neely 1999) Additionally, measures which are developed from costing and accounting system also encourage organizations to minimize variances in expense of continues improving (Johnson & Kaplan 1987; Lynch & Cross 1991).

Ittner et al. (2003) suggest that use of non-financial measures can overcome these problems mentioned before and allow managers to make better actions and decisions, with this information managers can evaluate performance of an organization more widely. All in all, financial measures are alone not sufficient and suitable for representing organization’s performance in today’s ever changing and highly competed business environment (Robinson et al. 2005).

Researchers have argued that non-financial measures should supplement or replace financial measures. When measuring performance of an organization, financial aspect is not enough alone to evaluate effectiveness and efficiency of an organization. Organization should be measuring additional aspect such as leadership, people, customer satisfaction, employee satisfaction, innovation, and productivity to understand the performance of an organization (Neely 1999). Jusoh & Parnell (2008) underlined that with non-financial measures it is possible to get insights what is happening in organization's processes and outcomes which organization cannot see with traditional financial measures.

Furthermore, researchers have argued that non-financial measure can predict better organization's long-term performance and allow management to oversee and assess if the organization is moving towards its strategic goals and targets. (Hussain et al. 2002). Non-financial measures are so called leading indicators for financial performance (Nudurupati et al. 2007). Organizations which are only relying on financial measures are indeed able to measure how they have performed in the past but in the other hand these measures are not able to show what contributed to achieve it. But even though organizations should use financial measures as well. It is not possible to evaluate organization only with non-financial measures because ultimately organization's purpose is to provide value for stakeholders by making profit.

There has been multiple studies which have indicated positive effects of measurement diversity on organizational performance and higher performance measurement system satisfaction and financial performance. (Schiemann & Lingle 1996; Hoque & James 2000; Ittner et al. 2003) Nevertheless, there have been also studies which are indicating that measurement diversity has only ambiguous or even negative effects on organizational performance. (Propper & Wilson 2003; Cavalluzzo & Ittner 2004) All in all, both financial and non-financial measures are both essential in determining organization's performance. Managers should be

using these measures in a balanced way to ensure they have enough information to make right decisions.

3.2 Designing performance measures

Designing and choosing performance measures for organization is a critical and challenging task. The problem with existing performance measurement frameworks like balanced scorecard is that they don't provide enough guidance on how to select, introduce and lastly how to use these measures (Neely et al. 2000). There are still a wide range of academics who have tried to develop criteria's and recommendations how to do this process of choosing measures and what kind of measures organizations should use. Some of the recommendations are universal and should always be considered when designing and choosing measures. This chapter aims to develop a recommendation list for performance measure design which can be used to evaluate existing measures or be used as guidance for designing new measures for organization.

First of all, Hannula (2002) has identified three compelling criteria for performance measures: *validity*, *reliability* and *relevance*. These three criteria's are universal and should be considered while designing measures. *Validity* means that a measure is measuring what is important for the business. There is no need to measure something that is not important or relevant for the business. This only generates costs to organization and the worst case is that it can guide organization to the wrong direction. Measures should be *reliable* to ensure that results are accurate and precise. Managers are using measures to manage organization, if these measures are not providing accurate information it can lead to wrong decisions. Finally, *relevance* is the value and usefulness of a measure to use. According to Hannula (2002) performance measures should try to fulfill these criteria's but there are always compromises between these criteria's when designing a measure.

When designing performance measures organization should be clear what needs to be measured. Managers should have a clear idea what is important for

organization's performance and performance criteria should be directly under control of the evaluated part of organization. Organizations should choose measures which are simple and clear so that everyone understands their meaning and importance (Neely 1997). Common issue is that people don't know what measure is actually measuring and why. Furthermore, all the performance measures should have clearly defined and explicit purpose. There is no reason to measure something what nobody understands and what is not used at all. With performance measures, it is possible to communicate what is actually important for the organization. (Najmi 2005; Neely 1999)

Performance measures usually have long history within organization and often they are not evaluated if they are still relevant. Common problem is that organizations are measuring too many things at the same time. Managers are usually adding new measures but rarely removing irrelevant ones. The number of measures should be minimized to few critical and essential for organization performance and success. World class manufacturers have also noted that performance measures should be stimulating continuous improvement rather than just monitoring. Common issue with performance measures is that they are usually focusing on snapshots rather than trends. (Najmi 2005; Neely 1999)

There is common consensus among most of the researchers that performance measures should be derived from organizations strategy and these measures should be aligned with organization's mission and vision. Figure 7 represents this process and connection between organization's mission, vision and individual performance measures. Organizations should define strategic goals corresponding to the mission and vision which then are transformed into critical operations and their goals. Performance measures should be then chosen to measure these critical operations which allows organization to obtain feedback if organization's mission, vision and strategic goals are going to be fulfilled. Deployment of performance measures is coming from top-down and then these performance measures are providing feedback from the bottom.

This way of designing measures helps organizations to aligning their organization's strategy to operational level measures. (Bititci et al. 1997, 524; Emami et al. 2012)



Figure 7. Performance measure deployment. (Adapted Bititci et al. 1997)

According to Kaplan & Norton (1996) performance measures should be chosen in a way that they represent the greatest impact on achieving organization's objectives. Furthermore, world class manufactures are using operational measures which are derived from, and support an organization's strategic intent. (Neely et al. 1995; Wouters & Sportel 2005) The benefits from alignment between performance measures and strategy has been widely identified by many authors (i.e. Bititci et al. 1997; Dixon et al. 1990; Ittner & Larcker 2003; Simmons 2000; Neely et al. 1995). The underlying assumption in literature is that organizations should regularly review and adjust their performance measures to ensure alignment with organization's strategy. Table 1 is presenting most of these recommendations regards to the design of performance measures. This list of recommendations is not explicit but it provides good starting point for evaluating performance measures.

Table 1. Recommendations regarding to the design of performance measures (Neely 1997)

Performance measures should be derived from strategy
Performance measures should be simple to understand
Performance measures should provide timely, fast and accurate feedback
Performance measures should be based on quantities that can be influenced, or controlled, by the users alone or in co-operation with others
Performance measures should reflect the "business process"
Performance measures should relate to specific goals (targets)
Performance measures should be relevant
Performance measures should be part of a closed management loop
Performance measures should be clearly defined
Performance measures should have visual impact
Performance measures should focus on improvement
Performance measures should be consistent
Performance measures should have explicit purpose
Performance measures should be based on an explicitly defined formula and source of data
Performance measures should employ ratios rather than absolute numbers
Performance measures should use data which are automatically collected as part of process whenever possible
Performance measures should be reported in a simple consistent format
Performance measures should based on trends rather than snapshots
Performance measures should provide information
Performance measures should be precise - be exact about what is being measured
Performance measures should be objective - not based on opinion

3.3 Performance measurement system use

Before we can evaluate and identify what makes use of performance measurement system effective we need to define key processes of this use. Chearskul (2010) proposed five processes of performance measurement use. According to Chearskul (2010) use of performance measurement system can be divided in five key processes: monitoring, evaluating, decision-making, taking action and communication and knowledge management. Most of the researches (i.e Neely et al. 2005; Bourne et al. 2005; de Waal 2002; Akgun et al. 2003 and Henri 2006) are in line and supporting this conceptual framework. This framework process is illustrated in figure 8. (Chearskul 2010, 38)

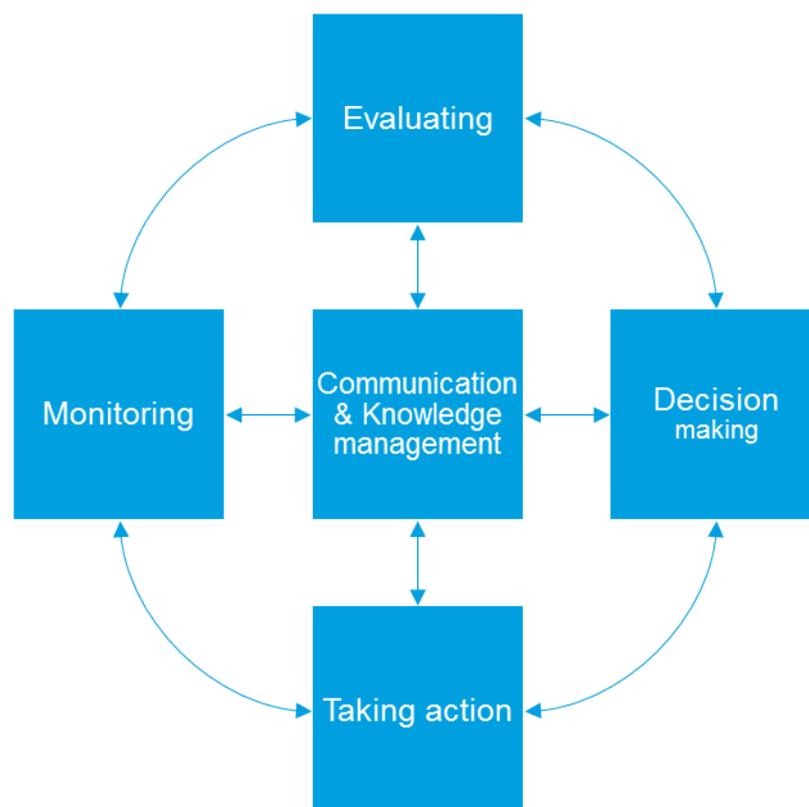


Figure 8. Framework of performance measurement system use. (Chearskul 2010)

In terms of this framework performance measurement system is usually used for providing feedback on performance compared preset targets and goals (monitoring). When this variance is discovered next step is to evaluate and interpret

this performance information to identify what is causing this variance (evaluating). Next step is the decision-making where possible solutions are developed and specific actions plans will be prepared. Afterwards, then these decision and action plans will be implemented in action (taking-action). Finally, when solutions are implemented performance measurement system is then used to provide feedback on updated performance and process starts again. During this whole process performance information and emergent knowledge will be communicated to other organization members and stakeholders and this information will be stored as future reference (communication and knowledge management). (Chearskul 2010, 38)

Based on this framework use of performance measurement use can be defined as *“the set of organizational activities and tools used to monitor, evaluate, and communicate performance information to aid managers in making decisions and taking action to achieve the goals of the organization. The performance review process includes activities that occur within the performance review meeting and in between meetings.”* Chearskul (2010, 38). According to this definition organizations are using performance information usually in performance review meetings. Wide range of academics have noted the importance of these review meetings to the performance measurement system (Bititci et al. 2000; Bourne et al. 2000, Kennerley & Neely 2002). Performance review meeting is formal meeting where defined set of people meet regularly to monitor, analyze, evaluate and make decision on organization's performance. These meeting can be also referred as operational review meetings, strategy review meetings or business review meetings (Martinez & Kennerley 2006, 470).

3.4 Critical success factors of effective performance measurement systems

Multiple authors have tried to underscore relevant features and characteristic of performance measures and measurement systems. Chearskul (2010) introduced 10 critical success factors and requirements for effective performance measurement system. These factors are based on previous academic research and they combine multiple requirements from multiple studies. Organizations can use these factors to improve their performance measurement to be more effective. All of them are important and they are the foundation for effective performance measurement system. These requirements will be used later to evaluate current situation of case organization. These critical success factors and requirements are presented in figure 9. Next these factors will be described more in detail and what they include.



Figure 9. Critical success factors for effective performance measurement system (adopted Chearskul 2010).

Chearskul highlighted that everything start from the quality of performance measurement framework. From company perspective, it is important that chosen PM framework actually fits organization's needs (Bauer et al. 2004; Franco & Bourne 2003). There is no need to implement theoretical model if it does not bring any additional value for organization. One of the key points is that quality of PM framework depends greatly on measures which are chosen. When choosing these measures, it should be clear that only important things should be measured (Moulin 2004). Furthermore, measures should be based on multiple criteria to give better

overall picture on performance (Malina & Selto 2004). This means that organizations should not only be using financial measures to evaluate their performance. Table 2 presents compilation of factors related quality of PM framework.

Table 2. Critical success factor 1: Quality of PM framework (adopted Chearskul 2010)

CSF1: Quality of PM framework
Must be firm-specific, i.e. fits business needs rather than a theoretical model (Bauer et al. 2004; Franco & Bourne, 2003)
Support organizational vision (Assiri et al. 2006)
Measures only what matters most and uses limited number of measures (Moullin 2004; Schiemann & Lingle 1999)
Measures based on multiple criteria (Cavalluzzo & Ittner 2004; Folan & Brown 2005; Malina & Selto 2004)
Market/Customer measures (Folan & Browne 2005)
People (employees, contractors) (Schiemann & Lingle 1999)
Operations (Poister & Streib 1999; Schiemann & Lingle 1999)
Environment (Schiemann & Lingle 1999)
Partners/Suppliers (Folan & Browne 2005; Schiemann & Lingle 1999)
Non-financial performance (Neely et al. 1996; Tangen 2005)
Financial performance (Neely et al. 1996; Schiemann & Lingle 1999)
Use of balanced set of measures (Assiri et al. 2006; Folan & Browne 2005)
Between desired results/outcomes and drivers (Kaplan & Norton, 1996)
Between financial and non-financial (Assiri et al. 2006; Folan & Browne, 2005)
Between leading and lagging measures (Assiri et al. 2006; Meekings 1995)
Between short-term and long-term (Schiemann & Lingle 1999)

Second critical success factor is related to quality of performance measures. Without accurate, relevant and valid measures it is impossible to have effective performance measurement in place. Performance measurement can be powerful management tool if organization can identify its key performance areas which are driving success of business. There have been numerous studies on how to develop

effective measures. Performance measurement literature usually highlights that measures should be derived or related to strategy (Assiri et al. 2006; Neely et al. 1997; Folan & Browne 2005). It is crucial to choose performance measures that are meeting organization's specific circumstances and objectives. Table 3 presents compilation of factors related quality of measures discussed in literature.

Table 3. Critical success factor 2: Quality of Measures (adopted Chearskul 2010)

CSF2: Quality of Measures
Measures are derived from/related to strategy (Assiri et al. 2006; Bauer et al. 2004; Folan & Browne, 2005; Neely et al. 1997; Schiemann & Lingle, 1999)
Measures are clearly defined for each performance area (Chan, 2004; Ho & Chan, 2002)
Related to specific goals or targets (Neely et al. 1997)
Reflect business processes (Hammer et al, 2007; Heras et al. 2004)
Composed of both process and results measures (Martins, 2000)
Composed of both effectiveness and efficiency measures (Martins, 2000)
Customized to specific functional areas/locations (Maskel, 1989)
Must be precise, i.e., exact about what is being measured (Hammer et al. 2007; Kennerley & Neely, 2003; Tangen, 2005).
Have a clear and consistent definition (Bauer et al. 2004)
Based on an explicitly defined formula and source of data (Neely et al.1997)
Employ ratios rather than absolute numbers (Neely et al.1997; Tangen, 2005)
Definitions of measures are clearly and consistently communicated (Van Aken al. 2005)
Have written documented definitions (Assiri et al. 2006)
Have a clear purpose (de Waal, 2003; Neely et al. 1997)

As previously highlighted performance measures should be related to organization's strategic architecture. One of the critical success factors is that organization should have clear mission, vision, values and strategy in place (Assiri et al. 2006). Organization should be the able to translate vision and strategy in operational terms and try to have entire workforce to understand and commit to mission, vision, values and strategy. Performance measurement systems aims to translate organization's mission, values, vision and strategy into reachable objectives and then measures

these objectives. Table 4 represents critical success factors related to organization strategic architectures.

Table 4. Critical success factor 3: Organization strategic architectures (adopted Chearskul 2010)

CSF3: Organization strategic architectures
Have a clear mission, vision, values and strategy (Assiri et al. 2006)
PM system support and consistent with goals, objectives and CSFs (Bititci et al. 1997; Folan & Browne, 2005; Tangen, 2005)
Key objectives are derived from strategies (Assiri et al. 2006)
CSFs are related to strategy (Assiri et al. 2006)

Fourth critical success factor is related to performance targets and goals (Table 5). Organizations are using performance measurement systems to ensure that they are driving organization to continuous improvement. When organization has relevant performance measures in place, next step is to have goals and targets to these measures. One of the most used tools for developing targets is Doran's (1981) S.M.A.R.T-framework. Most commonly this framework refers that objectives and targets should be specific, measurable, achievable, relevant and time-bound. According to Ghalayini & Noble (1996) goals and targets need to be carefully set. If these targets are set too low it might lead to situation where organization is under-achieve compared to its ability. In the other hand if targets are set too high, organization will under-perform compared to expectation.

Table 5. Critical success factor 4: Performance target or goals (adopted Chearskul 2010)

CSF4: Performance target or goals
Clear goals or targets are clearly defined for all performance measures (Ammons & Rivenbark, 2008; Folan & Browne, 2005)
Targets are stretch targets but not too debilitating (Schiemann & Lingle, 1999)
Targets are perceived as achievable (Moon & Fitzgerald, 1996)

Corporate level measures are important for the business but they are not going to have much impact if they cannot be cascaded all the way down to employee level.

It is not enough that organizations have their annual strategic planning sessions and later on they communicate goals to employees. This cascading process starts by making sure that people at different organization levels know what organization's strategy is (Schiemann & Lingle 1999). Organizations need to link measures across different organizational levels and functions (Tangen 2005). One of the key elements is that organizations should not just duplicate these measures at different organization levels but cascade by building the cause-effect chain. This cascading of objectives and measures through organization provides organizational alignment between different organization levels.

Table 6. Critical success factor 5: Cascading (adopted Chearskul 2010)

CSF5: Cascading
Strategy is communicated from the top to all organizational levels (Assiri et al. 2006; Bauer et al. 2004; Heras et al. 2004; Schiemann & Lingle, 1999)
Link performance measures across different organizational levels and function (Bauer et al. 2004; Folan & Browne, 2005; Heras et al. 2004; Meekings, 1995; Schiemann & Lingle, 1999; Spitzer, 2007; Tangen, 2005)
Each department has a balanced set of measures that are linked to strategic organizational performance measure (Bauer et al., 2004)
Individual or team measures link to unit or strategic organizational performance measures (Bauer et al. 2004; Bititci et al. 1997)
Individual or team goals link to unit or organizational goals (Schiemann & Lingle, 1999)
No conflict between measures used at different organizational levels (Neely et al.1996)
Subunit targets have been set for each of the strategic measures (Schiemann & Lingle, 1999)
Performance is evaluated at different organizational levels such as corporate level, business unit level, business process level (Kueng, 2002)

Integration and alignment with other management system in the organization can be seen as critical success factors for effective performance measurement. Integration means that other management system in the organization such as the human resource management system, are aligned with performance measurement. Kaydos (1991) highlighted that performance measurement system is not isolated

system within organization because it both shares inputs to other system and produces outputs for other system. Multiple authors have also highlighted that strategic measures should be linked to employee reward and recognition systems (Amaratunga & Baldry 2002; Tonge et al. 2000, Ukko et al. 2008). Table 7

Table 7. Critical success factor 6: Integration (adopted Chearskul 2010)

CSF6: Integration
Linked to every day work (Nudurupati & Bititci, 2005)
Linked to performance management systems (Schiemann & Lingle, 1999)
Strategic measures are linked to reward and recognition systems (Amaratunga & Baldry 2002; Tonge et al. 2000; Chenhall 2003; Ukko et al. 2008)

Most of the time performance measurement systems are using data from multiple sources such as legacy systems, ERP systems, excel-sheets, databases and even paper-based sources (Garnett 2001). One of the critical success factors is that performance measurement system should be supported by IT system. For example, this means that data gathering from these different sources is easy as possible (Bourne et al. 2002). In reality, usually the data is coming from multiple sources and data formats. Additionally, if these different sources are not linked together accordingly, it will lead to situation were data is not available for fast and confident decision-making. Most of the time organizations need to invest much of their time in data gathering and sometimes questions arise on the validity of data.

Table 8. Critical success factor 7: Infrastructure/support systems (adopted Chearskul 2010)

CSF7: Infrastructure/support systems
PM systems are supported by IT systems:
For modeling and statistical analysis (Nudurupati & Bititci, 2005; Schiemann & Lingle, 1999)
For delivery and display of information (Assiri et al. 2006; Bititci et al. 2000; Kueng, 2002; Schiemann & Lingle, 1999)
For gathering, managing, and storing data (e.g., data mining) (Bititci et al. 2000; Kueng, 2002; Schiemann & Lingle, 1999)
For providing easy access to information (Bourne et al. 2002; Nudurupati & Bititci, 2005; Schiemann & Lingle, 1999)
For reducing the time and effort required in data collection and analysis (Nudurupati & Bititci, 2005)

Performance measurement can be used to communicate important factors of the organization to employees and influence their behavior (Neely et al. 2002; Neely 1998). Biron et al. (2011) noted that clear communication enables employees to understand what is expected from them and more importantly it can be used to communicate why their efforts are important. One of the key elements for effective performance measurement is the buy-in from employees and it can be achieved with active communication from top-to-bottom (Assiri et al. 2006). Vertical one-way communication from top down can be for example used to give employees information on targets (Biron et al. 2011). Abdel-Maksoud et al. (2005) highlighted that communication of performance measures needs to run both ways if organization wants to improve engagement.

Table 9. Critical success factor 8: Effective and open communication (adopted Chearskul 2010)

CSF8: Effective and open communication
Develop communication from top-to-bottom to facilitate buy-in (Assiri et al. 2006)
Facilitate employees' understanding and commitment to mission, vision, values and strategy (Assiri et al. 2006)
Inform employees about PM development continuously (Assiri et al. 2006)
Ensure active communication at all levels (Amaratunga & Baldry, 2002)

Systematic structure for deriving maximum values from the measurement is needed to use performance measurement system effectively. According to Meekings et al. (2009) and Marr (2006) carefully structured performance review process can be seen as one of the most critical structures. Additionally, Bauer et al. (2004) noted that organizations should have processes in place which are evaluating the effectiveness of performance measurement system. This performance review process is essential if organization wants to extract real value from performance measurement. This structured review process is necessary architecture which is connecting performance information to decision and actions (Meekings et al. 2009).

Table 10. Critical success factor 9: Structured review process (adopted Chearskul 2010)

CSF9: Structured review process
Have dedicated times and resources to review process (Kennerley & Neely, 2003; Neely et al. 2006; Spitzer, 2007; Van Aken et al. 2005)
Have a well-defined performance review process (Meekings, 2005; Najmi et al. 2005)
Identify clear roles of participants in the review process (Neely et al. 2006)
Specify objectives and frequency for each performance review process (Kaplan & Norton, 2008; Neely et al. 2006)
Involve those who are responsible for the outcomes (Neely et al. 2006)
Involve as many people as possible in a regular performance review process (Schiemann & Lingle, 1999)

Last critical success factor is related to continual evaluating. Organization's strategy should be changing dynamically based on various external and changes and it is crucial that relevant performance measures need to be reviewed if they are still relevant to strategy. (Bititci et al. 2011; Bourne et al. 2000) This means that organizations should continually review their measures if they are still relevant and accurately reflecting strategy. Assiri et al. (2006) highlighted that this kind of review should be done at least once a year to ensure that measures are up to date. Kennerley & Neely (2003) also emphasized that these changes cannot be done if management and employees do not have capabilities and authority to adjust these measures accordingly if needed.

Table 11. Critical success factor 10: Continual evaluating of strategic performance measures (adopted Chearskul 2010)

CSF10: Continual evaluating of strategic performance measures
Continually evaluate and improve performance measures as circumstances changes (Amaratunga & Baldry, 2002; Assiri et al. 2006; Bititci et al. 2000; Bourne et al. 2000; Franco-Santos & Bourne, 2005; Neely et al. 1996)
Have process in place to check effectiveness of PM system (Bauer et al. 2004; Kennerley & Neely, 2003)
Regularly review measures as to whether they are measuring what they should be measuring (Neely et al. 1996)
Regularly review measures as to whether they encourage desired employees behavior (Neely et a. 1996)
Performance measures are updated and reviewed at least once a year (Assiri et al. 2006)
Delete a measure when it becomes obsolete or no longer needed (Neely et al. 1996; Spitzer, 2007; Van Aken et al. 2005)
Management and personnel have ability and authority to modify (Kennerley & Neely, 2003)

4 EXECUTION OF THE RESEARCH

4.1 Research approach

This research is conducted as qualitative case study. This research method has been commonly used in variety of fields such as psychology, sociology, social work, business and economics (Yin 2003). According to Creswell (2007) case study can be defined as qualitative approach where researchers explore a case or cases over time through detailed, in depth data collection involving multiple sources of information such as observations, interviews, audiovisual materials, documents and reports. With case study method, it is possible to create deep understanding of a certain phenomenon (Eisenhardt 1989). Case study method allows researchers to answer the why, what and how questions with a relatively full understanding of the nature and complexity of the complete phenomenon (Voss et al. 2002).

4.2 Data collection

This research started with literature review to identify existing studies on performance measurement and management in general. Literature review was used to develop understanding on the concept of performance measurement and how it can be used to manage organizational performance more effectively. Literature review gives tools to evaluate organizational performance measurement by presenting widely recognized best practices on developing performance measures and performance measurement systems. Findings from literature review will be used later to evaluate current state of case organization's performance measurement.

To gain better and comprehensive knowledge on case organization's current performance measurement processes set of interviews were conducted. This knowledge was then used to develop prior view on the state of the case organization and its current performance measurement process. Representatives from case organization were from two different organization level: business unit level and

division level. Semi-structured interviews were used to gain information from the case organization. These semi-structured interviews were conducted during March and April. The length of the conducted interviews ranged between 60-120 minutes. These interviews were conducted face-to-face. All in all there were 13 interviews held for this research. Interview questions are listed in appendix 1 and Appendix 2 includes list of interviewed people.

4.3 Validity and reliability of the research

Validity has been frequently described as one of the key issues and most important quality criteria of qualitative research (Maxwell 1992). Validity of research means that researcher is able to use research methods that are producing results which are relevant to the researcher. Validity of research can be divided in three components: construct validity, internal validity and external validity. First of all, construct validity is concerned with whether the research uses good or appropriate operationalized measures for the concepts studied empirically. To ensure construct validity of this research multiple sources of evidence were used and questions for semi-structured interviews were tested beforehand. Furthermore, Yin (2003) recommended that responders or other researchers should review data and findings. This occurred when supervisor and instructors of this research reviewed research during the process. Internal validity is concerned with the validity of casual relationships. More in detail this means that conclusions that incorporate these casual relationships between chosen variables are actually legitimate (Yin 2009). However, this research did not try to formulate and test any casual relationships but rather to develop understanding of current state at organization and to identify development areas. Finally, external validity of research refers to its degree to generalize the results of the research beyond the specific research context (Maxwell 1992). This research was conducted as single case study which provides poor basis of generalization. However, Yin (2009) recognized that case studies can provide analytic generalization to some broader context. The generalization of the findings from this research should be done cautiously. Findings from this research are not

applicable to different organization as they are but they can be used as basis for future research in different organizations.

Reliability of research refers to repeatability of a research process and reproducibility of research results (Bortz & Döring 2006). Research can be considered as reliable when another researcher would repeat the research and end up to same findings and results. Proper documentation of all the procedures was used to increase reliability of this research. For example, all the interviews were recorded and important review materials were stored for further investigation.

5 EMPIRICAL FINDINGS

5.1 Case company

The case company of this research is a large, publicly traded, industrial company. Case company has tens of thousands employees in multiple countries. Company had multimillion sales in 2016 and their head office is located in Helsinki. Company is divided in 5 divisions. This research focuses on one of company's division. Within this research company level will be referred as group level. Case division is one of the major players within their market segment globally. Division is generating yearly over 1 billion euros in revenue and it is employing roughly 2000 people. Division has five production units around the world. Two of these production units were located outside of the Europe. These production units are not in scope of this research. This research focuses on three production units which are located in Finland and Sweden. These production units are manufacturing units and their production is fairly similar to each other. End products could be described as bulk products. Customers buy these products in large quantities and same end product could be sold usually to everyone. There are in total 5 main "product lines" within division. These product lines are differentiated based on raw material choices or production method.

All division level interview participants were from division management team. Division management team has 10 senior vice presidents (SVP) from different areas of division such as sales, operations, sourcing, finance and communications etc. Three of the interviewees were senior vice presidents from division management team and the fourth was head of the division. One of the management team members was senior vice president of operations and investments projects. He was responsible for operations in division and all the production unit managers were reporting directly to him. His responsibility was to follow up all the operational results and in general he would need to know what was happening at the production units. The second management team member was senior vice president of finance and IT

and the third management team member was senior vice president of communications.

All three production units were fairly independent. These production units had their own management and they have been independent legal companies at some point of their history. These production units did not have any top line responsibility. These production units had their own controllers and they were responsible for delivering financial figures for division controlling and reporting team. Additionally, production unit controllers were providing material for the production unit managers about the results and deviations. They were also preparing mill reports and supporting in general business managers in required analysis and valuing of actions. Division controlling team then prepared management reports for division management team for reviews and additionally they were providing overall picture for head of division and supporting his analysis as required. Division controlling was working closely with production unit controllers as they were providing information to division level.

5.2 Analysis of current situation

This section will provide more comprehensive look on current performance measurement at different parts of the division. These sections will describe what kind of processes there are in place and how these different production units are measuring their performance. Production units and division level are separated to different sections. Chapters are mostly following topics which were discussed during interviews with people working at production units and with management team members.

5.2.1 Division level

Division level performance measurement could be described to be in decent state. Performance measurement was working as intended but it could not be described to be effective. There were some right processes and reports in place and

management team felt that they had generally good view on how division was performing. However, interviews and observations indicated that there was still room for improvement in performance measurement at division level. Main improvement areas were related to continual evaluating of reports and measures, developing relevant division level KPIs and developing new division guidelines.

Division controlling team was preparing reports and providing insights for the management team to support their decision making. The most important and comprehensive report was called division monthly report. This report included wide range of topics such as safety, communications, KPIs, market information, production unit performance, investments, sourcing and innovation. This report was the main source of information for most of the management team members. Most of the management team members were actively reading this report immediately after it was published. Management team members described that this report was fairly good and it was providing good overall picture of the division. In the other hand, management team members and head of division noted that there was still room for improvement. One of the issues was that this report was quite long and it had multiple sections and topics of interest. Over the years monthly report had grown steadily and at one point it was over 90 pages long. New sections and slides have been added throughout years but they were rarely removed. Management team members felt that it was not easy to have quick look on how division was performing because of the size of the report. In future, the objective was to have this report in dashboard format. The company had already implemented group dashboard solution but it was not in active use within management team. Using this dashboard was not self-intuitive and head of division felt that sometimes it was easier to find the information from monthly report. It is important to note that this group dashboard solution was not implemented from division point of view.

“We are good at adding reports and tables but bad at removing them” – SVP of finance & IT

“It is hard to have quick view on how our division is performing” – SVP of communications

One of the reasons why monthly report had been growing over the years was that there was no continual evaluating process in place for division level reports. SVP of operations and investments noted that there was active evaluating of monthly report at the beginning but for past two years there have not been discussions within management team how to develop report. According to head of division there probably should be discussions with the key stakeholders (management team members) who receive this monthly report. These discussions could reveal if there are things that could be removed as unimportant and if management team members are missing important information what could support their decision making. Division could implement yearly routine where content of these reports could be reviewed within division management team.

Observations and interviews also revealed that there was lack of thought process behind division level KPIs. Division actually did not develop their KPIs completely themselves. At some point, group level was requesting “KPIs” from all of the divisions with the same format. Group level was interested to compare different division to each other with same measures and divisions filled this universal report with measures related to safety, production, deliveries and mainly financial measures to group every month. Later on division had implemented these group level measures as their own division level KPIs. Head of division stated that they did some benchmarking to other division at the beginning and they did fine tuning to KPIs. Some of the group level measures did not work for their division and were dropped down but all in all most of the measures were coming directly from the group KPI template. Moreover, based on observations from division level reports it was evident that division was measuring mostly lagging financial measures. Division monthly report included lots of measures but it was clearly not providing balanced enough view on performance.

It was evident that it was important to follow up these measures which needed to be provided to group level monthly, but clearly they should not be called division level KPIs. SVP of finance and IT noted that indeed these measures were providing good view on division level financial performance. He then continued and stated that there were currently almost no division point of view inside these KPIs. Discussions also revealed that division did not have continual evaluating process in place for their KPIs. These KPIs were not reviewed actively if they were still relevant for the division. Head of division agreed that there probably should be yearly routine in place for reviewing KPIs. In addition, there were no clear link between division's strategy and division KPIs. There were no individual measures which could be used to evaluate the progress of division's strategy. Furthermore, division level KPIs were heavily focused on lagging financial measures. Division level KPIs did not have balanced enough view on performance and there were no leading indicators in place. Some of the measures did not have explicit purpose and it can be questioned if these measures could even be called KPIs. Based on these observations and interviews there should be comprehensive discussions on division level KPIs within division management team. Management team should evaluate again division level KPIs and try to have more balanced view on performance and have clearer link between organization's strategy and KPIs.

"There is currently no measures for strategy development" – SVP of operations & investments

"I don't remember the last time we reviewed our KPIs" – Head of division

Both SVP of operations and investments and SVP of finance and IT agreed that division had not enough visibility to production unit's performance. It was difficult to compare different production units to each other because their own monthly reports were not similar to each other. Division level monthly report included closer look at different production units but it was not seen as enough. Even though these production unit reports had some similar measures and topics they were not

comparable to each other due the different calculations logics. SVP of finance & IT felt that he should have more comprehensive knowledge on their production units because division had relatively few production units. He was also receiving monthly reports from production unit outside Europe and he felt that these reports gave him more detailed and comprehensive understanding compared to other production units. He stated that he had better visibility to these production units than their production units in Finland and Sweden.

“We have good division level view on our performance but we would need to have more visibility to our production units. We have limited amount of production units and they should be followed more closely.” – SVP of finance and IT

Head of division thought that division should not steer the business by looking different production units separately. He stated that this production unit view did not help him to steer the business at all. He wanted to have wider product line view which would allow him to have better understanding on how the business was moving forward. Product line performance measurement would allow product line evaluation to each other and it could be used to steer the division’s product mix in the long run. Division had 5 main product lines which then included multiple products under each product lines. New product line view could help division to evaluate which product lines are more profitable to the company. Head of division noted that production unit view was important and useful in some other ways. But for division level steering it was far from optimal.

Division level interviewees also revealed that management team members were not pleased with the current incentive program. The company had implemented new incentive program couple years ago, which had led to situation where employee level incentive outcomes were measured with division level measures. Division management did not have influence on this because decision came from the company CEO. Before this change production units had more influence on planning their incentives even though most of the targets were coming from division level.

Currently employees did not have any individual targets excluding some of the higher level white-collar employees. Head of division had been against this change and had been vocal about it to company level HR. He believed that incentives were not motivating people at all. According to head of division everyone can and should have individual targets, however for majority the personal bonus element is missing. It is important to mention that managers have other ways to compensate. It is also important to note that most of employees were part of this “personal bonus reward system” and it cannot be seen as pure incentive-program. Even though, within this research these bonuses will be referred as incentives. Some of blue-collar workers were part of “short-term incentive program” which include personal targets and same division level targets as in personal bonus reward system.

“I have lost one of the best tools as a supervisor. There should be individual and team level targets. Individual employee does not have possibility to effect incentive outcome” – SVP of Finance & IT

“Everyone should be entitled to have individual targets regardless on your position” – Head of Division.

Lastly division did not have any guidelines in place for performance measurement. For example division did not have provided guidance for production units how performance measurement should be done within production units. Division’s production units were fairly independent and they had their own measurement culture and processes in place. This had led to situation were production unit’s manager’s view on performance measurement was driving the progress of performance measurement. This was one of reasons why different production units had completely different views on how to measure performance. It was evident that there should be more structured guidance in place to improve division’s performance measurement to be more effective. There could be for example comprehensive guidelines for effective performance measurement. Division should try to improve managers’ and employees’ perception of the value and importance of

performance measurement. In addition, division could improve managers' and employees' skill level on selecting appropriate measures and how to use these measures to support their decision making.

Based on interviews and observations following flaws and weaknesses could be identified on division level:

- Lack of continuous evaluation of reports and performance measures
- Performance measures were not derived from strategic objectives
 - No measures in place to following up strategy progress
- Performance measures were not based on multiple criteria's
 - Heavily focusing on financial measures
- Lack of thought process behind division level KPIs
- Lack of standardized guidelines and policies at division level
- Incentives were linked to division level measures
- Comparisons between different production units was time consuming

5.2.2 Production unit A

Production unit A was located in Finland. Interviews included meetings with production unit manager, production manager and two production unit controllers. Production unit manager stated that their performance measurement was lacking behind and there was room for significant improvement. According to production unit manager, the major issue was that they did not have clear and comprehensive reports which could support his decision making even though their controlling team was preparing wide range of excel-based reports to management. Mill manager felt that their current reports were not ideal and they were not supporting their decision making as they should. Currently organization was not preparing monthly summary report which would allow production unit manager to evaluate overall situation of organization quickly. Production unit manager stated that he was not using all of these reports from controlling team and he was additionally preparing himself own

charts and reports to support his decision making. Moreover, there were not enough measures in place and currently there was need to calculate them manually from income statement.

Controlling team was preparing various excel reports which were made on monthly basis. These reports were separate excel reports which could be accessed through excel-interface which allowed user to choose which report they wanted to read. This excel interface had menu sheet which have been linked to these different excel-reports and by clicking these reports it directed user to correct report. The problem was that management did not use all of these reports actively. The reason for lack of use was that production unit management felt that these reports were lacking visual impact and comparison to history. Furthermore, these reports were mainly excel reports which included only numerical information and comparisons to estimates. These reports were relevant but presentation of this data was far from optimal. Production unit manager noted that he was using some of these reports but mainly he was using profit and lost statement for evaluating organization's performance. In addition, to these excel reports top management had management team meeting once a month where they presented and discussed previous months' results. For this meeting controlling team was preparing additional information on financial results. Controlling team noted that they had no idea which reports were important and which were not. In the past controlling team and management had discussions on these reports and some of reports were dropped down. Based on these interviews it was clear that there should be internal review on these reports and some of them should be eliminated. In the same way, there should be review how these reports could be developed to be more effective by adding comparison periods and visualization.

These monthly excel reports had long history and they were not being reviewed if they were still relevant. One of the controllers stated that he felt that organization does not want to do extra work by changing something what is working effectively enough even if there is clearly potential for improvement. In current situation

controlling team was spending significant time to prepare these different reports and they did not have knowledge if management was actually using these reports.

“We are not sure how much our reports are used and if these reports are relevant and in correct format” – Production unit controller

Based on discussion with controllers and management it was clear that controlling team was preparing reports which were not used actively. The issue was also that controlling team did not have enough time to implement any improvement to their performance measurement. Controllers had ideas and opinions how and what to change but there was never time to implement these changes. Most of the controllers' time was spend on preparing reports which were not used actively. Both controllers and production unit management shared common vision that production unit should implement dashboard solution to support their performance measurement. Controllers also indicated that there was no continual evaluating process for performance measures. These measures were not reviewed if they were still relevant for the organization. In addition, production unit did not have clearly defined KPIs which could be seen in one report. There was clear need for better performance measures and KPIs which could be used to steer the production unit to right way.

All the interviewed people from production unit clearly indicated that current incentive program was not working as it should. In current incentive program, targets were linked to division level measurement such as operational EBITDA (Earnings before interest, taxes, depreciation and amortization) and OWC-% (operating working capital percentage). Production unit manager stated that their employees could not affect their incentive outcomes with their own actions. Current incentive program did not increase employee motivation and might be even decreasing it. Production unit manager noted that these incentive program targets should be more close to employees at the production unit. It came clear that employees at production unit A had lost their fate in incentive system and they were not trying to

hide it. One of the problems was that incentive outcome was measured with division level EBITDA and OWC-% but division could not tell these targets in euros and as a percentage to all employees.

“We have lost the trust in our incentive program. If measures can’t be communicated openly to everyone, they are clearly not suitable” – Production unit manager

Couple years ago, all the blue-collar workers had individual incentive targets and white collars had targets based on their area they were working at. Employees were developing these targets with close cooperation with production unit management. Production unit manager noted that employees were motivated to achieve these targets because they could affect the incentive outcome with their own actions.

Based on the interviews and observations the following flaws and weaknesses could be identified on production unit A:

- There was no easy to read monthly report to production unit management
 - Lack of visualization in reports
 - Not enough measures to support decision making
- Measures were not giving balanced enough view on performance
- Lack of continual evaluating of reports and measures
- Lack of communications between controllers and management
 - Most of the reports were not used by management
- Incentives were linked to division level measures

5.2.3 Production unit B

Production unit B was also located in Finland. Production unit manager, production manager and production unit controller were interviewed for this research. Production unit had clearly more advanced view and processes for performance measurement compared to production unit A. Production unit had good reports which were supporting production unit manager’s decision making. Organization

had also implemented yearly target setting process where production unit management set yearly priority areas for production unit and followed up the progress with measures related to these areas. These yearly priority areas were related to production, safety, well-being and efficiency. Controllers were then responsible for preparing monthly report and excel reports for production unit management. They were following up yearly targets monthly in their monthly report.

Production unit had good communications from top to all organizations levels. They had review meeting which occurred twice a year and almost all employees attended these meetings. These meeting were not mandatory, but they had almost 100 % attendance rate. In these meetings production unit manager was presenting their yearly targets to employees. Additionally, they had information screens which they used for internal communications. These screens were showing some of the important measures which were updated on a daily basis. These screens were providing good overall picture what was happening at the production unit.

Production unit B had the same kind of reporting tool as production unit A. Their reporting tool was excel-interface which included multiple individual excel reports from various areas such as profit and loss statement, variable costs, fixed costs and maintenance costs. They had the same issue with these excel reports as production unit A had. These reports did not have enough visual graphs and charts to present data more effectively. Excel reports were scattered and production unit management felt that it was difficult to find information from these reports. Production unit manager noted that he was doing additional charts and graphs himself to support his decision making. Current reports did not include any trends for measures and production unit manager noted that he was doing some of them himself.

Discussions at the production unit also indicated the same issue what production unit A had with preparing excel reports. There were wide range of these reports but some of them were not used actively by production unit management. Moreover,

there was no review process for these reports if they were still relevant. There was clearly need for internal meeting where production unit manager and controlling team would go through their processes and reports. Some of the reports could be dropped down and used more time to develop these reports to be more effective. Production unit manager also noted that they should be measuring more closely different production areas separately. Also, production unit manager felt that division level management did not give enough credit for good financial results. He felt that production unit always received good feedback if they had good production month but never if they had good financial results.

All the interviewees were sharing the same opinion on their incentive program. They were not seeing it as effective way to motivate people. Same as at production unit A, outcome of incentive programs was linked to division level measures. It was evident that incentives were not motivating employees because they could not affect the outcome of these division level measures. Production unit manager noted that previously they could have set their own incentive targets but there was division level decision that these measures needs to be connected to division level profitability.

“We had our best year last year and this was not reflected in incentives. Employees were not happy about this and it was demotivating”

Based on interviews and observations following flaws and weaknesses could be identified at production unit B:

- Lack of visualization, trends and comparisons in reports
- Lack of communications between controllers and management
 - Most of the reports were not used by management
- Incentives were linked to division level measures

5.2.4 Production unit C

Production unit C was located in Sweden. Production unit manager, production manager and controller were interviewed for this research. Based on observations and interviews it was clear that production unit C had more advanced and effective performance measurement compared to production units in Finland. The main driver for this was probably previous and current production unit manager who had clear vision what they want from their performance measurement. They were actively trying to find ways to improve it to be more effective. They had multiple projects going on to develop their performance measurement and these changes were coming from production unit management. Compared to Finnish production units, production unit management's commitment and interest on performance measurement was clearly higher and they were actively developing performance measurement to be more effective. Even though, there were still areas where development could be done.

Production unit C had similar kind of process than production unit B. They had yearly production unit management meeting where they reviewed and developed targets for next year. Furthermore, they had clear KPIs for these targets and they actively monitored progress of these measures through out of the year. These measures covered wide range of areas of performance and they have tried to have both lagging and leading indicators. Production unit manager noted that they have monthly meetings within their own production unit management where they were following up the progress of these measures. They had also implemented status reports for their own projects and general topics which helped managers to be on the same page. This status report was using simplified traffics lights to indicate the status of the project/topic. Production unit manager noted that it was important that top management knew what was happening at the organization. They had also implemented information screens which were seen as effective communication channel. These information screens were displayed at the production unit and they were showing what the current state of production unit was.

Production unit C was familiar with performance measurement frameworks such as balanced scorecard. They had tried to implement balanced scorecard previously to every level of the organization but project was not successful. Production unit C was still using balanced scorecard in a small scale at production unit level measurement. Production unit manager was interested in developing their performance measurement and he was trying to visualize things. Their monthly report had good graphs and charts which helped to visualize changes and what was important. One of the charts was related to production losses. Production unit was tracking different areas of the site and calculating production losses per area. Subsequently, they had divided these losses by different causes and transformed these losses to easy to understand Swedish Kronas. This was excellent way to highlight importance of production and it acted as identification tool to find bottlenecks and improvement areas.

Production unit controller noted that they were using lot of time to prepare this report. Information was gathered from multiple places and data was not easy to access. There were still lots of steps which had to be made manually and they did not have clear process for preparing their monthly report. One of the development areas would be to have all the data in one place and automatize some of steps and develop process description/chart which shows all the needed inputs and tasks with named responsible. In addition, controller pointed out that they were following up wide range of financial/production related measures but not so many measures related to customers and people. To address this issue there was on-going project where organization was developing measures for HR-department. Project included developing KPIs related to people of the organization and HR-report. These planned measures were related for example to equality, over-time, absences, sick-leave and use of gym.

One of the major issues with current performance measurement was connected to maintenance. Production unit manager noted that there was currently no KPIs for maintenance follow up. There was currently no visibility to their maintenance

process and top management did not have tools to follow up the progress. Production unit controller was also concern that they might not be measuring enough leading indicators.

Production unit C also shared the same principals for incentives. Incentive targets were linked to division level profitability and OWC-%. Production unit manager noted that current setup did not motivate employees at all and there should be changes to incentive program. Manager also made good point that not everyone can be motivated with money. There should be also other ways to motivate people to work harder. Production unit controller shared the same concern that incentive program did not motivate people because targets were so far away from employees. Last year he got multiple messages from employees when he published the incentive outcome for last year. Some of the employees were not familiar what the incentive targets actually were.

“Division level measures are too far away from employees to give any incentive to work harder. Employees are more interested in production unit profitability”

Based on interviews and observations following flaws and weaknesses could be identified on production unit C:

- Reduce time and effort in data collection and preparing reports
- Lack of KPIs for production unit maintenance follow up
- Incentives were linked to division level measures

5.3 Summary on performance measurement at case organization

All the production units and as well division level of the organization were measuring their performance in some ways. Production units were fairly independent related to performance measurement. Production units were using their own measures and internal reports to support their own decision making and on the other hand own reports were prepared at division level to the top management. It was clear that methods of measurement and as well individual measures were different across the organization. There were no division level policies or guidelines in place on performance measurement which had led to situation where production units had their own measurement culture where they have developed their own measures and reports. Furthermore, this was one of the reasons why some of the production unit had typically too many measures and reports to follow up. Most of the production units did not have continual evaluating process in place for their measures and reports. Production unit controllers were preparing wide range of reports for production unit management but usually they were not actively used. Some of the production unit controllers felt that they did not have enough time to develop their processes because they were preparing so many reports monthly. There was clear need for reviewing internal reports and to eliminate some of them which were not used actively by production unit managements.

Division level was not having these continual evaluating processes in place either. Continuous evaluation of performance measures and processes is one of the key enablers of effective performance measurement. Division's monthly report had not been reviewed or changed for past two years. Head of division agreed that there should be discussions within management team about this report. There was also clear need for process where content of division monthly report would be reviewed within management team.

Production unit managers did not share the same consensus on performance measurement. Production unit managers were responsible for measurement and

they were establishing measures and reports based on their own needs. Some of the production units had reports which have not been evaluated or changed in years. These reports had long history and they were far from optimal. Production units did not have any policies or guidance on the overall process of performance measurement from division level. This had led to situations where production unit manager's own opinion and knowledge on performance measurement was driving the development and progress of the measurement. This has been one of the reasons why some of the production units had not developed their measurement culture and processes for long time and they did not have effective performance measurement in place. There was a clear need for division level policies and guidance on performance measurement.

At the division level, it was evident that they were following too many KPIs. Division level measurement did not have a balanced enough view on division's performance. Division was heavily measuring financial results and other lagging indicators. To elaborate, it was obvious that all the performance measures at division level did not have an explicit purpose. Division had too many performance measures which were called "KPIs". In total, there were 24 KPIs for division level which were mostly connected to finance (14/24). Furthermore, division did not have any process or routine for setting or evaluating division level KPIs. According to the head of division there have not been any changes for the past 2 years and there have not been any discussions if these KPIs were still relevant. One of the biggest issues was that the division had not developed these measures completely themselves. At group level these measures were used as part of the evaluation of different divisions to each other. Division had implemented then these measures as their own division level KPIs. This had led to a situation where division level performance measures were not knowingly linked to division's strategy. There were no KPIs which were measuring how well division was implementing its strategy. Some of the authors have argued if performance measures are not related to one or more of business objectives which have been defined from the chosen strategy, there is actually no reason why these

measures exist. It was evident that division should have structured review meeting for division level KPIs where relevance of these measures should be evaluated.

Lack of policies had also led to situation where comparison between different production units was difficult. Production units did not have harmonized reports which could have been used to evaluate production units to each other. Division level monthly report included comparisons between different production units but it was not enough for comprehensive analysis. Production units were compared to each other using 10 measures from which 8 were financial measures. SVP of operations and investment projects felt that evaluating these production units was time consuming and ineffective. He would need to use significant amount of time if he would like to have deep analysis of what is happening at the production units and to be able make accurate comparisons between units.

There were good practices in place at some of production units which could be implemented to other production units as well. Production unit C had excellent process in place for early target setting for the production unit. In this process production unit was preparing new targets for next year and developed measures to follow up the progress. They were also following up the progress monthly within their management team. This kind of processes could be implemented at different production units as well. Moreover, information screens were seen as good way to improve internal communication. Production units B and C had implemented these screens and they were using those to communicate what was happening at production units. These screens could be used to communicate what is important and guide employees to work towards these goals. Figure 10 presents short summary of the current state of performance measurement.

	Division	BU A	BU B	BU C
1. Quality of PM framework				
2. Quality of Measures				
3. Organization strategic architectures				
4. Performance targets and goals				
5. Cascading				
6. Integration				
7. Infrastructure systems				
8. Effective and open communication				
9. Structured review process				
10. Continual evaluating of performance measures				

Figure 10. Summary of current state of performance measurement at company

5.4 Implications for the organization

After analysis of the current situation at the division, the following recommendations were developed to help organization to move towards more effective performance measurement. These recommendations are presented in figure 11. Some of the recommendations are fairly easy to implement but some of them needs more comprehensive planning to be implemented successfully. All in all these

recommendations are not comprehensive but with these recommendations it is possible to tackle most of the current issues with division's performance measurement.

3. New processes

Implement continual evaluating process for performance measures and reports across the division

Harmonzaised business unit reports

4. Improve communication

Improve communication between management and controlling

Remove useless reports and measures

2. New Key Performance Indictors

Review division level KPIs and develop new ones with more balanced view. Drop down irrelevant KPIs.

1. Develop new guidelines

Develop division level guidelines on effective performance measurement. What it means and how it can be achieved and what benefits it will bring



5. New performance measures

Develop new performance measures based on multiple criteria's and from/related to strategy. At the same time remove irrelevant measures.

Linking performance measures across different organization levels

6. Benchmarking

Benchmarking best practices from different business units

Yearly target setting process
Information screens

7. Renew incentive targets

Current incentive program does not motivate employees. Targets are too far from employees. Implement individual and team level targets

Figure 11. Recommendations how to improve performance measurement

Missing high level guidance has been one of reasons for current situation at different production units. Production units have been fairly independent and their performance measurement culture and processes were mainly following production unit manager's view. This was one reason why production units were measuring performance in different ways. Production unit managers had different level of knowledge and motivation to develop their performance measurement proactively. Production units were not having same kind of processes in place for performance measurement and it was difficult to compare production units to each other.

Production unit C was actively developing their performance measurement because of production unit manager had clear idea what he needs and wants from performance measurement. They had clearly better performance measurement compared to production units in Finland. Division should develop common guidelines for effective performance measurement across the division, what it actually means and how performance measurement can be developed to be more effective at production units. Furthermore, division should try to underline the benefits from effective performance measurement at production units, what they could achieve by developing their performance measurement. More importantly, with these new guidelines it could be possible to communicate what kind of key processes production units should have in place and lastly encourage production units to develop their own performance measurement culture forward by themselves.

One of the key problems on division level performance measurement was related to division level KPIs. Observations and interviews addressed that there was lack of thought process behind these KPIs. First of all, these division level KPIs were not developed from division perspective. Secondly, there were clearly too many performance measures which were called KPIs and they were heavily focusing on financial results. It could be even argued if these measures could be called as KPIs. These measures were not providing balanced enough view on division's performance. Management team members and head of division agreed that there was probably not enough division's view inside these measures. Based on these empirical findings division should review their own division level KPIs and try to implement measures which will provide more balanced view on division's performance. At the same time division should drop down irrelevant KPIs. It would be recommended to use outside knowledge on this process.

Across the division there were almost no continual evaluating processes in place for performance measurement. This meant that most of the reports and measures were not evaluated from relevance point of view regularly. This had led to situation were

reports and measures were often added but seldom dropped. Division's monthly report had grown to 90 pages and production unit controllers were preparing wide range of excel reports to management. There was clear need for evaluating internal reports because interviews indicated that management at different levels were not using all of the reports they were provided by controlling teams. There should be at least yearly routine of evaluating important measures and reports. With this routine irrelevant and useless reports and measures could be eliminated or replaced with new ones. Production unit managers and division management team should have relevant and accurate measures and reports to help them steer the business on the right way.

One of the reasons for ineffective reports and measures was lack of communication between management and controlling teams. Some of the production unit managers knew that their reports and measures were not providing enough relevant and accurate information to support their decision making. In addition, they were not using all of the reports actively but controlling teams were still using significant amount of time to prepare these reports monthly. Some of the production unit managers were even preparing charts and tables themselves to support their own decision making. With better communication, it would be possible to eliminate some of monthly reports and processes at production units and improve the content of their reports to support management's decision making. Furthermore, this would also allow controllers to have more time to validate information and to develop their own processes to be more effective rather than preparing reports which were not used actively.

Across the division performance measures were not providing balanced enough view on performance. At the division level measures were heavily focusing on financial and operational measures. Measures should be based on multiple criteria's. Non-financial measures have often proved to be better for controlling manufacturing and distribution operations (Gunasekaran et al. 2004). In addition, performance measures were not aligned between different organization levels.

Recommendation would be to develop new KPIs and performance measures first at division level. When these measures are in place there should be cooperation with production units how these measures could be linked to different production units. When production units have their measures in place they should then cascade these down again to different production areas and teams. The final outcome should be that all performance measures are linked across the division and are guiding employees to work towards division's targets. Division should again remember to remove irrelevant measures at the same time to ensure that there are not too many measures to follow up.

One of recommendation would be to also investigate what existing best practices there are within division related to performance measurement. Some of the production units had excellent process in place already and it could be easily implemented to other production units. One of these best practices was related to yearly target setting for production unit. Production unit B had yearly review meetings where they developed key focus areas for the next year. Similarly, production unit C had process where they developed yearly targets and KPIs to follow up this progress. They had monthly follow up within their management and actions were made based on these KPIs. In addition, production unit C and B had implemented information screens within their premises. These screens were used to communicate important information to employees on daily basis. This was seen as a good way to communicate current situation at the production unit. For example, these screens were used to communicate what was the state of production and safety. Division should also try to investigate how their production units outside Europe are measuring performance and division could copy best practices from its non-European production units.

Lastly there was clear need for renewing division's incentive targets. All the interviewees agreed that current incentive program was not working as intended. Right now, incentive program was described to be more like profit sharing with employees. Employees felt that incentive targets were too far away from their reach.

Based on observations and interviewees it was evident that division level EBITDA and OWC-% were not motivating people to work harder. Employees felt that they could not affect the incentive outcome with their own work. As one of the production unit managers pointed out, incentive targets are clearly not ideal if they cannot be communicated openly to employees. Incentives should include individual and team level targets with possibility to affect the outcome. The situation is problematic because division does not have authority to change their incentive targets by themselves. Instructions and policies are coming directly from CEO and board of directors. Head of division's first step would be to raise this topic in Group Leadership Team in cooperation with other divisions. It is always important to remember that managers also have other ways to motivate employees to work harder. Managers at division level and production units should actively try to identify other ways to motivate employees to work harder.

With these recommendations organization could improve their performance measurement to be more effective. Ease of the implementation and how these recommendations could impact their performance measurement are introduced in figure 12. The highest impact on organization's performance measurement can be achieved by reviewing division level KPIs (2). However, implementation of these new KPIs is rather challenging task and it is important to note that multiple internal stakeholders needs to participate in this process. KPIs cannot be agreed on within management team members in single meeting. Renewing incentive targets (7) would also have significant impact on performance measurement. As well implementation of these new targets is extremely challenging and long process because division cannot change those targets themselves. First division need to have acceptance from CEO and board of directors.

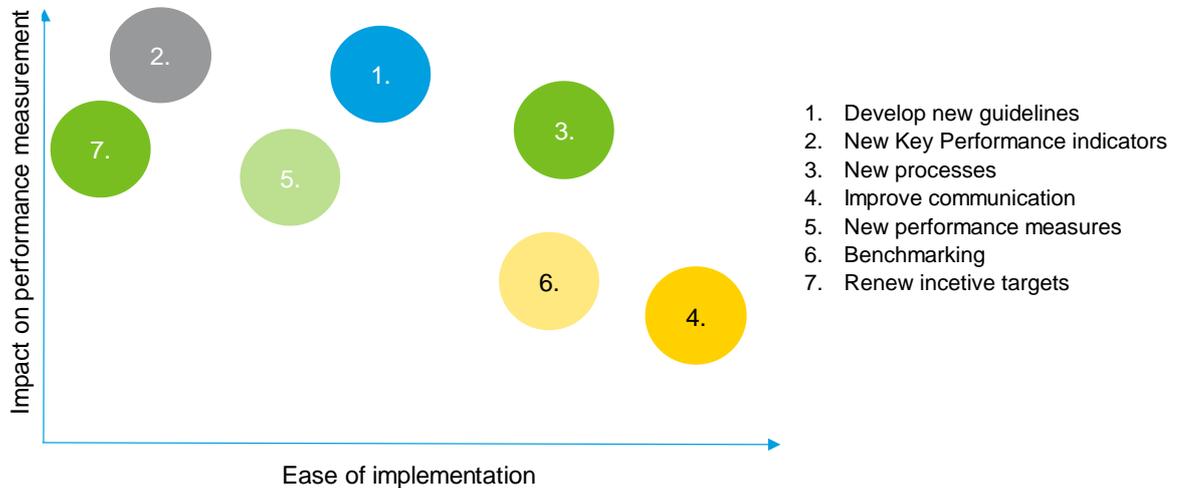


Figure 12. Impact/ease of implementation matrix

The easiest recommendations to implement would be improving communication (4) and benchmarking (6). Possible impact would be relatively low from the division perspective but production units could have significant impact from improved communication. For example production units could eliminate most of the useless reports and have more time on developing their process rather than preparing reports. Furthermore, benchmarking to other divisions and production units outside Europe could reveal best practices which could improve overall performance measurement at division. Implementing new processes (3) would also be relatively easy to implement at division level and production units. The most important new process would be continual evaluating for measures and reports. This can be done in a meeting once a year. For example at production units, controlling team and production unit management could go through their reports and measures once year and evaluate if they are still relevant and if there is need for changes.

Lastly, with new performance measures (5) and guidelines (1) it would be possible achieve significant impact on performance measurement. On the other hand, implementation would not be straight forward and it would probably require significant effort. However, these recommendations should be implemented in the long run to develop division's performance measurement to be more effective.

Without division level guidelines different production units will continue working independently and some of the old ways of working will never go away. It would be probably good idea to implement these recommendations at the same time.

6 DISCUSSION AND CONCLUSIONS

The main objective of this research was to describe features and characteristics of effective performance measurement. These features and characteristic were identified from relevant literature. In addition, purpose was to evaluate case organization's performance measurement and find ways to improve it to be more effective. Based on interviews and observations main weaknesses and flaws were identified across case organization and recommendations were developed.

What are the features and characteristics of effective performance measurement at manufacturing company?

Literature part of this research focused on finding answer on what is effective performance measurement. Chearskul (2010) introduced 10 critical success factors and requirements for effective performance measurement. These factors are based on previous academic research and they combine multiple requirements from multiple studies:

1. Quality of Performance measurement framework
2. Quality of measures
3. Organization strategic architectures
4. Performance targets or goals
5. Cascading
6. Integration
7. Infrastructure systems
8. Effective and open communication
9. Structured review process
10. Continual evaluating of performance measures

Everything starts from quality of chosen performance measurement framework. Organization should choose framework that fits organization's needs and organization should have accurate, relevant and valid measures in place. Multiple

authors have highlighted that these measures should be related to organization's strategy. This also means that one of the success factors is that organization should have clear mission, vision and strategy in place. When organization has relevant measures in place driven by organization's strategy, next step is to have clearly defined, achievable goals and targets to these measures to drive organization to continuous improvement. Cascading can be seen as next critical success factors of effective measurement. Organization should cascade and link performance measures across the organization with cause-effect chain. This cascading process of objectives and measures through organization provides organizational alignment between different organization levels.

Integration means that performance measurement should be aligned with other management systems such as the human resource system. In addition, performance measurement should be linked to every day work and performance measures should be linked to reward and recognition systems. It is also crucial that IT systems are supporting performance measurement. This allows that gathering, managing and storing the data are easy as possible and organization will have easy access to information. Effective and open communication enables employees to understand what organization is expecting from them by communicating important factors of the organization to employees. Structured review process allows organization to derive value from measurement. This means that organization have regular meetings where they evaluate performance based on performance measurement. Lastly, organization should have continual evaluating process in place for performance measures. Organization needs to continuously evaluate its measures if they are still relevant and accurately reflecting strategy.

What kind of measures should be used to measure performance?

There is no right way to choose and implement performance measures. Organization should always choose its performance measures based on what the organization wants to achieve as its objectives. Wide range of general

recommendations and criteria's on how to perform this process of choosing measures. Traditionally organizations have measured their performance mostly with measures related to finance such as sales, profitability and return on investments. Academics have been widely criticizing the use of financial measures and they have stated that these measures have multiple problems such as short-term focus, backward-looking, lack of predictive ability and little support to identify causes or solutions. When selecting measures organizations should not rely on only financial measures since focusing only on financial aspect is not enough when evaluating effectiveness and efficiency of an organization. Organization should use both financial and non-financial measures in balanced way to determine organization's performance.

When choosing performance measures organization should have clear understanding on what needs to be measured. Measures should reflect what is important and they should be simple and clear so that everyone understands the meaning of them and why they are important. With performance measures it is possible to communicate to employees what is important. Researches have noted that performance measures should be derived from organization's strategy and these measures should be aligned with mission and vision. Organizations should develop strategic goals based on mission and vision which then should be transformed to critical operations and their goal. Next step is to choose measures which are measuring these critical operations and those can be then used to obtain feedback on how organization is fulfilling its mission, vision and strategy. Multiple authors have highlighted the importance of this kind of alignment between performance measures and strategy (Bitici et al. 1995; Dixon et al. 1990; Ittner & Larcker 2003).

What are the main weaknesses and flaws in case organization's current performance measurement?

Based on interviews and observations at different production units it was evident that division had different ways of measuring performance. Production units were

fairly independent on this matter and there were no general recommendations or guidance from division level to production units how they should measure their performance. Production units were measuring performance based on production unit manager's view. This had led to situation where typically production units did not have clear processes in place for how to measure performance. One of key issues was that all the production units did not have continual evaluating processes in place for their measures and reports. Production unit managers were receiving wide range of reports monthly from their controlling teams but they did not use most of these reports and they were preparing their own reports and charts to support their decision-making. This lack of communication between production unit management and controlling teams had led to situation where controllers felt that they did not have enough time for developing their own processes because they were preparing so many monthly reports to management.

At the division level main issue was related to division level KPIs. Division did not have balanced enough view on performance. Division was mainly measuring their performance with traditional financial measures and they had all in all 24 division level KPI. One of the reasons for this was that division did not develop their KPIs completely by themselves. They had implement most of the measures directly from company level follow up KPI-report which was send to every division. Furthermore, division did not have continual evaluating process in place for their KPIs or reports. This had led to situation where they had not evaluated their KPI's relevance for past 2 years. There was also no direct link between division level KPIs and organization's strategy. At division level it was evident that it was difficult and time consuming to compare different production units to each other. This was mainly related to lack of harmonized production unit reports. Lastly organization did not have effective incentive targets in place which would have motivated employees to work harder. Division had implemented changes to these incentive targets couple years ago and nowadays the financial target part of all employees' incentives was linked to division level EBITDA and OWC-%. All the interviewers agreed that current incentive

program was not motivating people at all and there should be more individual and team level targets in place.

How organization's performance measurement could be improved to be more effective?

Seven recommendations were found after analyzing the current situation at the case organization. These recommendations were developed to improve organization's performance measurement to be more effective. Ease of implementation and impact on performance measurement varies. Recommendations for the case organization are following:

1. Develop new guidelines
2. New Key Performance Indicators
3. New processes
4. Improve communication
5. New performance measures
6. Benchmarking
7. Renew incentive targets

First of all, division should develop new division level guidelines on effective performance measurement. Currently production units were measuring their performance fairly independently and most of the time measurement was not effective enough. With these new guidelines the division would be able to communicate then importance of effective performance measurement and what could be achieved with it. Most importantly these guidelines could be used to communicate what kind of key processes production units should have in place and how they could develop performance measurement to be more effective by themselves.

Second recommendation is related to division level KPIs. Observations and interviews highlighted that KPIs were not developed from division perspective and

they were not providing balanced enough view on performance. Division should have review meeting within their management team and develop new KPIs with more balanced view and linking their organization's strategy to these new KPIs. Management team probably should use internal or external professionals when developing these new KPIs to ensure that they are appropriate and effective.

Third recommendation relates to lack of evaluating processes in division. Division should have continual evaluating process in place for all of their measures and reports. Most of the time reports and measures were not evaluated regularly if they were still relevant and useful. This had led to situation where some of the reports were not used at all and production units managers were preparing their own reports and calculations to support their decision-making. Production units and division should evaluate their reports and measures for example once a year with cooperation with their controlling organization.

Discussions and observations at different production units revealed that production unit management and controlling teams were not communicating enough on performance measurement. It was clear that controlling teams were preparing wide range of reports for production unit management but they were not used actively. Production unit manager knew that there were room for improvement but they have not been proactive on this matter. With increased cooperation and communication it would be possible to develop production unit reporting to be more effective and have better reports and measures in place. Irrelevant reports could be dropped down and controllers would have more time for developing their processes and reports to be more effective.

Production units and as well division were mainly measuring their performance with financial and operational measures such as turnover, EBITDA, OWC-%, production, deliveries and quality. Measures should have more balanced view in general at organization and there should be measures related to employees and other leading indicators. Currently organization was measuring performance mostly with lagging

indicators and there was no clear link between division level measures and production unit's measures. In the best-case division level measures should be cascaded down to production unit level and from production unit level to different operation areas and teams.

Sixth recommendation is that organization should use benchmarking to investigate more deeply what kind of best practices there are in division and how these could be implemented to other production units. For example, production units B and C had already good practices in place such as yearly target setting process with KPI follow-up and information screens. These production units were developing new targets yearly and they had KPIs in place to follow up this progress. Division could investigate what kind of processes its non-European units have in place and copy best practices to European units. Additionally, division could benchmark their processes with other divisions as well.

Lastly organization should try to renew its incentive targets. Observations and discussions revealed that employees and managers were not happy with the current incentive program. They felt that they could not affect the outcome because targets were linked to division level EBITDA and OWC-%. One of the production unit managers noted that it was clear that incentive targets were not ideal because they could not be communicated openly to employees. However, division cannot change these incentive targets by its own but they need to start influencing CEO and board of directors on this matter.

7 SUMMARY

This qualitative research was conducted to investigate and evaluate what is effective performance measurement at manufacturing company and additionally evaluate case organization's performance measurement. Overall objective was to identify critical success factors of effective performance measurement at manufacturing company. This research was carried out for multinational manufacturing company in Finland and from the case organization perspective this research aimed to evaluate the existing performance measurement processes in the case organization and reveal issues and processes that could be developed to be more effective. Based on 13 semi-structured interviews and observations this research provided 7 recommendations on how the company could improve its performance measurement to be more effective both at division level and production unit level.

This research started with literature review to identify existing studies on performance measurement and performance management in general. Literature review was used to develop understanding on the concept of performance measurement and how it can be used to manage organizational performance more effectively. In the theoretical part of this research previous theories and earlier research from performance measurement was investigated and critical success factors were identified for effective performance measurement at manufacturing company. Literature review gave tools to evaluate organizational performance measurement by presenting widely recognized best practices on developing performance measures and performance measurement systems. Findings from literature review were used later to evaluate current state of case organization's performance measurement.

In the empirical part of this research the aim was to develop deep understanding of case organization's performance measurement activities with 13 semi-structured interviews and observations. These interviews were conducted both for division level managers and production unit level managers and controllers which allowed

researcher to develop good overall view of organization's performance measurement. Furthermore, observations were made from different internal reports and processes. All in all, empirical part of this research focused on developing understanding of organization's performance measurement activities which lead to the conclusion and recommendations made in empirical part of the research. These findings include identified weaknesses of current performance measurement activities both in division and production unit level. The last part of this research included recommendations to case organization how it could improve its current performance measurement to be more effective.

Case organization's performance measurement could not be described to be effective. Organization's issues were related to lack of division level guidelines and processes, defining KPIs, communication and incentive targets. Seven recommendations were developed to improve organization's performance measurement to be more effective. First of all, organization should develop new guidelines on how to measure performance. Currently production units were fairly independent on this matter and they had been measuring their performance without division level guidance. This had led to situation where some of the production units were not measuring their performance effectively enough. Furthermore, organization should define its KPIs with more balanced view on performance and have fewer financial measures in place. Moreover, organization should implement new processes and performance measures. For example organization did not have any continual evaluating processes in place. Division level reports and KPIs had not been evaluated for past two years. Organization needs to implement these continual evaluating processes all across the organization to ensure that measures and reports are up to date and they are providing relevant information for the management. With these new processes organization would be able to remove some of the irrelevant reports and measures. Lastly organization needs to have more communication between management and controlling teams and renew their incentive targets in a way that employees can affect the outcome.

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APPENDIX

Appendix 1. Interview questions

1. Tell me about yourself, what is your position within the organization and what are your earlier work experiences?
 - What are your responsibilities?
 - How many years you have worked for the organization?
 - How many years with the same responsibilities?
2. What is the meaning of the concept of performance measurement according to you?
3. How familiar you are with performance measurement frameworks? Such as balanced scorecard and performance pyramid?
4. How is your organization currently measuring performance? Could you explain your performance measurement process?
 - What kind of reports you are using/preparing
5. Do you feel that the current performance measurement activities serve your needs? What are the pros and cons about the way performance is currently measured?
6. What kind of performance measures are being used in your organization? (financial & non-financial)
 - What criteria's are used to select these measures?
 - How do you know those measures are appropriate?
 - How often do you asses the appropriateness of these measures?
 - What are the key performance indicators?
 - What do you think is the most important to measure?
 - Are the measures somehow linked to the strategic objectives?
7. How has the performance measurement developed through the years? Is there any differences in what is measured today compared to what was measured a couple of years ago?
8. Do you think that all important dimension of performance are covered with the measures you use today at your organization? (If not: which are missing?)
9. Do you believe that business unit level measures are aligned with division level strategic measures?
10. Is the current system somehow linked with the employee incentive programs?
 - If yes, on what level?
 - What kind of targets employees should have?

Appendix 2. List of interviewed people

Production unit A

Production unit manager

Production manager

Controller

Controller

Production unit B

Production unit manager

Production manager

Production unit C

Production unit manager

Production manager

Controller

Division level

Head of division

SVP of Finance and IT

SVP of Operations and Investments

SVP of Communications