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## **Evaluating the relationship between strategic objectives and process metrics in the service business**

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**Abstract:**

The measurement of the service processes has been facilitated by the development of the information technology. Through new systems and applications, it is possible to obtain accurate information on the activities of the service process. Process measures provide information to develop and improve the underlying service process. The service industry has commonly used similar measuring methods as the manufacturing industry. However, the manufacturing processes differs from the service processes due to variation, value creation, and automation level. Hence, the same manufacturing measurement methods cannot be applied directly to the service processes.

Measuring is vital for companies to develop and update processes to prosper in a highly competitive service sector. Generally, measurement starts from defining the strategy targets, after which the strategic objectives are translated and aligned through the organization levels down to the customer interface. There is a consensus in the literature that the strategy must define the process measurements. Several different measurement systems (Balanced Scorecard, Performance Matrix) are designed to support the strategy implementation. Translating strategy metrics into the execution level is, however, a demanding and tedious process involving many challenges. As a result, companies do not often follow this process. Although the literature is unanimous about its importance and usefulness.

The aim of this thesis is to evaluate the relationship between strategic objectives and process metrics. To study this topic, 9 interviews were conducted and part of the interviews were organized using participant observation method. The interview structure was formed using the Congruence Model and the results were analyzed through the Measurement Driven Strategic Alignment Model.

The research revealed that the strategy process and the organizational structure can strongly influence how well the strategy measurement and implementation succeed. When the strategy measures play a key part in the strategy process, their value driver maps are better known and the impacts are better monitored. To achieve strategy targets, the strategy must have an impact on the daily life (rewards, objectives, and metrics) of the employees. Through daily routine changes, the strategy goals can be implemented into the practice.

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**Keywords:** Strategic alignment model, Service process measurements

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**Tiivistelmä:**

Palveluprosessien mittaaminen on helpottunut teknologia kehittymisen myötä. Uusien järjestelmien ja sovellusten kautta on mahdollista saada tarkkaa tietoa palveluprosessin toiminnasta. Prosessimittauksen avulla on mahdollista parantaa prosesseja ja tehdä niistä tehokkaampia. Palveluprosessimittauksessa on yleisesti käytetty vastaavia menetelmiä kuin valmistusteollisuudessa. Valmistavan teollisuuden prosessit eroavat kuitenkin palveluprosesseista variaation, arvon luonnin ja automaatioasteen seurauksena. Näin ollen suoraan samoja mittausmenetelmiä ei voida soveltaa.

Mittaus on ylipäätään tärkeää, jotta yritys voi kehittää ja päivittää prosesseja pärjätäkseen erittäin kilpailulla palvelualalla. Yleisesti mittaus lähtee strategiatavoitteen määrittämisestä, jonka jälkeen strategiatavoitteet jalkautetaan läpiorganisaatioitasojen aina asiakasrajapintaan asti. Kirjallisuudessa vallitsee konsensus, että strategian kautta tulee määrittellä prosessimittaus. Useita erilaisia mittausjärjestelmiä, (Balanced Scorecard, Performance Matrix) on suunniteltu strategiamittareiden jalkauttamisen tueksi. Strategiamittareiden jalkauttaminen on kuitenkin vaativa ja työläsprosessi sisältäen monia haasteita, jonka seurauksena yritykset eivät usein tätä prosessia noudata. Vaikkakin kirjallisuus on yksimielinen sen tärkeydestä ja hyödyllisyydestä.

Tässä diplomityössä tutkitaan, miten strategiamittareiden määrittäminen ja jalkautus onnistuvat organisaatiossa. Tutkimuksessa suoritettiin yhteensä 9 haastattelua kahdessa kohdeyrityksessä ja osassa haastatteluja sovellettiin 'participant observation' -metodia. Haastattelurakenne muodostettiin 'Congruence' -mallin avulla ja tulokset analysointiin mukautetun 'Strategic Alignment' -mallia hyväksikäyttäen.

Tutkimuksessa kävi ilmi, että strategiaproessi ja organisaatorakenne vaikuttavat vahvasti siihen kuinka hyvin mittaus ja jalkauttaminen onnistuu. Strategiamittareiden ollessa keskeisessä osassa strategiaproessia niiden arvoketju tunnetaan paremmin ja niiden vaikutusta seurataan. Strategiatavoitteisen aikaan saamiseksi, strategialla täytyy olla vaikutuksia henkilöstön arkeen: palkitsemiseen, tavoitteisiin ja mittareihin. Arjen muutosten kautta strategiatavoitteet saadaan käytäntöön.

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**Avainsanat:** Strategian yhdenmukaisuusmalli, Palveluprosessimittaus

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*Tommi Brandstäck*

Tommi Brandstäck

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## 1. Introduction

The service industry has experienced fast changes during the last twenty years (Ramamoorthy 2000; Rai & Sambamurthy 2006). The development of technology such as IT-systems and the internet has enabled the digital revolution (Don 1996). The internet banking is one example of this digital change which has moved service processes towards more digital format, known as digitization (Chou & Chou 2000; Taherdoost et al. 2013). This digitalization has enabled the use of different tools and methods which have not been available in the analog time (Barrett et al. 2012). These digital tools have allowed measuring and monitoring service processes in a more advanced and rigorous manner (Eccles 1991). Therefore, using IT-systems, we can control, measure and improve prevailing digital service processes.

Why is this topic interesting to study?

In the long run, the company can only manage rivalry by improving its internal processes (González et al. 2010). This process and business development is pointless without proper measures of the current situation (Melnyk et al. 2004). Process metrics give a status of the present state and can be used as a benchmark for the future process development. Measuring provides valuable insight of the process conditions, and managers can exploit measured data to make the right decisions to develop and improve the underlying business process (Ishigaki & Jones 2003). When process developers are analyzing and improving the processes, it is important to understand how process-level improvements affect to company's outcomes and so forth strategic objectives.

Overall, process measurement is a critical task in the field of highly competitive service business (Melnyk et al. 2005). The process of measuring begins at the strategic level and continues all the way down to the execution level. Therefore, operational metrics must be aligned with the strategic objectives (Neely 1999). The success of the company is tightly related to its strategic objectives. Implementing objectives, in every level of the enterprise, can be challenging operation. Normally deployment of strategic objectives occurs in a top-down order (Melnyk et al. 2004). First, strategic objectives are attached to the strategy metrics. The value change of

strategy metrics will reflect to strategic objectives, and equivalent realization is possible to detect. Then, these metrics are attached to process measures to verify the corresponding realization. Many tools of the performance management are developed to achieve the previous process in a more organized manner. In other words, process and strategy metrics provide a vital linkage between intended strategy plan and actual execution (Melnyk et al. 2004). However, often the correlation between process metrics and strategic objectives have blurred during the measuring process. Meaning that it is hard to understand how single process metric effects to the top line outcome causing tension between measures and strategic objectives (Melnyk et al. 2005; Johnston & Pongatichat 2008).

Moreover, the dynamic changes in the organization's environment, both in public and private sector, requires constant modifications to the strategy, and therefore, operation and performance measures need to be evolved to reflect these changes (Johnston & Pongatichat 2008). Nevertheless, only a few organizations have systematic processes in place to manage the evolution of their performance measurement system to ensure that it continues to reflect the organization's strategy (Kennerley & Neely 2003; Ittner & Larcker 2003).

What is known and what is not known?

Among the researchers, there seems to be a clear vision that operational measures need to be derived from the corporate strategy (Wouters & Sportel 2005). For this purpose, researchers have developed several performance measurements systems such as Balanced Scorecard and Performance Pyramid (Brignall & Ballantine 1996; Bititci et al. 2012) to create a clear structure for corporate to produce a comprehensive measuring framework. These systems try to select and link the operational measurements to the strategic objectives (Melnyk et al. 2014). Often researchers have taken the top-down perspective to examine this problem by looking, what are the best operational measurements to the specific strategic objectives. However, only a few researchers have deeply analyzed the relationship between the operational measurements and the strategic targets and taken the bottom-up perspective by looking, what are the impacts of the specific operational measurements to the strategic objectives. When analyzing the

measurement results, it is essential to understand the cause-effect relationship inside the measurement group and also its effect on the higher-level metrics.

What does this study do to fill this gap?

Therefore, this research tries to fill the gap of the relationship analysis between the different measurements levels focusing on the alignment challenge between the operational metrics and strategic objectives. Hence, the research question is: *how strategic objectives and operational metrics link and connect to each other*. The analyze is based on the previous research and qualitative multi case study. Furthermore, other researchers have also raised research topic of this nature to the new level of importance (Melnik et al. 2004). Multi case study observations are analyzed through the congruence model and findings are presented using the adapted strategic alignment model.

Regarding the structure of the research, after this introduction, the author will go over the conceptual background of service process measurement including subtopics such as characteristics of the service industry, the definition of metrics, measurement frameworks, and the challenges of measuring service process. The third chapter focuses on the keynote of this research by presenting the strategic alignment and discussing what alignment between the measurement and strategy means and why there exist linking challenges and strategy tensions. The fourth chapter illustrates the congruence model and the strategic alignment model which are used in the qualitative research. The fifth chapter describes research design focusing on the case selection, data collection and research process. The sixth chapter presents findings, exhibits the cases more deeply and demonstrates the research content and synthesis of the findings. The seventh chapter includes discussion and conclusion sections of the study presenting the main conclusions and their implications to theory and practice. The eighth and final chapter contains the bibliography.



## 2. Conceptual background: Service process measurement

During the last decade, the importance and significance of service industries related to the economy has been widely recognized (Charles 1993; Johnston 1988; Allen 1988). The line of academic reasoning has far too long been dominated by the consistency of manufacturing operations (Vuorinen et al. 1998). One reason for this might be that services process are harder to measure and monitor than manufacturing processes (Harmon et al. 2006). Manufacturing processes like production and distribution are quite homogeneous. However, the service industry deals with a much greater variance with customers, activities, and deals (Harmon et al. 2006; Schmenner 1986). Moreover, the service sector has much more customizable and labor intensive work compared to the manufacturing industry (Tinnilä 2015). People, the core unit of productivity, bring unpredictable differences in skills, motivation, and experience to the work process (Harmon et al. 2006). Hence, the service process measurement may be more challenging compared to measuring manufacturing processes.

Business and process measurements provide following three basic functions: control, communication, and improvement (Melnik et al. 2004). The first function is control enabling workers and managers to manage and evaluate the performance of the process which they are responsible. The second function is communication which helps communicate and report process status and business situation to different stakeholders. Measurements make possible to transmit and disclose information about the process for people who do not have an accurate understanding of the underlying process. However, poorly implemented metrics can communicate wrong information leading to frustration, conflict, and confusion. The final metrics function is the improvement. Improvements are not possible to detect without the proper metrics. Metric illustrate the gap between current and expected performance which points out improvement areas. The direction of the gap (negative or positive) and the size of the gap provide feedback and information that can be used to identify process adjustments or other improvement actions (Melnik et al. 2004).

Organizations which are taking advantage of measurements can learn from the past to improve performance and achieve better predictability in the future (González et al. 2010). In this research, the measurable entity is the service process since it generates most of the cost and benefits of the service business. Therefore, improving firms or organizations efficiency, in the end, means improving its internal processes (González et al. 2010). Moreover, service processes strongly influence the customer satisfaction and the quality of the product. Any well-designed service process includes a control mechanism allowing management to decide which aspects of the performance of the process are measured and how these measurements are used to monitor the process (Powell et al. 2001). These measurements are necessary for any organization which is decided to achieve and maintain process capacity at the highest level (González et al. 2010). Finally, to attain mature and sustainable organization status, it is essential to integrate measurements as a fundamental part of the corporate business objectives (Sanchez et al. 2009).

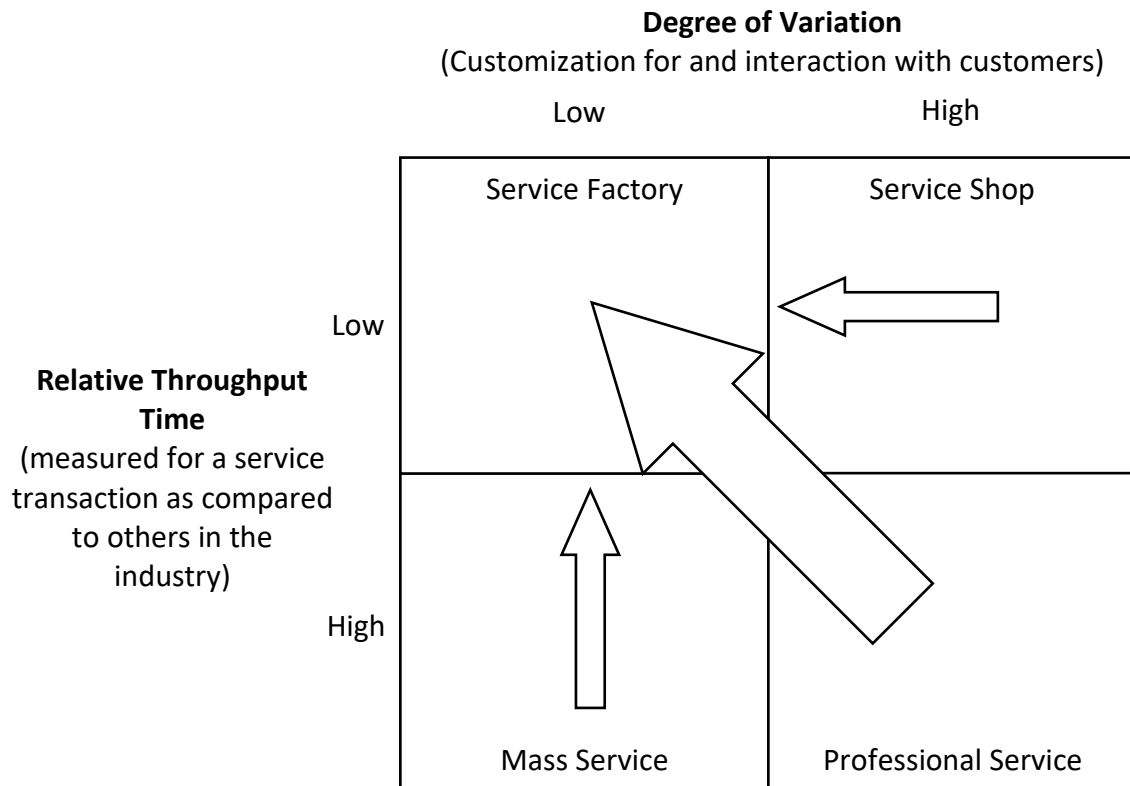
Process measurements have gained a lot of research attention, and research scope has gradually expanded (Marr & Schiuma 2003). Concerning the research question, it is good to understand basic principles of the service processes and related measurements. Therefore, the purpose of this chapter is to give a basic understanding of service types, metrics and measurement systems. The service industry is a large concept including various notions. Therefore, the author first presents the main service types and introduce process-type specific measurements. The second subchapter present metrics characterization. Metrics characterization helps to deal with complex metric maze (Melnik et al. 2004). The third subchapter illustrates different measurement systems including frameworks such as Balanced Scorecard, Performance Matrix, Kanji business excellence measurement system (KBEMS) and Theory of Constraints (TOC). The last subchapter concentrates more broadly measurement challenges related to the service industry including discussion of topics such as service variance, volatile environment, and data availability.

### **2.1. Characteristics of service industry**

Several measurement systems are derived from the manufacturing sector. These systems, with minor changes, are also used in the service industry. Referring to the measurement challenges

manufacturing- and service industries differ greatly. Therefore, this subchapter presents the key features of the service processes and illustrate the service classification.

The service industry can be divided into four different categories: service factories, service shops, mass services and professional services (Schmenner 1986; Schmenner 2004). Schmenner has made the service characterization based on the service speed and the service variation, shown in Figure 1.



**Figure 1,** The service matrix (Schmenner 2004).

This classification is also known as the service process matrix. The matrix consists of four quadrants which all are presenting own unique basic service type. The two dimensions of the matrix are the degree of the variation (client interaction and customization) and the relative throughput time. These two dimensions or axes presents the major differences between basic service types. According to Schmenner, the nature of service is shifting towards service factories.

In the future, more and more processes can be illustrated through a low degree of variation and relatively low throughput time (as indicated by arrows in Figure 1).

#### Service factories

The first service category is service factories which have low labor intensity and low client interaction and customization level (Schmenner 1986). As the name implies, it provides services in a factory manner, trying to achieve the best possible efficiency and performance (Tinnilä 2015). In other words, service factories have highly standardized services which are linked to the streamlined service process. Classic examples of this kind of services are airlines, fast-food and hotels. Schmenner (2004) argues that service factory is the direction where other service types are transferring in the future because services are constantly improving throughput time and reducing variation. To promote this argument, it is possible to find several examples of current companies which have taken advantage of service factories such as Ryan Air, Virgin Airlines, and McDonald's (Tinnilä 2015). These companies are renowned in their fields for introducing limited service range with cut-price products. Moreover, the same change is possible to detect in the field of industrial services where companies are also moving towards service factories (Chase 1992).

In the sector of fast-food, the McDonald's can be seen as a big hitter. The McDonald's restaurant is an excellent example of a service system with a few pathways and products where the customer may choose the best one. The burger restaurant is well-known for its efficiency research, and development of detailed manuals how its main product, hamburger, should be produced (Tinnilä 2015). The service system is strictly designed to produce the best efficiency and employees are well trained, for example, video training programs and own hamburger university (Collier & Meyer 1998).

When the customization level is low, the service business can face difficult marketing environment (Schmenner 1986). Service factories may find it hard to provide a service which directly responds to the customer demand. Moreover, it may be difficult to provide the service feeling like hearty and warm. As a result, the impact of the physical surroundings increases which

can create a better service feeling (Tinnilä 2013). On the other hand, when the customization level is low, service processes are easily standardized, and therefore unit costs can be maintained at a low level. Due to low labor intensity, the choice of plant and equipment is strengthening whereby monitoring and implementing technological systems become more important (Schmenner 1986).

The service factory measurements should reflect the high use of organizational resources and low use of human resources (Calabrese 2012). In general, measures are similar to those used in mass services but also including the reflection to the higher use of inter-organizational resources and investments in infrastructure and equipment and service systems (Tinnilä 2015). Moreover, due to customers limited process influence capability other measures should also include such as the standardization level of service packages and the service delivery speed to the client (Kellogg & Nie 1995). According to Tinnilä (2015), the service factory measurements are focusing on the ratio of output with time and personnel and example measures include automation and self-service levels, a range of services, and standardization of service processes.

#### Service shops

The second service category is service shop which has moderate customer demand per day (Brignall & Ballantine 1996). When the level of customer interaction and customization increase, the service factory change into the service shop. Service shops still have a large extent of plant and equipment relative to labor and their offer more interaction and customization compared to service factories (Schmenner 1986). Schmenner (2004) proposes that service shops and service factories have similar throughput times. However, Tinnilä (2015) argues that due to higher variation also service shops have, in general, higher service speed. The positioning between service factories and service shops is not clear, as this debate illustrates.

Usually, hospitals, traditional restaurants, and auto repair centers are examples of service shops. The labor intensity is higher than service factories, and employees needed skill set is more demanding (Tinnilä 2015). Albeit, staff knowledge is not as strong than in professional services, where the specialization is an extreme level.

Tinnilä (2015) argues that the measurements used in service shops are less straightforward than in service factories and mass services because service shops balance the labor intensity and requirements of the extensive range of services and interactions of customer demand. Therefore, metrics like output per person does not give relevant and accurate information. More illustrative measures contain components such as customization, standardization, discretion, customer, and service range.

#### Mass services

Third service industry category is mass service which has high customer demand per day (Brignall & Ballantine 1996). This service category has a high level of labor intensity but a quite low level of interaction and customization. Characteristics of mass service are a relatively slow process time and low variation in the service (Tinnilä 2015). Many traditional services can be located in this category such as retailing, commercial banking and schools. When the labor intensity increases, the need for controlling and managing the workforce becomes essential such as hiring scheduling and training workforce (Schmenner 1986). Moreover, due to high labor intensity, operational costs also increase when the customer demand growth (Schmenner 2004).

Researchers have argued that in the future, the importance of mass services will be decreased, as it can be replaced with service factories (Tinnilä 2015; Schmenner 2004). The reasoning behind this is that services will decrease the labor intensity and they will also cut personnel cost by introducing other technological systems due to digitalization. For example, banking sector can give a concrete example of this change (Tinnilä 2015). In the banking sector, branch-office services have typically categorized into the mass service class. However, during the recent years, the role of branch services has been shifting from service production toward marketing and advisory services, while the old service processes are moved into service factories (centralized service production) (Portela & Thanassoulis 2007).

Relating to the mass service quadrant Olorunniwo and Hsu (2006) have studied which elements will contribute significantly to the service quality. According to their study, five dimensions are

highlighted in the mass service context: tangibility, responsiveness, knowledge, accessibility, and reliability (Olorunniwo & Hsu 2006). Tangibility refers to the physical facilities, equipment, and appearance of personnel. Responsiveness includes the willingness or readiness of employees to provide service targeted to customers' specific needs. The third dimension is the knowledge meaning that employees have the necessary competence to serve customers. Accessibility is the service provider's ability to serve the client when every they need it. The final dimension is the reliability referring to the level to which customers can rely on the service process to keep promises and perform with the best interests of the client.

Highlighting the previous characteristics of the mass service, typical operational measurements are process time, throughput time, repeatability of service encounter sequence, as well as, a number of customers and transactions, contact time, customization level and orientation of service offering (Tinnilä 2015). Moreover, due to the low degree of customization and with standardized products and services, same measures can be used for all outputs (Brignall & Ballantine 1996).

#### Professional services

The last category is professional services which serve relatively few customers per day, and the degree of labor intensity and customization is high (Brignall & Ballantine 1996). Moreover, this category has a significant level of service variation leading to a relatively long throughput time. Therefore, professional services are characterized by relatively slow service processes (Tinnilä 2015). For instance, the professional service process may take many weeks, while usually service factories process duration is counted only in minutes. On the other hand, the customer relationships are longer, sometimes continuous.

Usually, professional service employees have specific training in a particular discipline like art, science or finance (Nordenflycht 2010). Moreover, some professional services are required to hold professional licenses such as architects, lawyers, and doctors. Also, professional services provide specialist business support like tax advice, IT service, and management advice. There has been identified three distinctive characteristics of professional services: knowledge intensity, low

capital intensity, and a professionalized workforce (Von Nordenflycht 2010). In general, professional services face more volatile and uncertain external environments than mass services and are therefore more likely to need interactive process management systems (Brignall & Ballantine 1996).

Professional services provide the most personalized services with extremely skilled and experienced employees. Customer value creation is mainly achieved by the expertise of the staff (Tinnilä 2015) causing challenges for measuring this service category. The high degree of customization in professional services will require individual measures for single service, whereas, in mass services and service factories with standardized products, the same measures may be sufficient for all services (Brignall & Ballantine 1996). According to this category, the best measures would reflect the value created by the customer (Stabell & Fjeldstad 1998). Therefore, measures looking at a number of customers per expert are not applicable and Tinnilä argument that research field is currently lacking this kind of measurements (Tinnilä 2015).

#### Managerial challenges and summary

Researcher Verma has made an empirical analysis of management challenges in different quadrants of service process matrix (Verma 2000). The study reveals that management challenges differ based on the service type. Challenges are grouped upon characteristics of service types. Service factories and service shops have similar problems such as capital decisions, technological advances, managing demand, and scheduling service delivery. These challenges are quite intuitive considering characteristic of these services. For example, technological advances are needed to maintain low throughput time. Moreover, mass services and professional services have similar managerial challenges: hiring, training, managing growth and control of far-flung operations. These challenges arise due to high labor intensity. Due to low customization level, service factories and mass services have common challenges such as marketing, surroundings, and hierarchy. Finally, service shops and professional services have similar problems, due to labor knowledge and high customization such as cost increases, quality maintenance, and career management.



To summarize this subchapter Table 1 presents findings related to different basic service types. The underlying table compares services according to four factors: variation, throughput time, customer demand and labor intensity. Moreover, the table presents services objectives, management focus areas, example services and specific metrics regarding services types.

**Table 1**, summary of service types (Tinnilä 2015; Schmenner 1986; Schmenner 2004; Brignall & Ballantine 1996; Brignall et al. 1991)

	<b>Service factory</b>	<b>Service shop</b>	<b>Mass service</b>	<b>Professional service</b>
<b>Variation</b>	Minimal	Moderate	Low	High
<b>Throughput time</b>	Minimal	Moderate	low	High
<b>Customer demand</b>	High	low	Moderate	Minimal
<b>Labor intensity</b>	Minimal	Low	Moderate	High
<b>Objective</b>	Standardization	Massive use of human and organizational resources	Minor use of human and organizational resources	Customer experience
<b>Management challenges</b>	Marketing and technological advances	High capital intensity	Scheduling workforce	Hiring and training
<b>Examples</b>	Airlines and Fast-food	Hospitals and traditional restaurants	Retailing, commercial banking, and schools	Wealth management, tax advice, and IT services
<b>Metrics</b>	Throughput time, variation level and automation level	Labor intensity, service range, demand of interaction	Process time, throughput time, contact time, and transactions	Customer value and Net Promoter Score (NPS)

## 2.2. Definition of Metrics

Metric research has introduced a large variety of different types of metrics which have created complexity regarding the study of metrics (Melnyk et al. 2004). Metrics classification is one way to organize this measurement mishmash and help to understand the big picture. Service metrics can be divided into different categories in several ways. The first classification presents measurement focus and tense. The second classification is based on measurement influence perspective, and final classification is deviating measures based on their impact levels.

### Metrics focus and tense

The first classification, see Figure 2, separate metrics based on their primary attributes: metric focus and metric tense (Melnyk et al. 2004). Metric focus attribute refers to the measurement unit. Usually, metric reports are based on either financial or operational outcome (Melnyk et al. 2004). The financial outcome is usually in monetary form and operational outcome present process details such as lead time, hit rate, or call time. Metric tense attribute refers how the measures are going to be used. Metric tense can be used to evaluate the outcome of performance or predict the future performance.

An outcome-oriented use of a metric assumes that problems and lessons studied in past can be applied to the current situation. In other words, examining the history can be used to improve the present. Many times, cost based metrics belongs to this category. Conversely, a future-oriented metrics are aimed to increase the chances of achieving a certain goals or objective. For example, if the desire is to reduce lead time then, the future oriented metrics could be setup times and a number of steps in the process. Reductions in one or more of these metrics should be reflected in reductions in lead time. Predictive metrics are appropriate when the interest is in preventing the occurrence of problems, rather than solving them (Melnyk et al. 2004). In contrast, outcome oriented metrics are better when the desire is to improve the process.

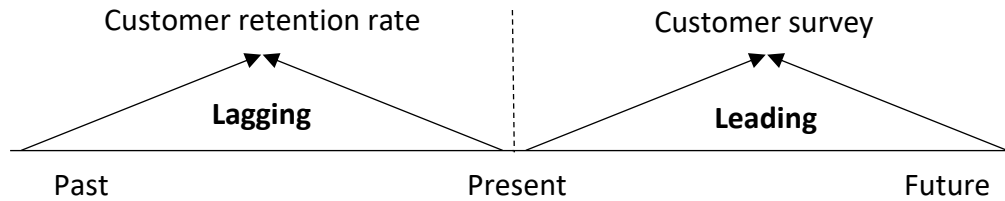
		Metrics Tense	
		Outcome	Predictive
Metrics Focus	Financial	Return on Assets	Future cash flow
	Operational	Lead time	Customer interactions in the future

**Figure 2**, metric classification based on metrics focus and metrics tense (Melnyk et al. 2004).

#### Leading & Lagging Indicators

Metrics can be divided into different categories based on their influence horizon, see Figure 3. Lagging measures (outcomes) indicate what has happened and leading measures (performance drivers) predict what will occur in the future (Evans 2004). The lagging indicator is a measure that only adjusts after the actual change has happened (Manuele 2009). Therefore, it does not predict the future but presents the past actions and trends. Example measures include labor cost, business spending and lead time (Manuele 2009). On the other hand, leading indicators are metrics that change before the service segment or sector changes. These metrics are used to predict the future, although with limited accuracy. Classic leading indicators include money supply, inventory changes, and stock prices (Manuele 2009).

For instance, customer survey outcome about the recent service experience can be a leading indicator for the customer retention, while the customer retention itself is a lagging indicator, as Figure 3 present (Manuele 2009). Correspondingly, employee performance might be a leading indicator of business growth, and so forth. These metrics and indicators should also provide either correlational relationships, or more efficiently, cause-and-effect relationships between leading and lagging indicators (Manuele 2009).

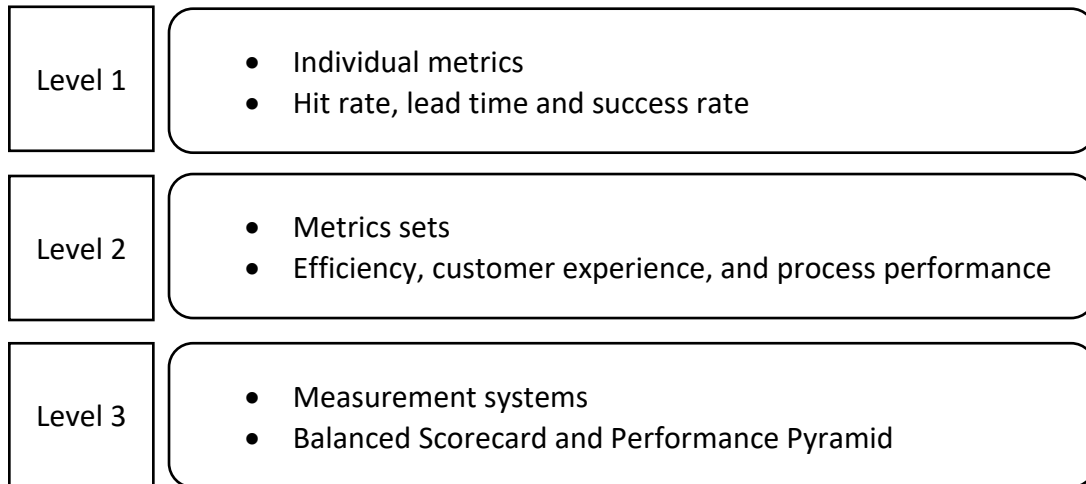


**Figure 3**, Illustration of the time perspective related to leading and lagging indicators.

#### Levels of Metrics

Moreover, metrics can be divided into different groups based on their impact levels as follows, individual metrics, metrics sets, and performance measurement systems, see Figure 4 (Melnyk et al. 2004). The highest level is the performance measurement systems which integrate lower level metrics together and try to answer, how well is the company performing. It is responsible for coordinating and aligning metrics across every level of the organization starting from the strategic objectives and ending to the operational measure (Melnyk et al. 2004). The second tier is a metric set. These are formed by grouping individual metrics together. According to Melnyk et al. (2004), the metric set consists of the metrics determined by a higher level of management to motivate, evaluate and direct a single person in charge of a specific process, function or activity. Moreover, the metrics set is an essential due to fact that it is often the relevant unit of analysis, and since the complexity and scope of an individual metric set can be viewed as a load and stress imposed upon that person's (Melnyk et al. 2004). Finally, the lowest level of measurement is individual metrics. This group consists of single indicators and measures which are dedicated to measuring a single item or activity.

These metrics levels are linked together (Melnyk et al. 2005). Single metrics provide the basis of the measurement system. Combining metrics together is possible to form the metrics set. To support strategic objectives this set guides, directs, and regulates activities (Melnyk et al. 2005). Finally, the performance measurement system is coordinating and managing the development of the various metrics and metric sets.



**Figure 4**, three level of metrics (Melnik et al. 2004).

### 2.3. Measurement frameworks

As discussed in the previous section, measurement systems are the highest level of measurements and have received approval from the research field. However, the situation has not always been the same. During the decades 1970 and 1980, the metrics and measures commonly used in manufacturing industries were subjected to highly vocal criticism from other researchers including (Skinner 1971; Hayes & Abernathy 1980). These criticisms resulted in many creative taught and innovations such as activity based costing and throughput accounting (Neely et al. 2000). Moreover, performance measurement systems took a big leap forward.

Since then, several different approaches have been proposed to provide integrative performance measurement system such as *Balanced Scorecard* (Kaplan & Norton 1996; Kaplan & Norton 1992; Kaplan & Norton 2001), *Performance Measurement Matrix* (Keegan et al. 1989), *Kanji business excellence measurement system* (Kanji 1998), and *Theory of Constraints* (TOC) (Lockamy III & Spencer 1998; Smith 2000). In the following subsection, these frameworks are presented and demonstrated corresponding strengths and weakness. Researchers have developed many other similar measurement frameworks, and all the frameworks attempt to provide a comprehensive solution for implementing a companywide performance scheme (Bititci et al. 2005). Previously mentioned systems are selected due to their research dominance and academic awareness.

### Balanced scorecard

One of the most widely used and recognized performance measurement system is the Balanced Scorecard (BSC) originally developed in (1992, 1996 and 2001) by Kaplan and Norton (Neely et al. 2000) and elaborated on by others like (Ittner & Larcker 1998). Kaplan and Norton realized that traditional performance indicators, which worked well in the industrial period, were becoming out of date (Kaplan & Norton 1992). Tangible assets were no longer behind the value creation, but there were intangible assets (Coe & Letza 2014). Moreover, they argued that single indicator or measure could not provide a clear performance measure. Therefore, managers require a balanced presentation of financial and operational measures (Kaplan & Norton 1992). Their solution to this problem was the Balanced Scorecard that combined four different perspectives to link overall performance, shown in Figure 5. Underlying perspectives are financial, internal business, customer, and innovation and learning (Kaplan & Norton 1992). This kind approach allows managers to answer four fundamental questions:

- How do we look to our shareholders (financial)?
- What must we excel at (internal business)?
- How do our customers see us (customer)?
- How can we continue to improve and create value (innovation and learning)?

Companies using the Balanced Scorecard aims to communicate and deliver their vision and strategy through four perspectives that create the structure of the measurement system (Kaplan & Norton 1996). Moreover, organizations using the Balanced Scorecard do not have to rely on short-term financial measures as a single metric of the company's performance. This measurement system introduces a manager's process where long-term strategic objectives are linked with short-term actions and measurements (Kaplan & Norton 1996).

The financial perspective is focusing on performance measures that indicate whether the company's strategy, implementation, and execution are contributing to bottom line improvements (Kaplan & Norton 1992). Hence, this perspective is influential to owners and shareholders. According to Biazzo and Garengo (2012), financial measures can be grouped into three categories. The first type is summary measures of financial results including profitability

rates, contribution margins, and liquidity ratios such as return on equity (ROE), return on assets (ROA) and earnings before interest and taxes (EBIT) (Biazzo & Garengo 2012). The second category is productivity and efficiency measures including measures such as cost reduction indexes, revenues per operator and many others. The final category is growth measures which include income and investment metrics such as revenues per market, product or customer. Productivity and growth categories are both connected to the summary measures, and they are also representing two forces, which are often opposed to each other (Biazzo & Garengo 2012). Therefore, it is essential to find the balance between these measures and underlying actions.

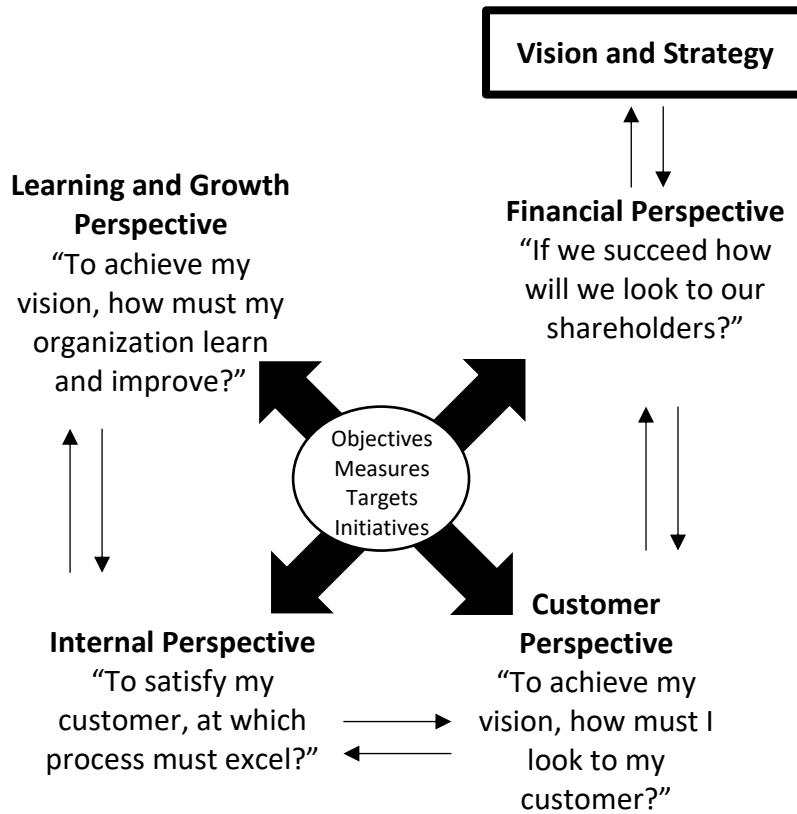
The Balanced Scorecard demands that company's general mission statement on the customer service must be translated into specific measurements that reflect the factors that matter to customers (Kaplan & Norton 1992). Therefore, the Balanced Scorecard should measure all the relevant success factors related to customer perspective (Biazzo & Garengo 2012). Customer measures must first identify who the target customer is and then analyze what the value proposition to the target customer is. According to Kaplan and Norton (1996), the value proposition can be outlined in three components. The first element is the product and services attributes which contain the functional qualities such as offers and prices. The second component is customer relationship focusing on the intrinsic characteristics of the offer. These characteristics include punctuality, response flexibility, and quality of customer service. The final element is image and reputation reflecting the intangible factors that may attract customer related to the client's value proposition.

The internal business perspective includes metrics focusing on internal process efficiency and performance. In the end, internal processes create the value which will satisfy the customer needs. Thus, the Balanced Scorecard tries to help managers to focus on critical internal operations to satisfy customer demand (Kaplan & Norton 1992). Therefore, the internal process should be linked into customer's value proposition and process measures should track the values which are visible to the customer such as on-time delivery and total lead-time (Biazzo & Garengo 2012).

The final perspective of the Balanced Scorecard is learning and growth which is concentrating on the organization's ability to maintain and improve its current value creation capabilities. Global competition and growth of customer expectation force companies to continuously improve their products and process. Therefore, this perspective is focusing on company's ability to improve old products and innovate new ones (Kaplan & Norton 1992). Alternatively, Biazzo and Garengo (2012) define this perspective slightly differently emphasizing the importance of corporate environment, culture, and competence measures. However, in summary, this category can be seen as a base where other perspectives are growing and derivating (Niven 2005).

Despite the Balanced Scorecard outstanding track record, there has been quite a lot criticism during the last couple of decades. As presented previously, from the theoretical point of view, the Balanced Scorecard considers business processes in one of four perspectives. However, the practical experience demonstrates that the process perspective of the scorecard usually only includes aggregated, high-level performance measures (Kung et al. 2005). Researchers Kung et al. (2005) continues criticism claiming that the Balanced Scorecards often take only a vertical view as they measure the performance of divisions, business units and departments. Whereas, the performance measurement system must also consider the business processes adequately because this is more stable than organizational units, generate added value and financial profit (Kung et al. 2005). Finally, researchers Striteska and Spickova (2012) argument that the scorecard can be seen as a controlling tool rather than an improvement tool due to lose control with the concept of continual improvement (Striteska & Spickova 2012).



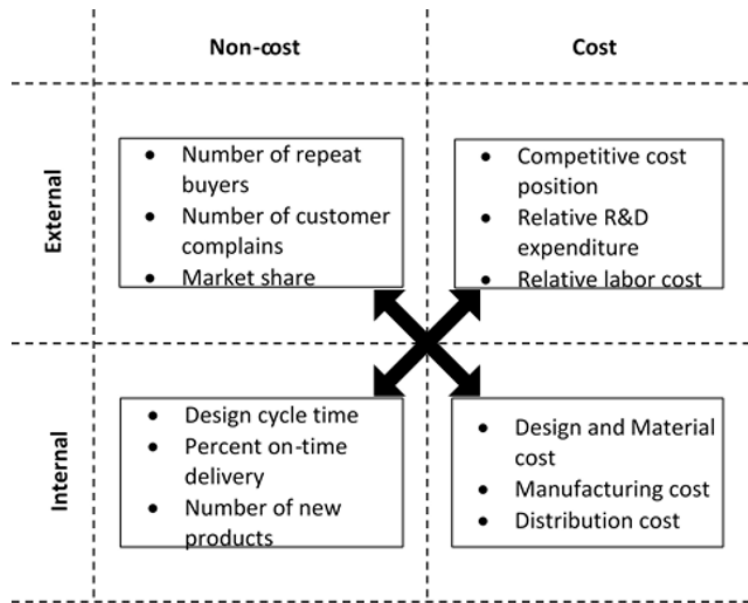


**Figure 5,** The relationship between the different perspective of the Balanced Scorecard (Kaplan & Norton 2001).

#### Performance Matrix

Second measurement framework is the performance measurement matrix presented by Keegan et al. in 1989. Like the Balanced Scorecard, the strength of the Performance Matrix lies in the way it seeks to integrate different aspects of business performance; financial and non-financial, internal and external (Neely et al. 2000). Performance measures must support the company’s multi-dimensional environment. Therefore, the organization tends to have an internal bias spending too much effort on internal performance measures and forgetting external measures (Keegan et al. 1989).

According to researchers Keegan et al. (1989), Figure 6 presents several performance measurements and classified them based on cost, or non-cost, internal or external factors.



**Figure 6**, The performance measurement matrix (Keegan et al. 1989).

Keegan et al. (1989) emphasize the need for external performance measures. For instance, an organization may be reducing its cost more slowly than its competitors, it might improve the quality of a product that is becoming outdated, or it may be gaining share in a market being dumped by others. Moreover, companies usually track their performance by indicating how the current year's performance compares to the last year's outcome. Although this kind of information is beneficial and necessary, but it does not communicate with an external perspective. The company does not know how it is performing compared to its closest competitors. Therefore, it is essential that company also measure its performance related to the external environment.

The second observation is that companies should also use non-cost measures when measuring performance such as a number of repeat buyers, market share and design lead time. All performance measurements should not be cost-based. For instance, reducing service cycle time will reduce queue levels. Reducing service queue will increase the number of payment transactions which increase the profit of the company. Therefore, by focusing on the costs drivers, the organization can affect profits.

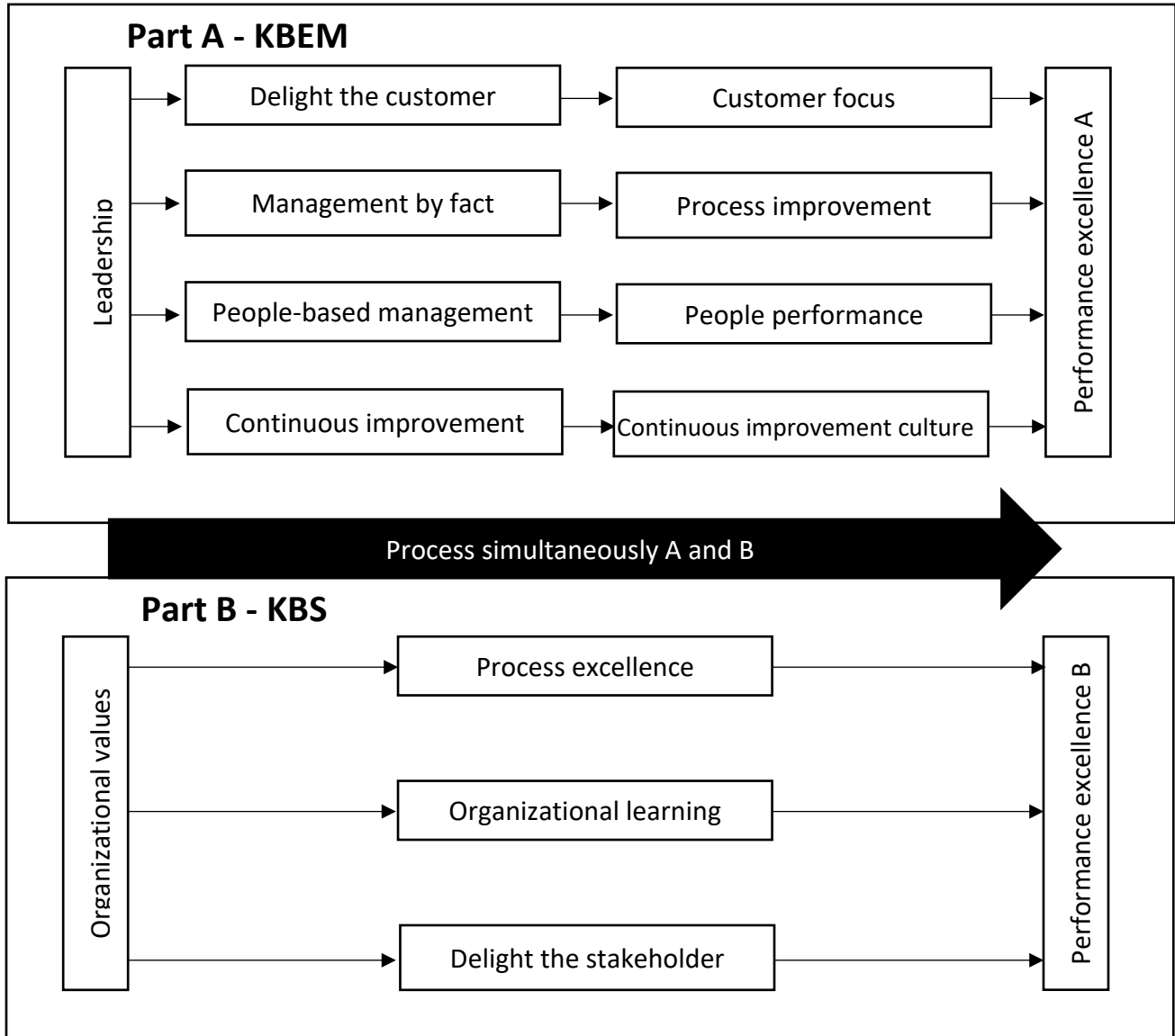
Populating the performance measurement matrix (Figure 6) is not very demanding. However, a more challenging task is to choose and select inter-unit and hierarchical measures. Performance measures should be hierarchical as well as integrated across business processes (Keegan et al. 1989). Measures should reflect the level of company's hierarchy and change accordingly. For instance, business level measures should include long-term shareholder wealth and return on investment metrics. On the other hand, division level measures should include market share, customer loyalty, and target costs. In the lowest level of the organization, measures are focusing on process quality improvement and minimizing scrap. Organizations can be divided into hierarchical levels many ways. Keegan et al. (1989) use division of six level containing: company, group, division, business unit, plant, and cell levels. Therefore, the division should reflect the properties of the enterprise.

The performance measurement matrix specifies, in reasonable accuracy, what the metrics should look like and provides a useful measurement development process (Striteska & Spickova 2012). However, the matrix is not as great package as the Balanced Scorecard and does not make explicit links between the different dimensions of business performance, which is probably one of the biggest strengths of Kaplan and Norton's Balanced Scorecard (Neely et al. 2000). Moreover, the Performance Matrix does not include customer or human resources dimensions of performance and therefore cannot give a truly balanced view of performance (Striteska & Spickova 2012).

Kanji business excellence measurement system (KBEMS)

Third performance measurement framework is Kanji business excellence measurement system. It is one of the younger conceptual systems and is considered as a second-generation performance measurement system (Striteska & Spickova 2012). The framework combines Kanji's business excellence model (KBEM) (Kanji 1998), Kanji's business scorecard (KBS) (Kanji & E Sá 2002) and is based on critical success factors, which are referring to the drivers of performance. The KBEMS is formed by combining two parts: part-A (KBEM) and part-B (KBS) together with the performance measurement system, see Figure 7 (Kanji 2002b). These parts should always be

applied simultaneously since they form an unambiguous and interdependent view of organizational performance.



**Figure 7**, Kanji business excellence measurement framework including A and B processes (Kanji 2002b).

Leadership is the most important aspect of part-A, indicating that leaders are the leading force for quality improvement and business excellence (Kanji 2002b). Their attitude and presence must

promote four principles: delight the customer, management by fact, people-based management and continuous improvement. Every principle works in conjunction with the essential core concept, namely customer focus, process improvement, people performance and continuous improvement culture, correspondingly. Part-A is essentially leading towards the measurement of performance internally, according to the views of managers and employees (Kanji 2002b).

In Part-B, organizational values are the most important driving factor leading to process excellence, organizational learning, and delight the stakeholder. Powerful and efficient management of these critical success factors will direct to a high-performance excellence. This part requires performance measurement to be evaluated from the external stakeholder's point of view, such as suppliers, government, and customers (Kanji 2002b). The main difference between parts is that part-B is more synthetic and concentrates on issues that are relevant to the external stakeholders, who may lack the knowledge and expertise to assess the organization against some of the criteria included on part-A (Kanji 2002a). Afterward internal (part-A) and external (part-B) scores are calculated, the final performance excellence index (PEI) can be evaluated (Weighted average of A and B scores) which provides an accumulated metric of the company's excellence in managing all the performance drivers (Kanji & E SA 2007).

Kanji business excellence measurement system has many advantages such as a multi-perspective view of performance, link to the organization's values and strategies and based on the CSFs, cascade and implement an organization's strategy (Striteska & Spickova 2012). However, some limitations and weak points are also presented such as primarily designed for senior managers to provide them with an overall view of performance and does not offer explicit guidance on how to develop and implement a performance management system effectively (Striteska & Spickova 2012).

#### Theory of Constraints (TOC)

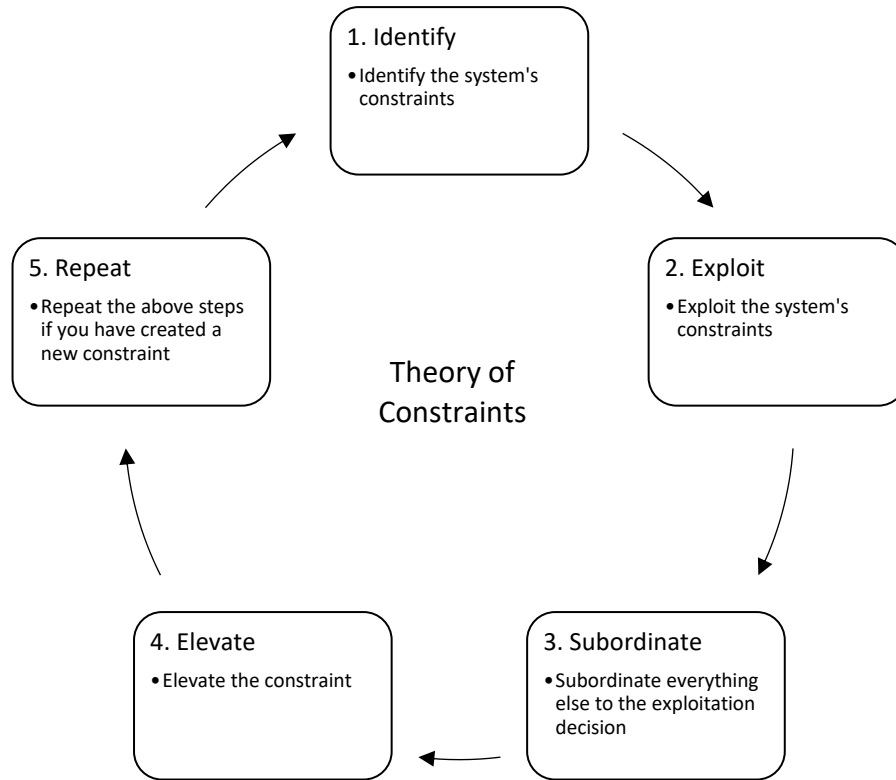
The final performance measurement system is the Theory of Constraints (TOC) developed by Eliyahu M. Goldratt in 1984 (Goldratt 1984). Since then the theory has drawn wide attention from

practitioners and academic researchers. It is a management philosophy which is focused on the weakest rings in the operation chain to improve the overall performance of the system (Zeynep et al. 2014). More precisely, the theory concentrates on the weakest points of the process, which are known as bottlenecks and try to determine the relationship between these bottlenecks. TOC view processes as they are rings of the same chain rather of thinking that they are separate from the each other. TOC is based on the idea that every system or process has at least one bottleneck which can be defined as any situation that creates harm and prevents the system from reaching its maximum performance level (Goldratt 1990). This approach means that processes or organizations are vulnerable because the weakest part, person or process can always damage or break the entire system. Therefore, it is an integrated management philosophy which tries to change how managers think and solve root problems related to firm's performance.

Furthermore, Goldratt argued that overall performance of an organization is bounded by its weakest link (Goldratt 1984). Therefore, if an organization wants to improve its results, the first step must be to identify the system's weakest link or constraint. Hence, TOC can be seen as performance measurement system. Goldratt introduced a method called the five focusing steps for addressing system problems on a continuous improvement basis (Mabin 2010). The TOC's 5FS are presented in Figure 8, and include following activities: identify the system's constraints; exploit the system's constraints; subordinate everything else to the above decisions; elevate the system's constraints, and when a constraint is broken, go back to the first step and start the loop again (Striteska & Spickova 2012).

The TOC performance measurement system is driven by the global goal of a business organization to make money now and in the future (Lockamy III & Spencer 1998). Measurement system involves three global measures for assessing a business organization's ability to obtain the money objectives (Goldratt 1984). These comprehensive measures are net profit, return on investment (ROI), and cash flow. Goldratt uses the net profit indicator as an absolute measure of the company's ability to produce earnings. Return on investment is a relative indicator given the amount of investment made in the enterprise (Lockamy III & Spencer 1998). The final measure is

the cash flow indicating survival case type. When a company has enough cash, this measure becomes less relevant. However, when the amount of cash is low, the other two measures becomes unimportant.



**Figure 8**, The working process of implementing TOC concepts and five focusing steps (5FS) (Goldratt 1984; Goldratt 1990).

Theory of constraints provides clear focus in a case of information overload by concentrating system's weak points (Striteska & Spickova 2012). Moreover, performance measures within TOC are both simple to conduct and readily understood. However, measurement system also includes some downsides. For instance, it is far from being a complete process measurement system, and according to Striteska and Spickova (2012), it simplifies the reality too much when assuming that there is always a proper constraint in the system.

#### Criticism and summary

The presented review demonstrates that the context where measurement systems are performing is constantly changing and how these systems try to solve measuring problems (Striteska & Spickova 2012). Outside of the review stayed several measurement frameworks such as Performance Pyramid (Lynch & Cross 1991), performance prism (Neely et al. 2002) and European foundation for quality management (EFGM) (EFQM 2013). The presented review of frameworks attempts to provide a comprehensive view of organizational performance. The performed analysis confirms that every conceptual measurement system has some advantages and several disadvantages. The most common limitation is the insufficient guidance for actual selection and implementation (Tangen 2004). The frameworks mentioned above have a clear and extensive theoretical background. However, these frameworks do not provide guidance on a how company should design specific performance measurement system as well as rarely help with the practical realization of specific measures at an operational level (Striteska & Spickova 2012). Because the business environment develops dynamically, strategy of company needs to be revisited over time, and when a strategy changes, performance measures must change too. Therefore, companies are requiring flexible and adaptable measurement systems.

#### 2.4. The challenges of measuring service process

This subsection presents measurement challenges related to the service process and service industry. Service processes are harder to measure than manufacturing processes. It is important to understand what are these measurement challenges and where and why they arise. When these challenges are known, more accurate and preferable measurements can be designed and implemented.

#### Services are different

As the previous service business classification shows, services can be quite different. A wide range of services with different characteristics makes the service measurement challenging (Tinnilä 2015). For example, professional services and service factories have a very different service features, and therefore measurements should also be different concentrating their service specific properties. The main point of the professional service is to create value for the customer.



Its services offering varies a lot, and employees knowledge largely determines the quality of the service received by the client. Therefore, throughput time or process time measurements are not capturing essential features of this category. More suitable measurements include customer satisfaction and employees competence. However, the former indicators are critical to service factories because they are trying to improve service efficiency and speed up the service process. Hence, service measurement should take into consideration what is the type of the underlying service process and based on that define and design measurements.

#### *Services deals with greater variance*

Service companies cannot measure and reduce variance as easily than manufacturer companies can. Service variance can originate from multiple sources. For example, it can depend on the person performing the task or the variation can emerge from the business environment (Harmon et al. 2006). According to Harmon et al. the first source of variance is the employee. Human is not a robot, so the quality of the work alters. The second source of variance is the customer behavior. Customers underlying motivation drives towards action to consume something. The purchasing motivation can be either positive or negative (Rossiter & Percy 1991). The negative motivation means that customer is avoiding unpleasantness or pain. However, the positive motivation means that customer wants to achieve some type of sensory gratification. For example, a decision to purchase an analgesic preparation is motivated by the desire to avoid pain. On the other hand, a decision to buy a cake is driven by the desire for sensory gratification. The final source of variance is the business environment. Each business environment has unique aspects that may be difficult to measure. For instance, telephone advice in hospitals is completely different compared to the IT call center support.

#### *Constantly changing operational environment*

Digital technologies are rapidly developing the business environment, and it is influencing how businesses are measured and managed (Barton & Court 2012). According to Nudurupati et al. the most challenging problem of the performance measurement and management in the digital era can be divided into two-segments (Nudurupati et al. 2016). First, due to the constantly changing external environment measurement systems are forced to be more dynamic and flexible. In other

words, because the external business environment is not stable, it will affect a corporate's strategy which should be linked to measurement systems (Melnyk et al. 2014). If strategy objectives and operational measurements are not bound together, then the change in the strategy objectives may render performance measurement irrelevant or even counterproductive manner (Kaplan & Norton 1996). Nevertheless, the assumption is that operations measurement and strategic objectives should be aligned together (Neely 1999) and when strategic metrics changes then operational measurements should also change and amend. However, according to Johnston and Pongatichat (2008) many times this is not a case. Operations managers have developed many approaches to deal with the tensions between measurement and strategy without the need to change performance measures at all (Johnston & Pongatichat 2008) (More detailed in the next section).

Second, companies must deal with different varieties and volumes of data to create competitive advantage. Companies can gather data in several locations and formats such as software-logs, videos, sensors, timestamps and even from social media (Nudurupati et al. 2016). However, the challenge related to the performance measurement is to process the data into the meaningful format to enable advance decision-making (Bititci et al. 2012). During the recent years, researchers have started to call this kind of analysis involving large volumes of data, as big-data or data analytics (Waller & Fawcett 2013).

#### The data problem

Even when companies know what to measure, they may still have problems to get measurement data and achieve needed accuracy (Harmon et al. 2006). According to Harmon et al. usually, data is not uniformly defined and collected across an organization. For example, customer's service request involving the installation of three computers could be measured as a single installation in one organization unit and as three in another. Moreover, even if the digitization enables the use of digitalization and helps to gather data more easily many times, still the service process lack the automated measurements system and instead of measuring is made by the human-driven steps.

#### Hidden costs

Measurement systems often have positive impacts on the business results. However, metrics researchers have also found that sometimes this is not a case. For example, in certain cultural contexts, the company specific work environment can pose negative and even dysfunctional behaviors when using performance measurement systems (Bititci et al. 2006). Moreover, researcher seems to have united view that increased control throw measuring does not enhance corporation's overall performance (Bititci et al. 2012). From process thinking perspective, performance measures and targets create a command and control culture which often engender hidden costs and demoralizes people by sub-optimizing various parts of the process (Seddon 2008). Therefore, it is essential to understand the dyadic relationship between performance measurement and organizational behavior (Franco & Bourne 2003; Nudurupati & Bititci 2005). Leading to it that the performance measurement and management is a social phenomenon, as its behavior is shaped by the values, emotions and basic beliefs of the individuals, organization and the society within which it operates (Bititci et al. 2012).

#### Summary

As noted above, measuring in the service business can be a challenging task. Table 2 includes the main differences between service industry and manufacturing industry from the measuring point of view. In the services side value creation mainly happens through skilled workers. However, in the manufacturing business, hard assets are the main value source. Therefore, also customer requirements impact to the product characteristic. In contrary, in the service business, customers emphasize more output of the service process or the service process itself. Moreover, services have relative lower automation level when considering measuring data compared to the manufacturing industry. This data gap between manuf. Vs. services might diminish radically through AI enabled service delivery. Due to human driven steps, in the service process, humans are usually responsible for errors and defects. Instead in manufacturing business, defects can be quantified easily and often refer to products characteristics. Finally, service improvements are often associated with non-monetary form while in the manufacturing industry these are related to monetary benefits.

**Table 2,** Comparison between service industry and manufacturing relating to measuring process (Edvarsson & Olsson 1996; Johannsen et al. 2011; Breyfogle et al. 2001; Benedetto 2003).

	<b>Service industry</b>	<b>Manufacturing industry</b>
<b>Creator of the value</b>	Employees	Hard assets
<b>Customer requirements</b>	Output of the service process (loan offer) or the service process itself (massage)	Product characteristics such as durability and efficiency
<b>Data collection</b>	Semi-automated	Full-automated
<b>Defects</b>	Employees are usually responsible for errors and defects and debugging is challenging	Defects can be quantified easily and refer to product characteristics
<b>Improvements</b>	Often associated with non-monetary benefits such as customer experience and satisfaction	Often associated with monetary benefits that can be easily quantified such as idle time

In the next section, discussion continues of strategic alignment which is the subject of the main topic of this research. Strategic alignment between organization’s objective and operational measures is essential to cope in a dynamically changing business environment.

### 3. Strategic alignment

Performance measurement is a critical activity for operations management in order to improve and control service-operations together with report progress and ensure alignment to strategic goals (Wouters & Sportel 2005; Amaratunga et al. 2001; Franco-Santos et al. 2007). Much of the performance research is concerned about developing conceptual models and frameworks or investigating the characteristics of performance management systems (Johnston & Pongatichat 2008). However, during the last decades, the focus seems to switch from developing models and frameworks to the implementation of such models and frameworks in practice (Franco & Bourne 2003).

Performance measurement and management literature have become apparent that companies' performance measures should be periodically reviewed to ensure alignment and consistency with strategy objectives (Johnston & Pongatichat 2008). If this is not the case, changes in strategy which are not reflected to priorities can make performance measurement unsatisfactory or even harmful (Dyson 2000; Kaplan & Norton 1996; Kuwaiti 2004; Neely et al. 1997). In turn, strategy-aligned operation measurements can promote and support the implementation of the strategy (Pongatichat & Johnston 2008). Therefore, it is important for companies to understand the gravity of strategic alignment to survive and prosper in a dynamically changing business environment.

The aim of this chapter is to give basic understating of alignment between operations measurement and strategy. The first subsection provides an overview of the literature about the alignment between performance measurement and strategy including the benefits of alignment. The second subchapter focus on the keynote of this research, by investigating reasons why there is linking challenges between measures and strategic objectives. The final subchapter presents strategies how managers manage these tensions.

#### 3.1. Alignment between measurement and strategy

Regarding alignment with strategic objectives Skinner (1969, 1971) was one of the early pioneers in the field of manufacturing literature to recognize the need to link operational measures to

strategic targets (Johnston & Pongatichat 2008). Moreover, studies have found an indication of consistency between performance measures and organizational objectives (Lockamy III & Spencer 1998) and reported that the congruence of measurements and targets helps an organization to link its operations to strategic goals (Hudson et al. 2001). Therefore, researchers appear to have a clear view that operational measures need to be derived from the corporation's strategic objectives (Neely et al. 1995; Neely et al. 1997; Wouters & Sportel 2005).

Many authors have identified the benefits of strategy-aligned operations measurement (Tapinos et al. 2005; De Toni & Tonchia 2001; Ittner & Larcker 2003; Lockamy III & Spencer 1998; Parker 2000). Including advantages such as (Johnston & Pongatichat 2008):

- Informing the organization about strategic direction
- Communicating strategic priorities
- Creating a shared understanding
- Monitoring and tracking the implementation of the strategy
- Aligning short-term actions with long-term strategy
- Encouraging behavior consistent with strategy
- Making both goals and targets apparent
- Creating clear the links between the performance of individuals and sub-units, and sub-units and overall organizational performance
- Promoting integration among various organizational processes
- Restricting overemphasis on local objectives, thus reducing sub-optimization
- Concentrating change efforts
- Allowing and encouraging organizational learning

Strategy alignment with operational measures is a continual process (Johnston & Pongatichat 2008). Whenever a strategy changes, for example, driven by development in the external environment or internal changes in senior personnel or profit requirements, performance measures need to be reviewed and if necessary modified to ensure alignment with strategy objectives (Bourne et al. 2000; Parker 2000). Due to the dynamically changing operational

environment of the organization, it requires constant modifications to strategies and operations measures. Nevertheless, only a few organizations have systematic processes in place to manage the evolution of their performance measurement system to ensure that it continues to reflect the strategy of the company (Kennerley & Neely 2003).

Therefore, researchers Johnston and Pongatichat (2008) have argued that the misalignment between strategy and operation measures is a common and spontaneously occurring condition. Also, other scholars have argued that it is a natural phenomenon, in both private and public organizations, due to either continuous change in an external environment and frequent or at least infrequent changes in the internal environment (Bourne et al. 2000; Miles & Snow 1984). Moreover, Pongatichat and Johnston (2008) have identified several potential benefits of misalignment enabling managers to balance the strategic focus and the broader requirements, encourage organizational learning, manage the operational realities and create flexibility. The process of alignment requires management attention, time effort, and commitment which are not always available, resulting in tensions between strategy and measurement (Johnston & Pongatichat 2008). Researchers do not claim that misalignment is beneficial, or organizations should strive for such, but they argued that in some cases it might not be profitable to use plenty of resources to achieve it.

### 3.2. Linking challenge

Measurement systems can help to direct allocation of resources, evaluate managerial performance or assess and communicate progress toward strategic objectives (Ittner & Larcker 2003). One of the biggest challenges that companies encounter in measuring process is to select which of the hundreds nonfinancial measures to use. Nonfinancial measures such as quality of service, employee satisfaction, and customer loyalty are affecting the company's profitability and efficiency. Researchers Ittner and Larcker (2003) conducted the field research by investigating over 60 manufacturing and service companies focusing on company's nonfinancial measurements. They found that improved alignment of measurement systems and strategy objectives enhances the firm's overall performance (Ittner & Larcker 2003). According to their research, most companies have not tried to identify nonfinancial measures that might boost the

chosen strategy of the enterprise. Moreover, companies have not demonstrated a cause-and-effect link between measurements and profit. Relating to these findings researchers also prompted out several common mistakes companies make when trying to measure nonfinancial performance (presented in the below).

#### Linking measures to strategy

The first problem is that operational measures are not related to strategic objectives. Many companies think that they have solved this problem by adopting performance measurement systems like Balanced Scorecard. However, just using off-the-shelf framework will not help to identify which operational measure and drivers make the greatest contribution to the corporate financial outcome and strategy. More advanced companies have tackled this problem by defining operational measures based on causal the models (value driver maps). Causal models try to identify and demonstrate the possible causal relationship between the operational measurement and the strategic objectives. Middle section of Figure 9, presents an example of the value driver map by arguing that efficiency is composed of throughput time, state of automation, waste reduction and process management. However, only 30% of the companies in the survey have developed causal models (Ittner & Larcker 2003). Albeit, the causal model, helps organizations to improve and streamline processes together with increasing results.

#### Linkage validation

The second mistake is the inadequate validation of correlation of links meaning that it is essential to analyze links inside the causal model carefully. Based on Ittner and Larcker (2003) study, only 21% of companies using the causal model have testified the validity of their links. In far too many cases, management simply relied on its preconceptions about what is important to customers, employees, suppliers or investors rather than verifying whether those assumptions had any sensibility (Ittner & Larcker 2003). Thin lines in Figure 9 are presenting the possible causal links.

#### The translation process of metrics

Researchers Melnyk et al. (2005) call the process when strategic objectives are transformed into the operational measurements as translation. The metrics oriented research has had a little focus



on the procedure by which corporate objectives are translated down to metrics (Melnyk et al. 2005). The focus has been more on testing specific hypotheses and frameworks. However, many researchers have still verified that the alignment between strategy and metrics can be associated with the higher performance of the company (Abernethy & Lillis 1995; Ittner & Larcker 2003). Despite the benefits, it is not a simple task to achieve alignment between metrics and strategy (Melnyk et al. 2005). Metrics can have very complex relations among other metrics in the measurement system. Moreover, the relation and influence of individual metrics to strategic targets can depend on the time-lag (Banker et al. 2000; Nagar & Rajan 2001). In addition, the metrics influence to the strategic objectives can be explained, in some cases, by the value of other metrics in the same metric set (Melnyk et al. 2005).

#### Translation noise

As discussed previously, aligning measurements is not easy and clear process. One of the most significant challenges is an information “noise”. According to Melnyk et al. study (2005), the noise can originate from several sources such as customer, strategy, instrumentation and cause-and-effect relationship. It complicates conducting translation process of the measurements. The process of translating higher-level strategic goals and objectives into lower-level metrics is typically based on a set of earlier perceived cause and effect relationships (Melnyk et al. 2005). These relationships identify the lower-level activities that will affect or cause the achievement of the higher-level outcomes. However, very often this causal model relationship is not deterministic. Melnyk et al. (2005) findings are in line with previously presented Ittner and Larcker (2003) conclusions that these relationships are rarely validated in the companies. Furthermore, this becomes a severe problem when managers start to use the proxy measures (Melnyk et al. 2005). In the business environment, the relationship between the proxy measure and the target objective is uncertain and also a possible source of human manipulation. The viable risk is that the proxy itself becomes the objective eclipsing the real target.

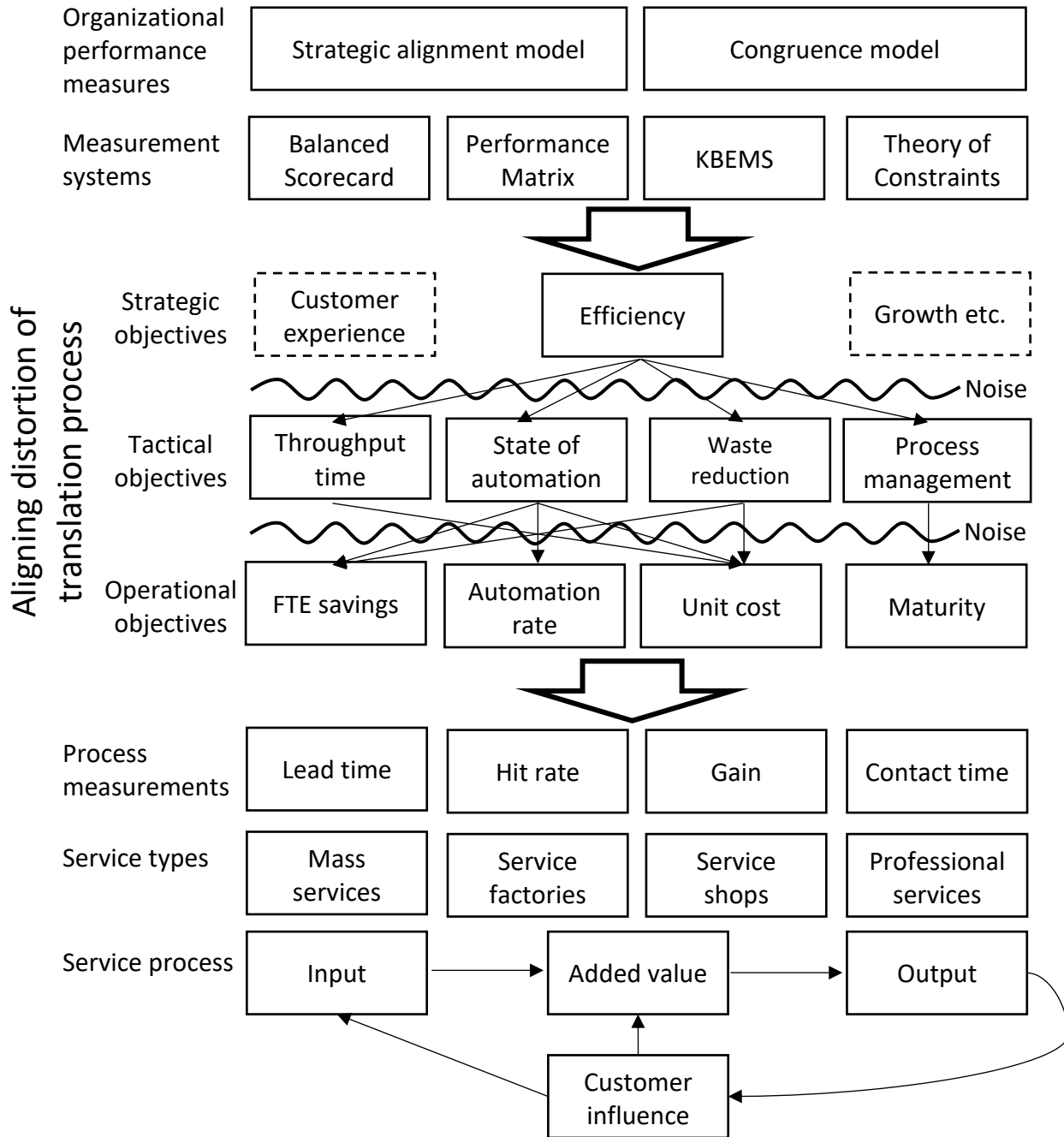
#### Summary

Linking and aligning synthetization between operational measurements and strategic objectives is presented in Figure 9. Organizational performance can be investigated using several methods

such as the strategic alignment model and the congruence model. The second layer is performance measurement frameworks. The main idea of measurement systems is to accelerate performance creation. Researchers have developed numerous measurement frameworks including Balanced Scorecard, Performance Matrix, KBEMS and Theory of Constraints. The purpose of these systems is usually to perform alignment between strategic objectives and operational measurements. Strategic objectives control and guide companies into the desired direction. However, these goals are often quite abstract and high-level. To achieve strategy targets, they are often needed to divide into smaller fragments according to implementation perspectives. Researchers Melnyk et al. (2005) call this process as translation when strategic objectives are translated into the operational level. For example, the efficiency as a strategic objective can be compound from four tactical objectives. These tactical objectives are throughput time, state of automation, waste reduction and process management. Going forward, these tactical objectives are matched to the operational objectives which have the shortest implementation period. Operational objectives relating to efficiency are full time equivalent (FTE) savings, automation rate, unit cost and process maturity. Further, these operational objectives are connected to process measurements.

Different levels of strategic objectives (tactical and operational) should be connected to each other based on causal correlations. That is a reason why researchers Ittner and Larcker (2003) call the objective linking process as a causal model or a value driver map. In practice, these causal links are complicated to identify and verify. Many things affect negatively to the causal modeling process, and these challenges are grouped and named as noise (Melnyk et al. 2005). As Ittner and Larcker (2003) presented, often alignment inside the causal tree is not clear. In Figure 9, this problem is presented and named as aligning distortion of the translation process where the noise is illustrated as a wave. This aligning distortion can create challenges into the measurement process. Meaning that strategic objectives are not aligned with operational measurements. Hence, the lower-level measurements results indicate some changes which cannot be explained by upper-level strategic targets and vice versa (Melnyk et al. 2005). Moving downward on the graph, the next level is the process measurements such as lead time, hit rate, gain and contact

time. These process measurements are dependent on the service process type. Finally, under different service types, there is general service process. The service process starts when it receives input command. After value addition, the finished output is ready, and in the same, the customer can influence every part of the service process.



**Figure 9**, The challenge of aligning Hitragic objectives and operational measures.

### 3.3. Strategy tension

Melnyk et al. (2005) conducted an empirical study based on 45 interviews, confirmed the existence of tensions between topline strategic metrics and bottom line operational metrics. The tension is a reaction force due to distortion between two objects, in this case, strategy objectives and operation measures (Johnston & Pongatichat 2008). Therefore, the magnitude of tension is the function of the distance between two objects (strategy and operation measures) in the organization structure. In theory, there are two ways to handle misalignment tension. Change the strategy to fit with the measures or modify the measures to fit with the strategy. However, in practice, the strategy can be seen as a driving force, and therefore it should lead to measures.

Researchers Johnston and Pongatichat (2008) conducted an interpretive multiple-case study based on detailed interviews with managers and supervisors in four public government agencies to analyze misalignment tension and various management strategies. The research revealed that there are three types of tension: between top-line and bottom-line, between stakeholders and between short and long-term objectives. First tension source is similar to what other researchers have suggested (Melnyk et al. 2005). The second tension source means that other stakeholders give opposing pressures which encourage managers not to align (all) their measures with the organization's strategic objectives. For example, managers can argue that if their operations measures were directly aligned with the current strategy, they would not be able to provide measurement data referring to other requirements not included in the strategic objectives. The third source of tension is between long and short-term objectives. In the Johnston and Pongatichat (2008) research managers reported that measuring long-term strategic objectives was often difficult because they were vaguely defined as well as taking a long time to obtain. Therefore, managers tended to use current short-term measures as proxies for their long-term goals, despite the lack of validity and consequences of the cause-and-effect relationship between short-term measures and long-term strategic objectives.

There is hardly any mention in the measurement literature of how operational measures should be aligned with the strategic objectives. The assumptions appear to be that they should change,

as the strategy changes. However, according to Johnston and Pongatichat (2008), this is not the regular case.

Managers have developed several approaches to handle the strategy tension, so they do not have to change their operational measurements (Johnston & Pongatichat 2008). Manager's handling strategies can be divided into three groups: do-nothing strategy, pseudo-realigning strategy and distracting strategy (Johnston & Pongatichat 2008).

#### Do-nothing strategy

Managers following do-nothing strategy did nothing to deal with alignment tensions. Therefore, three main tactics within this strategy were the ignoring tactic, the assuming-and-believing tactic, and the avoidance tactic. The simplest tactic is to ignore the issue of strategy-aligned operation measurements. While all managers and superiors worked hard to achieve operational objectives using operational measures in accordance with their action plans, some of them simply ignored their strategic goals and targets, as mentioned in their strategic plan. The assuming-and-believing tactic means that managers simply assumed and believed that the measures they had were reasonable indicators of strategy, even if they did not have proven the cause-and-effect relationships. This tactic is an easier path to take than challenging the relationship and having to work to explain the relationship. Under do-nothing strategy final tactic is avoidance. Managers using this tactic, avoided any discussion of alignment even though the problem of performance measurement misalignment with strategy is known.

#### Pseudo-realigning

According to Johnston and Pongatichat study (2008), the second strategy is pseudo-realigning. Unlike the supervisor who used do-nothing strategy, some managers tried to curb the alignment tensions by making performance measurements seem consistent with the organization's strategy. The first tactic is nominal plan-chancing. Meaning that managers only make ostensible changes to their operational measures to align with strategy. For example, they might modify titles and subheadings in their plan, so it seems that the plans have been altered to fit the strategy. Albeit nothing had been changed and the same operation was continued while the

strategy has changed. The name of the second habit is story-telling tactic demonstrating managers desire to come up with a story that links current operation measures to the changed strategy. Under this strategy, the last tactic is an alignment-obscuring tactic. Illustrating managers desire to raise the question about with what performance measures should be aligned. During interviews Johnston and Pongatichat (2008) reported that some informants claimed that performance measures should support the vision, others claimed it supported the mission; others argued that it should align with objectives, outputs or strategy instead. Therefore, by obscuring the relationships between performance measurement and other organizational activities, managers could claim the existence of some alignment.

#### *Distracting strategy*

The final strategy category, according to Johnston and Pongatichat (2008) research, is the distracting strategy. Meaning that managers deal with alignment tensions by distracting people's attention from the alignment problem. The first tactic is a short-term success. Strategy objectives are often vague and required many months or even years for their realization. Therefore, it is sometimes difficult to measure their accomplishment. Thus, managers have measured a short-term performance rather than long-term because the short-term measures are assumed to be intermediate goals for long-term goals. The second target-adjustment tactic is used as a way of distracting senior management attention from the effectiveness of their activities because the operational focus was on the completion of operational tasks. The third tactic is blaming. As the alignment issue is raised, some managers seem to be well prepared to blame several factors for hindering such alignment. Including factors such as underdeveloped knowledge, lack of management attention, scarce resources, changing requirements, and the performance of other units. The final tactic is deflecting tactic meaning that alignment tensions would be lessened by diverting attention from the alignment issues to a demonstration of attention and acceptance of the alignment requirements. Finally, Johnston and Pongatichat (2008) study is summarized in Table 3 presenting managers three strategies and associated tactics to handle strategy alignment tension.

**Table 3**, Summary of employees strategies and tactics to cope with misalignments between operations measures and strategy objectives (Johnston & Pongatichat 2008).

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<b>Do-nothing strategy:</b> take no action to align measures to strategy	
Ignoring tactic	Ignore the misalignment, report progress without demonstrating the link between strategy and measures
Assuming-and-believing tactic	Assume that the measures used to support the strategy
Avoidance tactic	Avoid discussing the misalignment of measures and strategy

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<b>Pseudo-realigning strategy:</b> appear to take action to align measures with strategy	
Nominal plan-changing tactic	Make symbolic changes to the measures in order to appear to be responsive
Story-telling tactic	Use the existing measures to “demonstrate” that they supported strategy
Alignment-obscuring tactic	“Demonstrate” alignment with strategy, objectives or vision – all of which were different

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<b>Districing strategy:</b> distract people’s attention from the alignment issue altogether	
Short-term success tactic	Demonstrate success in achieving short-term objectives (which were assumed to support longer-term strategy)
Target-adjustment tactic	Change targets to distract attention away from the impact and effectiveness of operational activities
Blaming tactic	Blame lack of knowledge, lack of management, changing requirements or the performance of other units/agencies
Deflecting tactic	Change the subject to other management “fads”

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In the next chapter, the study continues by discussing more organizational performance investigation methods presenting the congruence model and the strategic alignment model. The congruence model is used as a framework for conducting research interviews, and the adapted strategic alignment model is used to demonstrate research findings.

#### 4. Organizational performance

Organizational Performance (OP) has become an important part of empirical research in the field of business policy. Researchers often take organizational performance into consideration when examining organizational phenomena such as structure, strategy, and planning (Dess & Robinson Jr. 1984). In order to achieve better organizational performance components of a company such as strategy, culture, and employees need to be aligned (Bititci et al. 2006). Organizational alignment is the extent to which the design, strategy, and culture of the organization are cooperating to achieve the same objectives (Semler 1997). It is a measurement of the agreement or relative distance between several ideal and real elements of organizational life. Powerful alignment requires agreement rather than conflict among the strategic, cultural, and structural dimensions. Therefore, a well-aligned organization is very efficient. Pioneers in the field of organization alignment are Nadler and Tushman by introducing congruence model (Nadler & Tushman 1980).

Moreover, information technology (IT) revolution has added new aspect for the alignment process. Therefore, the literature suggests that firms cannot be competitive if their business and information technology strategies are not aligned (Avison et al. 2004). Several alignment models have been introduced in the literature, primary among them the strategic alignment model (SAM) (Henderson & Venkatraman 1993). Henderson and Venkatraman (1993) developed a strategic alignment model to conceptualize and direct the research and the practice of strategic management of information technology (Grembergen 2004).

In the empirical research section, the congruence model and the modified strategic alignment model is used to analyze case companies. Therefore, these theories are presented in the following subchapters. Regarding of the structure of this chapter, first the congruence model is presented to offer a big picture of the alignment theory related to the organization environment. The next subchapter concerns the strategic alignment model which gives the measurements specific perspective to the alignment problem. The final subchapter illustrates the synthetization



of literature review to analyze alignment challenge and presents framework which is used in the empirical research section.

#### 4.1. Congruence model

Nadler and Tushman (1980) constructed a view of the organization as an open system composed of interdependent inputs, process components, and outputs (Semler 1997), see Figure 10. They argued that the whole system function with greater or lesser effectiveness depending on the degree of congruence, fit, or consistency between each system components. Their model is based on the belief that organizations can be considered as sets of interactive subsystems that scans and recognizes changes in an external environment (Cameron & Green 2012).The congruence model shows that in order to understand the organization's performance, must first understand the organization as a system that consists of the following basic elements:

- The input is used to attach from both internal and external sources,
- The strategy is used to turn vision into a set of decisions on where and how to compete,
- The output is the products and services that it creates to meet its strategic goals,
- The critical transformation process through which people who work in both formal and informal arrangements change input into output (Mercer Delta 2003).

The Nadler and Tushman model move away from a simple two-way notion of fit, such as an equivalent between strategy and structure (Chandler Jr 1962), to advance a richer framework based on four organizational dimensions: critical tasks, formal organization, informal organization, and the people (Russo & Harrison 2005). The model views the organization as a system that draws inputs from both internal and external sources such as environment, resources, and history transforming them into outputs like activities, behavior, and performance of the system at three levels: individual, unit, and system. The insight of the model is the opportunity to analyze the organizational structure in a way that does not give right answers but instead stimulates thoughts on what needs to happen in a specific organization to succeed (Cameron & Green 2012).

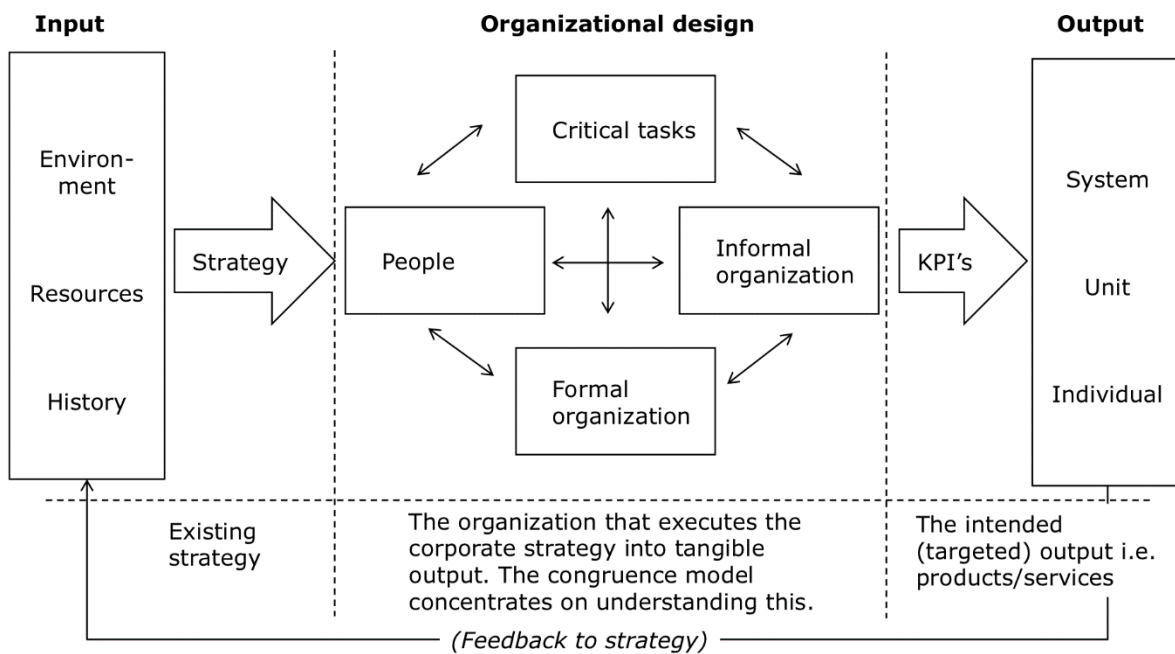
#### Input of the model

The input of the congruence model includes the elements that at any given time form a set with which it must act and work (Mercer Delta 2003). There exist three main categories of input, each of which affects the organization in different ways. The first input category is the environment, meaning that every corporation exists within a broader environment, which includes people, other businesses, economic and social forces, and legal restrictions. The second category of input is the organization's resources, including the full range of available assets such as employees, technology, capital, and information. The final source of input is the history referring the idea that organization functions today is considerably influenced by major events that occurred in the past. It is necessary to understand the critical events that have changed it such as strategic decisions, the behavior of key leaders, crisis responses, and the evolution of values and beliefs, to reasonably predict organization's ability to act in the future.

#### Transformation process

The core of the congruence model is the transformation process, which draws upon the input of the environment, resources, and history to generate a set of outputs (Mercer Delta 2003). The model is based on the principle that organizational performance is derived from four elements: tasks, people, structure, and culture (Cameron & Green 2012). The task unit includes actual day-to-day activities carried out by employees. Process design, pressures on the individual and available rewards must all be considered under this element. The people element is about the skills and characteristics of the employees. The main questions which need to be answered under this element are: what are their expectations and competencies and what are their backgrounds. The formal organization refers to the structure, systems, and policies in place and include factors like strategic grouping, formal links, rewards, information systems, and human resource management systems. Therefore, this unit raises the question, how are things formally organized. Finally, the informal organization consists of all the unplanned, unwritten activities that emerge over time such as culture, norms, power, values, communication networks, informal power, and informal roles.

As mentioned earlier, the higher the compatibility or congruence among these elements (tasks, people, structure, and culture), the greater the performance. For example, if great people are working in a company, but the culture of the organization does not support or fit in the way they work, their best qualities cannot be found. Likewise, the company can have the latest technology and excellently streamlined processes to support decision-making, but if the organization culture is bureaucratic, decisions will undoubtedly take a long time and produce poor decisions.



**Figure 10**, A congruence model for organizational analysis (Nadler & Tushman 1980).

#### Output of the model

The ultimate purpose of the firm is to produce output such as the pattern of activities, behavior, or performance of the system at the following levels: system, unit, and individual (Mercer Delta 2003). The first level is the total system meaning that the output is measured regarding of goods and services produced, revenues, profits, shareholder return, job creation, community impact, policy or service outcomes. The second level is the units within the system referring the performance and behavior of the various divisions, departments, and teams that form the firm. The final layer is individuals indicating the behavior, activities, and performance of the employees within the organization.

The congruence model provides multiple benefits. Through improved organizational design it will create better organizational functionality and therefore, superior performance. Moreover, the model provides excellent practices for innovation and organizational renewal and also exposes performance and opportunity gaps and offers solutions. Building a cohesive organization which will share a common strategic intent and values enhances clarity and drives for the better performance.

#### 4.2. Strategic alignment model

Henderson and Venkatraman (1993) developed a strategic alignment model to conceptualize and direct the research and the practice of strategic management of information technology (Grembergen 2004), see Figure 11. They were the first to describe in a clear way the interrelationship between business and IT strategy (Smaczny 2001). Many authors have used their model for further development, including (Luftman & Brier 1999), (Burn & Szeto 2000) and (Smaczny 2001).

##### Strategic fit

The strategic alignment model is based on two building blocks: strategic fit and functional integration (Grembergen 2004). Strategic fit admits that the IT strategy should be expressed in terms of an external domain: how the organization is positioned in the IT marketplace and an internal domain: how the IT infrastructure should be configured and managed. Henderson and Venkatraman (1993) argued that the external and the internal domains are equally important, but managers traditionally consider IT strategy concerning the internal perspective because historically IT is viewed as a support function and therefore less essential to the business (Grembergen 2004).

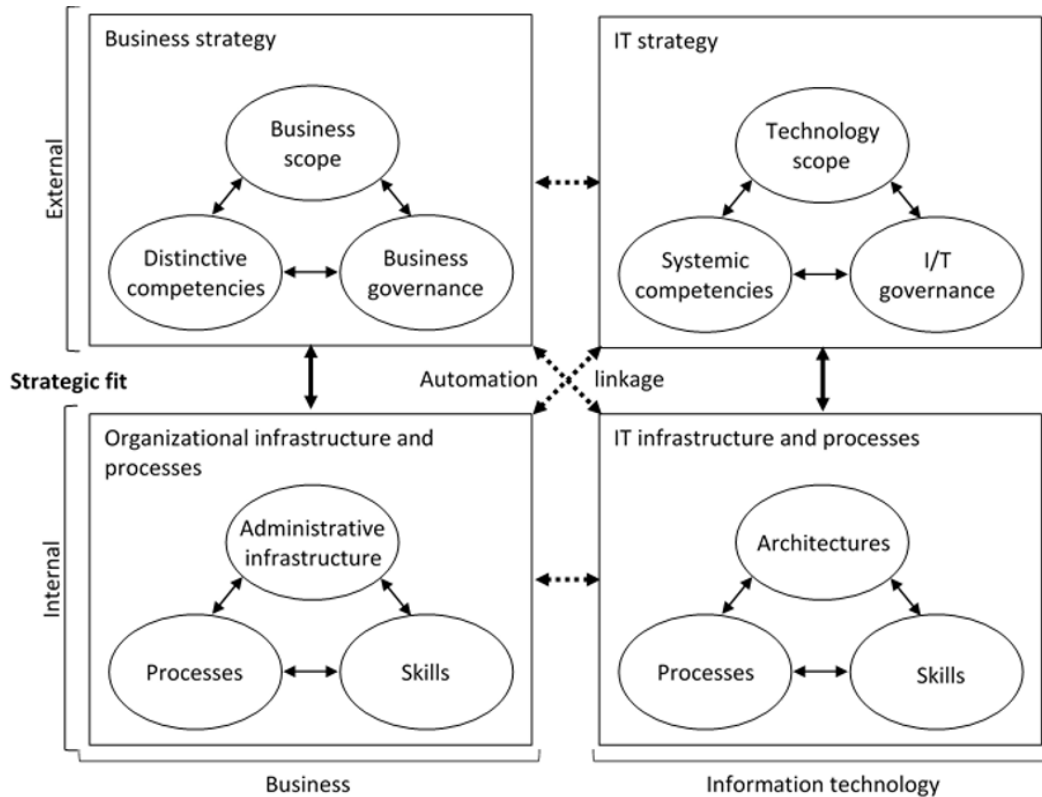
According to Grembergen study (2004), the organization's position in the IT market (external IT domain) includes three decisions. The first decision is technology scope referring specific information technologies, like local and wide area networks, which support business strategy initiatives or can shape new business strategy initiatives for the enterprise. The second component is systemic competencies including attributes of IT strategy such as cost-performance

levels and flexibility, that could positively promote the creation of new business strategies or better support of the existing business strategy. The final decision is the IT Governance meaning selection and use of mechanisms, like strategic alliances, for obtaining the required IT competencies.

Grembergen study (2004) reports that the internal IT domain must address three elements. The first element is an IT architecture which illustrates options that define the range of applications, hardware, software and communications configuration, and the data architecture that collectively defines the technical infrastructure. The second element is IT processes referring choices that define the work processes central to the operations of the IT infrastructure like, systems development and maintenance. The final element under this domain is IT skills meaning options relate to the acquisition, training, and development of the knowledge and capabilities of the individuals required to manage and operate the IT infrastructure effectively.

Strategic fit is, in the same way, relevant within the business domain. Thus, the business strategy should also take internal and external domain into consideration. The attributes are similar but focused on the business sector. According to Grembergen research (2004), there exist three attributes under the business strategy. The first attribute is business scope referring choices regarding the product-market offerings in the output market. The second option is distinctive competencies illustrating attributes that contribute to a competitive advantage. The final element is business governance meaning choices related to make-vs-buy decisions and inter-company relationships.

Based on the Grembergen research (2004), the last group inside business area is organizational infrastructure and processes containing three attributes. The first element is administrative architectures including factors such as roles, responsibilities, and authority. The second attribute is business processes meaning things that support and shape the firm's ability to execute business strategies. The final element is business skills containing expertise to execute a given strategy.



**Figure 11,** Strategic alignment model (Henderson & Venkatraman 1993).

#### Functional integration

In the functional integration dimension of the strategic alignment model, authors Henderson and Venkatraman (1993) propose two types of integration: strategic and operational integration. These integration types help to consider how choices made in the IT domain improve or threaten those made in the business area and vice versa (Grembergen 2004). Strategic integration is the link between business strategy and IT strategy reflecting the external components. Moreover, it is as important as IT, and for many companies, it has become a source of strategic advantage. The second dimension is the operational integration covering the internal domain and dealing with the link between organizational infrastructure and processes, as well as the IT infrastructure and process. This dimension highlights the importance of business requirements and expectations and internal consistency of IT's ability to deliver against it.

#### Dominant alignment perspectives

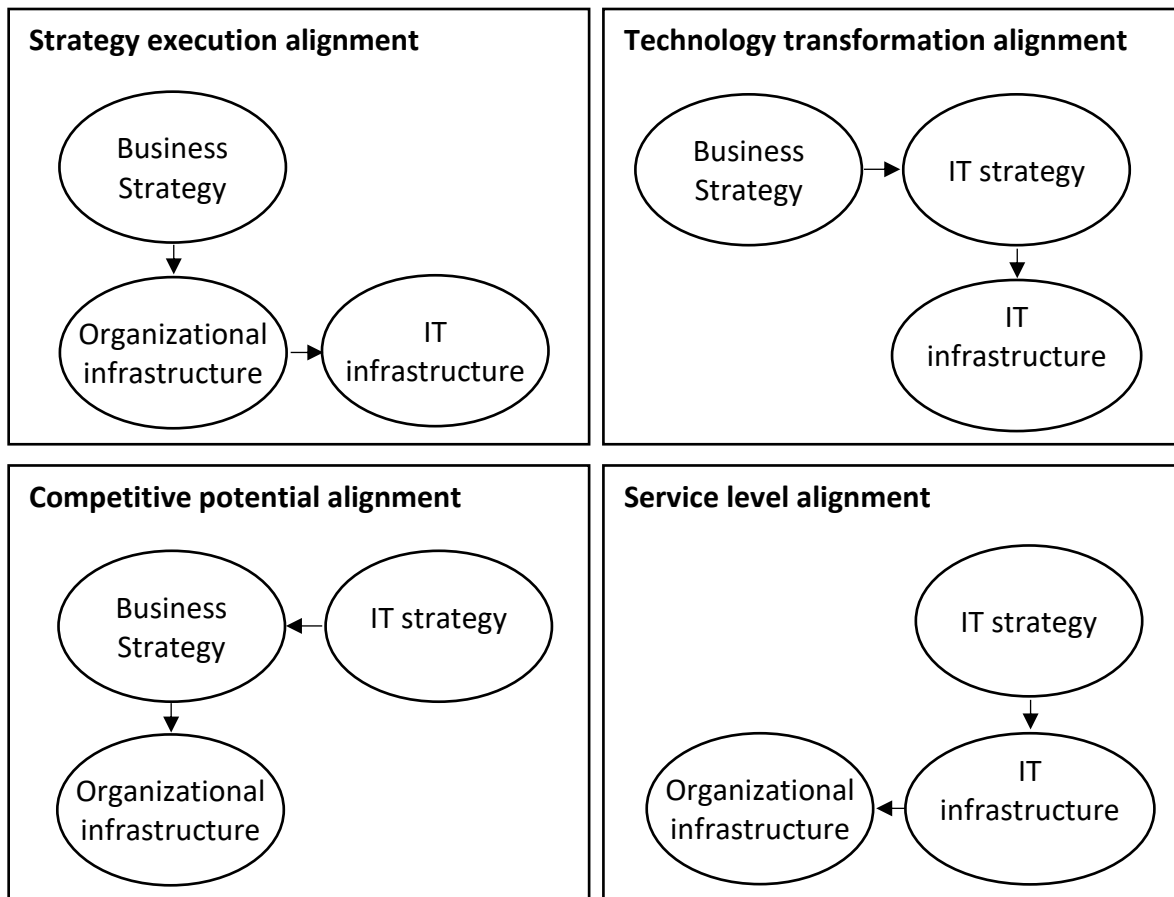
Henderson and Venkatraman (1993) have illustrated two cross-domain relationships where the driving force is the business strategy, and two relationships where IT strategy is the enabler, see

Figure 12. The first perspective is the strategy execution meaning the idea that a business strategy has been articulated and is the driver of both organizational design choices and the design IT infrastructure. Moreover, this perspective is apparently the most widely understood, as it is the classic, hierarchical view of strategic management (Henderson & Venkatraman 1993).

The second perspective is the technology transformation involving the assessment of implementing the chosen business strategy through relevant IT strategy and the articulation of the required IT infrastructure and process (Henderson & Venkatraman 1993). On the contrary to the strategy execution idea, this perspective is not constrained by the current organizational design. Instead, it is seeking to identify the best possible IT solution.

The next two cross-domain relationships arise when management is exploring how IT could enable new or improve business strategies with corresponding organizational implications (Henderson & Venkatraman 1993). The third perspective is the competitive potential that allows business strategy adaptation through emerging IT features. Unlike the previous point of views which keep a business strategy constant, this perspective enables business strategy adaptation via emerging IT capabilities.

The final perspective is the service level focusing on how to build a superior IT service organization (Henderson & Venkatraman 1993). This demand comprehension of the external dimensions of IT strategy with the corresponding internal design of the IT infrastructure and processes (Grembergen 2004).



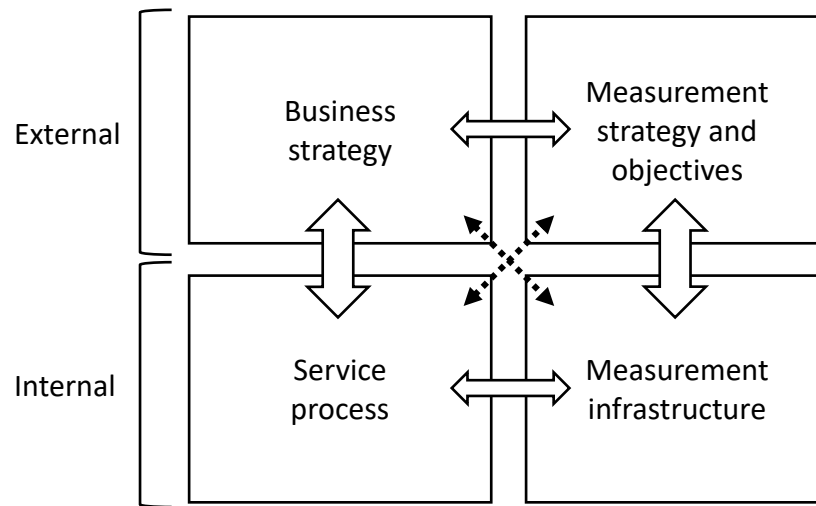
**Figure 12**, Strategic alignment domains (Henderson & Venkatraman 1993).

Adaptation for metrics purposes

In exploratory research section, slightly modified strategic alignment model is used. The same quadrants structure is applied, but the term IT is replaced with metrics. In this way, the model scope is possible to define more deeply to focus on the central theme of the research. Definition of IT is quite broad, and the metric term falls within the extent of this definition.

Moreover, organizational infrastructure is not the scope of the study. Therefore, the term is changed to service process which better adapts to the research needs. Organizational structure can be seen as a supreme concept of the service process. Thus, this modification reduces the scope of the model rather than change it. Hence, a variation of the model is not significant and does not alter the key features of the theorem. Strategic alignment model which is adapted to the metrics purposes is presented in Figure 13.



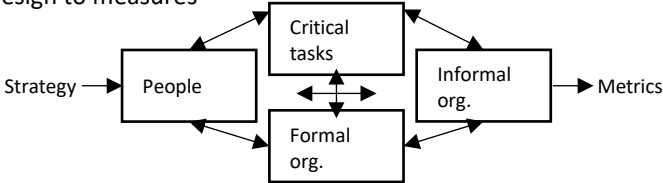
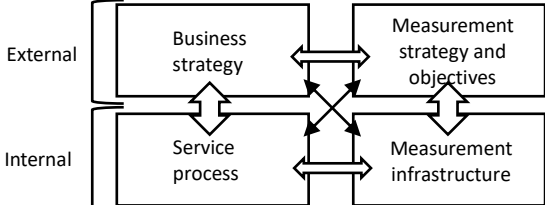
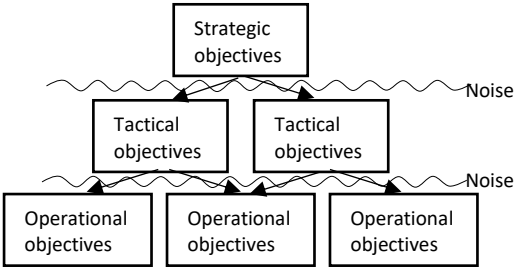
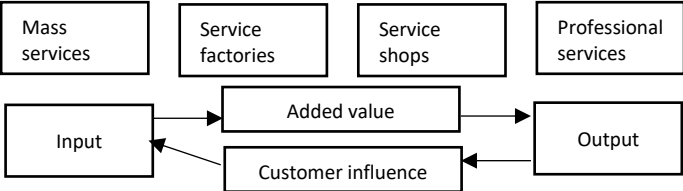


**Figure 13**, Modified strategic alignment model.

#### 4.3. Synthesis of theories

The step-by-step alignment process is presented in Table 4. Presented process combines previously discussed theories and concepts. It forms an organized process to identify organizations alignment issues. The first step of the process is to define the congruence of organization/unit. It is essential to understand the congruence between critical tasks, informal organization, formal organization and people. Thus, the strategy must be based on the inputs and the strategic objectives and measures need to be translated through the organization into the execution level. The second step analyze the strategy process of organization and outline the need for defining the company specific strategy alignment perspective. Using the perspective, company can identify in a high-level perspective specific strengths and weaknesses. The third step highlight the importance of detecting and understanding the alignment distortion of translation process. Managers have multiple strategies (see table 3) to hide and cover strategy tensions and misalignments. Therefore, it is crucial to understand the source of alignment distortion so that managers' strategies can be overcome, and misalignment can be eliminated. The fourth and the final step covers and evaluates the service processes. The process measurements are dependent on the type of the service process. Thus, different services types need distinctive operational measurements.

**Table 4, Step-by-Step alignment process.**

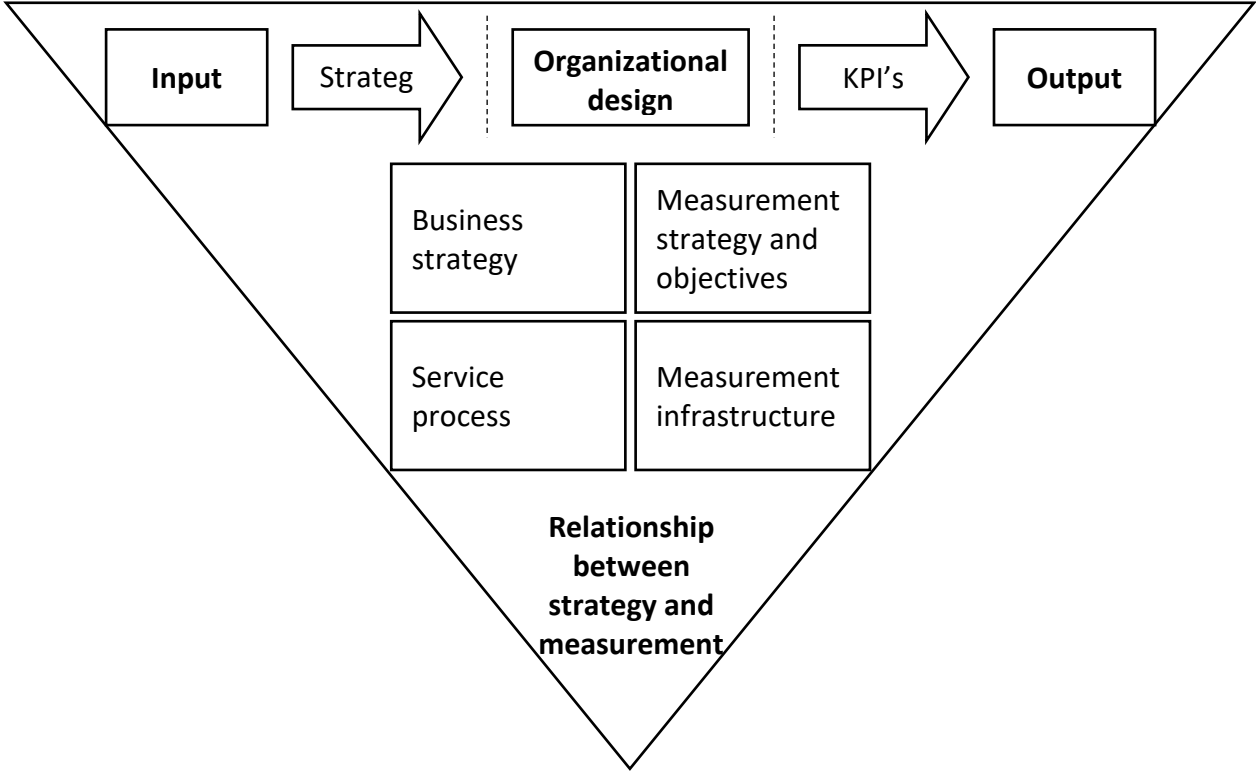
Step-by-Step alignment process	Example of alignment issues	
<p><b>1. Define the congruence of organization/unit</b> Understand the congruence between critical tasks, informal organization, formal organization and people. Form the strategy based on inputs and translate it through organizational design to measures</p> 	<p><b>Well functions</b></p> <p>Business unit is very cost-effective but there are no process meters set to track the performance development of the future</p>	<p><b>Incentives misalignment</b></p> <p>Employees incentives are based on the performance efficiency but the underlying business unit is focusing on the market growth</p>
<p><b>2. Analyze the strategic alignment</b> Analyze the strategy process of organization and define corresponding strategy alignment perspective (strategy execution, competitive potential, measurement transformation and service level). Based on the perspective understand related strengths and weaknesses</p> 	<p><b>Strategy execution alignment</b></p> <p>Strategy process is business driven and strategy measurements are defined in the end of the process. As a result, unclear strategy objectives are tracked using proxy measures without real benefit</p>	<p><b>Competitive potential alignment</b></p> <p>Business strategy is relying on too heavily to the single strategy meter. The meter is outdated over the time and no longer meets the needs of existent operating environment</p>
<p><b>3. Detect the aligning distortion of translation process</b> Identify the source(s) of the alignment distortion. Understand manager's strategy tensions and create process to handle it</p> 	<p><b>Translation</b></p> <p>Manager cannot translate strategy metric of efficiency to the operational objectives because he does not know the cause-and-effect relationship</p>	<p><b>Strategy tension</b></p> <p>Manager simply assumed and believed that the single operational measure is a reasonable indicator of strategy, even if he did not has proven the causal links</p>
<p><b>4. Define the service process</b> Define the type of the underlying service process. Different services types need distinctive measurements.</p> 	<p><b>Service type</b></p> <p>Manager try to swift mass service process towards service factory but continues to use operational measures specified to mass service process</p>	<p><b>Process of service</b></p> <p>Company think that using off-the-self measurement system like the Balanced Scorecard, it will automatically link operational measurements to the strategic objectives</p>

Considering the role and impact of performance measurement models and methods in alignment studies, Bititci et al. (2006) and Sousa & Voss (2008) advocate that contingency theory is a suitable basis for the research (McAdam et al. 2014). Contingency formulations were developed in the literature of organizational theory in the mid-1960s (Otley 1980). Performance measurement and particularly management control system research proposes that there are “generic contingency factors” or “organizational contingency factors” affecting performance measurement in both service and manufacturing operations (Jääskeläinen & Laihonon 2014). Including elements like social practices (Garengo & Bititci 2007), organizational strategy (Brignall 1997), organizational size (Garengo & Bititci 2007), and industry (Jansen 2004).

These factors in some manner relate to the organizational design elements of the congruence model. However, these factors are not as clear and precisely defined as the elements in the congruence model. More likely every researcher has chosen the factors that best suit for their purposes. Thus, it is possible to argue that the contingency theory is not as concrete as the congruence model. Nonetheless, there are some studies where these models have been considered to be similar at certain levels (Sillince 2005; Fry & Smith 1987) and, therefore, the congruence model is chosen to be used in the research section. Although it does not have such a strong academic support in the background, it still provides a detailed and concrete model that allows investigating the organization's performance and strategic alignment in an organized manner.

The congruence model illustrates well, on a high level, how strategy is defined (input) and finally implemented (organizational design) so that the company reaches the end product (output). However, the congruence model does not describe deeply how metric systems are integrated and defined into the organization. This dimension is better illustrated through the strategic alignment model, but the congruence model still provides a framework for studying alignment coherence. Therefore, to understand the relationship between measurements and strategy, the synthesis of these two models is used. The congruence model is applied to define and describe

the relationship between strategy and measurement and the results are presented through strategic alignment model, illustrated in Figure 14.



**Figure 14,** Synthetization of the congruence model and the strategic alignment model.

Next section describes the research design including discussion of strategy and methods used in this study. The section also describes the methods used for collecting and analyzing empirical data.

## 5. Research design

Research designs include plans and procedures that deal with decisions on broad assumptions about detailed data collection and analysis methods. Creswell's (2009) framework is used for structuring research design, see Figure 15. This framework consists of four components, and underlying factors are utilized in the empirical research. The first and overall decision involves which design should be used to study the topic. The second element is the worldview illustrating the assumptions that the researcher brings to the study. The third element is procedures of the study also known as strategies of research. The final element is research method meaning methods of data collection, analysis, and interpretation. Next, these elements are introduced in more detailed, and choices are justified.

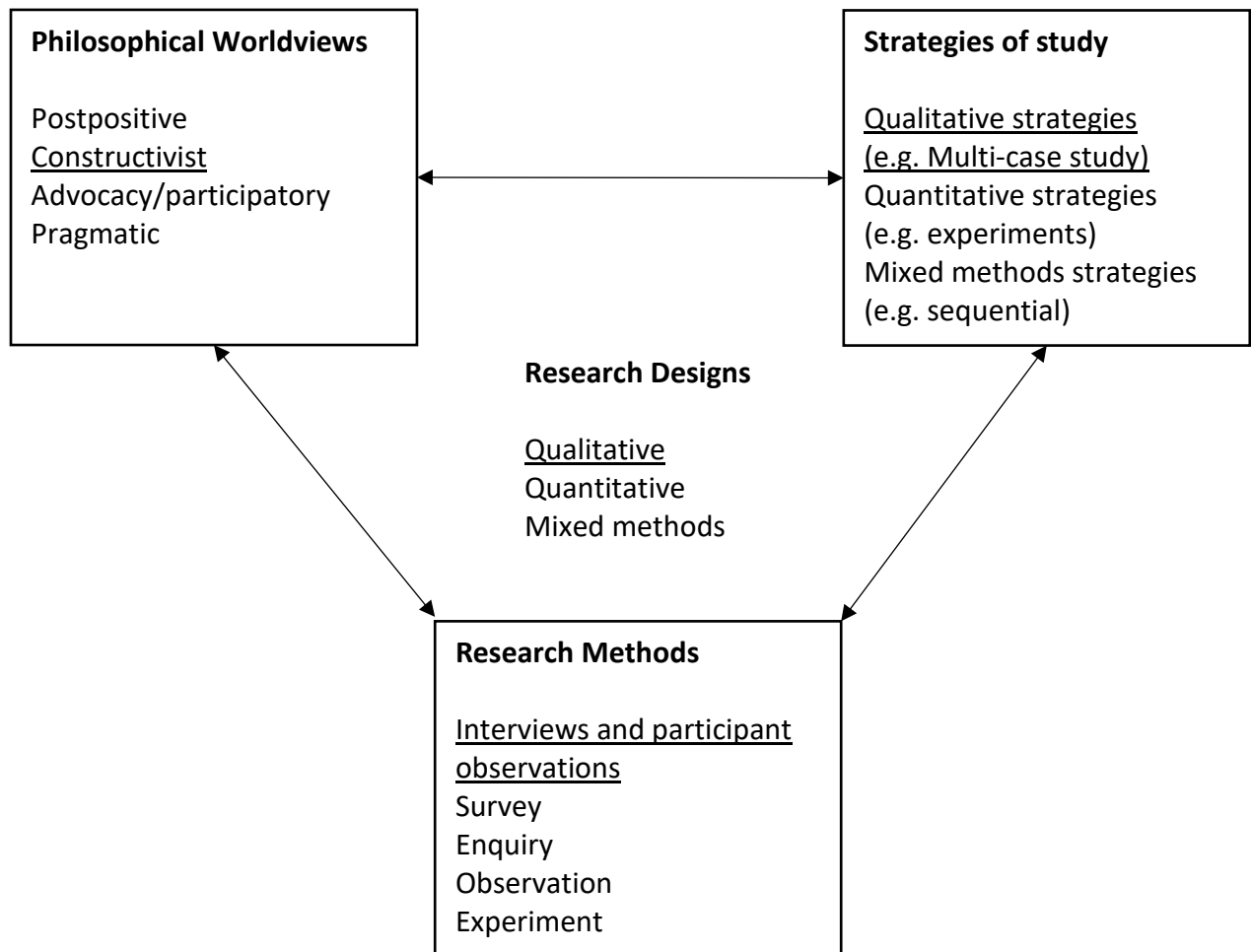


Figure 15, Applied research framework (Creswell 2009).

### Research design

In the academic research, there exist at least three types of research designs: qualitative, quantitative and mixed. Undoubtedly, these three approaches are not as separate as they may first appear (Creswell 2009). Qualitative and quantitative approaches should not be regarded as opposites; instead, they represent different ends of a continuum (Newman & Benz 1998). Therefore, a study tends to be more qualitative than quantitative or vice versa. The mixed method study is located in the center of this continuum because it contains both qualitative and quantitative approaches.

Qualitative research is a way of exploring and understanding the importance of people or groups ascribed to a social or human dilemma (Creswell 2009). The research process involves emerging questions and procedures, information that is usually gathered in the participant's setting, data analysis to inductively building from particular to general themes and a researcher who makes interpretations of the data. The final written article has a flexible structure (Flick 2009). Those who practice this degree support a way of exploring research that is respectful of an inductive style, focus on a single meaning and the importance of rendering the complexity of a situation (Creswell 2007).

Quantitative research is a procedure for testing scientific theories by examining the relationship among variables (Creswell 2009). Therefore, these variables can typically be measured by tools so that numbered data can be analyzed using statistical manners. The final written report includes a well-defined structure consisting of the introduction, literature, and theory, methods, results, and discussion (Creswell 2011). Like qualitative researchers, those who have participated in this form of study have assumptions about testing theories deductively, building protection against bias, supervising alternative explanations, and being able to generalize and replicate the observations.

Mixed methods research is an approach which combines or associates both qualitative and quantitative methods. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in research. It is, therefore, more

than just collecting and analyzing both kinds of data. It includes the use of both procedures at the same time so that the overall robustness of the research is greater than either qualitative or quantitative study (Creswell & Clark Plano 2007).

This study is conducted mainly using a qualitative design because the research design approach is problem-oriented and there is no intended to create or prove an existence of any theory but to illustrate the presence of the problem and provide tools to prevent and control it. Therefore, the research goal is to point out the problem and identify potential improvements areas. Moreover, the qualitative approach was chosen instead of quantitative or mixed study since the issue is complicated, and has seldom been studied qualitatively (Jääskeläinen & Laihonen 2014).

The disadvantages of qualitative research are that its scope is rather limited and its findings are not always widely generalizable. Researchers also need to use caution while using qualitative design to ensure that they do not themselves influence the information in a way that significantly modifies it and that they do not cause unnecessary personal bias to their interpretation of the findings (Creswell 2009).

#### Philosophical Worldviews

Although philosophical ideas remain largely hidden in research (Slife & Williams 1995) they still influence the practice of research and need to be identified (Creswell 2009). Therefore, Creswell's worldview idea is applied, which illustrates a core set of assumptions that guide action (Guba 1990). The types of assumptions held by individual researchers will often lead to embracing a qualitative, quantitative or mixed approach in their research. Thus, four different worldviews are considered: post-positivism, advocacy/participatory, pragmatism, and finally, research choice is justified.

The postpositivist assumptions have represented a traditional form of research, including elements such as determination, reductionism, empirical observation and measurement, and theory verification (Creswell 2009). According to Creswell, these assumptions are more related to quantitative research than qualitative research. Therefore, this worldview is rejected.

The second paradigm is advocacy/participatory meaning that research needs to be associated with politics and a political agenda. Thus, the research includes an action plan for reform that may change the lives of the participants, the organizations in which people work or live, and the researcher's life. This worldview is typically seen with qualitative research, but it can be a foundation for quantitative research as well including elements such as political, empowerment issue-oriented, collaboration, and change-oriented (Creswell 2009). This worldview is closer to the study of social sciences than to the business technic research that this study represents. Thus, this paradigm is declined.

The third worldview is pragmatism judging a qualitative evaluation of the degree to which it provides practical and usable answers to focused questions (Given 2008). Not all issues are theory based, and there is quite concrete and practical question where the pragmatism worldview can be applied (Patton 2002). As a philosophically this worldview is used for mixed methods studies including elements such as consequences of actions, problem-centered, pluralistic, real-world practice-oriented (Creswell 2009). Because the pragmatic worldview is not the building over the foundation of historical theory, it is not best paradigm for the purpose of this study. Albeit, it is still providing an excellent perspective due to the problem-oriented view and practical working methods.

Therefore, the best for research purposes and the final option is constructivism which prohibits the presence of an external objective reality independent of an individual from which knowledge may be collected or gained (Given 2008). Rather, each constructs knowledge and his or her experience through social interaction. It is typically seen as an approach to qualitative research and includes elements such as understanding, multiple participant meanings, social and historical construction and theory generation (Creswell 2009). This worldview provides the closest hit regarding this empirical research. Although, the intention of this study is not to produce a new theory or to prove the validity of the theory. Hence, the empirical research is conducted using the pragmatic approach and based on a constructive worldview.



### Strategies of study

Strategies of study are types of qualitative, quantitative, and mixed methods designs that contribute specific direction for procedures in a research design (Creswell 2009). The qualitative research design is selected to answer the research question. Hence, the best research strategy needs to be chosen under qualitative approaches. Alternative strategies are, for example, narrative research, phenomenology, ethnographies, grounded theory and case study. Due to nature of research question, the case study approach is selected. The case study is a research strategy in which a researcher deeply examines an event, process activity, program, or one or more individuals (Creswell 2009). Cases are limited by time and activity, and researchers collect detailed information through various data gathering procedures over a sustained period (Stake 1995).

In summary, the qualitative case study strategy is chosen to explore research gap. Case studies are the optimum strategy for studying phenomena in real-life contexts (Yin 2008). Moreover, case studies are an excellent way to explore research questions starting with “How” and “Why.” These questions address causal relationships and are explanatory by their nature. Cases and, for example, interviews make it possible to study these relationships. The qualitative methods are used to understand why or why not these relationships retain. Therefore, the qualitative case study is a favorable choice when exploring alignment issue between different hierarchy levels.

A comparative comparison between the cases is conducted to enrich the study. The underlying goal of the comparative case study is to search for similarity and variation between the case (companies) that are the objects of comparison (Given 2008). The comparison improves the reliability of the study because the same phenomenon can be noticed in a different environment. Comparative analysis is a normal task within case study research. By using multiple cases, it helps guard against observer bias and extend augment external validity (Voss et al. 2002). On the other hand, more resource is needed and research scope is less depth per case compared to single the case study.

## Research methods

The final major element of the framework is the specific research methods referring to the forms of data collection, analysis, and interpretation (Creswell 2009). Considering the nature of the study, the most appropriate approaches are the qualitative methods such as emerging methods, open-ended questions, interviews, themes, and patterns interpretation. Under these options and considering the research design, interviews and focus group sessions combined with participant observation methods are preferred to conduct the empirical research.

To deepen the understanding of the research question, experts of different companies needed to be interviewed. According to Flick (2009) and Meuser & Nagel (2002), expert interviews are very close to semi-structured protocol. Therefore, several semi-structured interviews were conducted where open-ended questions were asked in which the interviewee was allowed to talk openly about a topic, largely without the use of specific questions. Moreover, semi-structured interviews have attracted large interest and are widely used (Flick 2009). This interest is related to expectations that viewpoints of people interviewed are more likely to be expressed in an openly designed interview than in a standardized interview or questionnaire. However, the main challenge of the semi-structured interview is how far the interviewer can continue the procedure without losing credibility for the interviewee and to deal with irritations that may arise from confrontation (Flick 2009).

In addition, focus group method is applied to gather qualitative data. According to Morgan, focus groups are a form of a qualitative interview method that uses a researcher-led group discussion to produce information (Given 2008). Since the mid-1980s, after the reintroduction to social science research, focus groups have become a popular method, as in the case of individual interviews, they can be adapted in a variety of ways to suit a broad range of purposes. Like in interviews, focus groups laid the stress on the interactive aspect of data collection (Flick 2009). The main point of the focus groups is the explicit use of a group of interaction to create information and insights that would be less accessible without the interaction observed in a group (Morgan 1996).

In focus group sessions, qualitative data was gathered through participant observation method. According to Waddington, participant observation involves social interaction between the researcher and informants and the idea is to allow the observer to study first-hand experience and behavior of subjects in particular situations (Cassell & Symon 2004). The extent to which observers are involved may vary from project to project. Researcher Burgess (1984) discusses four possible research identities: the complete participant, the participant-as-observer, the observer-as-participant and the complete observer (Burgess 1984). Considering the nature of this research, the best possible research identity is participant-as-observer. So, research data was gathered in focus group sessions by applying participant observer technique where the decided research identity was participant-as-observer.

Observation enables researchers to understand much more about what is happening in complex real world situations than they can ever detect simply by asking questions, despite how probing the questions are (Wilkinson & Birmingham 2003). The main concern is the potential bias of the researcher as an active participant (Tellis 1997). Meaning that investigator's actions may affect the outcome of the observation. Moreover, the researcher must understand how his/her ethnicity, sexuality, class, gender, and theoretical approach may affect observation, analysis, and interpretation (Kawulich 2005).

### 5.1. Case selection

In a case research, the study is conducted and further justified through cases which are representing the research material. Therefore, the case selection or sampling is a very crucial step of the research process (Flick 2009). Moreover, according to author Bernard Ebbinghaus, case selection is one of the most critical problems in comparative case research but often overlooked issue (Ebbinghaus 2005).

Researchers have presented multiple case sampling strategies such as theoretical, statistical and purposive sampling. Theoretical sampling developed by Glaser and Strauss (1967) is mainly based on gradual strategies of sampling. Decisions about selecting and choosing together empirical data are made in the process of collecting and evaluating the data (Flick 2009). It is a data collection

method for producing theory, by which a researcher collects, codes, and analyzes information and decides what data to collect next and where to find it to develop a theory as it appears (Glaser & Strauss 1967). On the other hand, using statistical sampling researchers intend to conclude the entire population after conducting a study on a sample taken from the same population. The final strategy is purposive sampling. Researcher Patton (2002) listed multiple options that can be utilized under this strategy.

- Purposively integrate extreme and deviant cases,
- Select particularly typical cases,
- Strive for maximum variation in the sample,
- Select cases according to the intensity of interesting features, processes, or experiences,
- Favor critical cases,
- Select politically important or sensitive cases,
- Prefer cases that are the easiest to access under given conditions (Flick 2009).

Taking into consideration research needs, the most suitable case selection method is purposive sampling strategy. Cases are selected to illustrate problem statement but without being extreme examples. Thus, particularly typical cases are selected where the success and the failure are common for the average or the majority of the cases. The field of research is disclosed from inside and from its center. Moreover, the cases were also selected so that comparative analysis would be possible to implement. The cases should be similar enough to make the comparison useful and reasonable. Cases are also selected according to their maturity regarding research question.

## 5.2. Data collection

The service industry provides multiple options to review a broad range of business sectors. The case selection started with an examination of various service industries. Due to the internet and the technological revolution many service industries have experienced or are in the process of dramatic change of the external environment. Thus, cases are selected in sectors, which are experiencing this development. Consequently, purposive case selection strategy is applied, and typical cases are selected. To receive a wider picture, two diverse service sectors are selected.

Under these conditions, finance and hospitality industries are chosen. The finance sector has experienced and will continue to experience major changes like changing EU directive MiFID II in the future (Esma 2015). Therefore, especially in this category, the strategy implementation is an essential task, so the results of this study could be expected to attract the interest of the target company. Another field of business that will probably change in the future is hospitality sector. Consumers eating habits are changing, and new ways to consume food such as Wolt and Foodora are already transforming the industry. These sectors are very separate, which is intended to increase the reliability and validity of the study.

After industry selection, possibly finance companies are selected and finally contacted. Considering the organizational structure of the selected finance company, a similar business structure is sought from the hospitality sector. After finding possible candidates, they were contacted, and a single company is selected. In the finance case, three face-to-face interviews were held, and in the hospitality case, four participant observation sessions and two interviews were held. The reason why several interviewees in the hospitality case were based on the participant observation was that the company was just about to implement a new strategy, so it was reasonable to combine interviews into that process.

The interviewees presented different working roles of case companies. The goal was to interview at least three levels of employees, starting from the strategy development and ending to the customer interface. Therefore, the interviewees were working under titles such as chairman, business field manager, development manager of strategy, group controller and information specialist.

The interviews were held face-to-face, or by telephone and only one individual was interviewed at once. The participant observation method was applied by observing focus group sessions, and one session included each time same core participants. Interviews took from 75 minutes to 82 minutes and focus group sessions took around 1h and 45 minutes. The summary of the case

companies and the data collections methods is shown in Table 5. In addition, materials provided by the companies were also used.

**Table 5,** Data collected from case companies.

<b>Case industry</b>	<b>Interview method</b>	<b>Title of interviewees</b>	<b>Date</b>	<b>Duration</b>
Finance	Face-to-Face	Director	17.05.2017	1h 30min
	Face-to-face	Group controller	19.06.2017	1h 15min
	Face-to-face	Information Evangelist	21.06.2017	1h 22min
Hospitality	Participant observation (focus group)	Chairman, Business field manager and Development manager of strategy	03.05.2017	1h 45min
	Participant observation (Focus group)		10.05.2017	1h 45min
	Participant observation (Focus group)		16.05.2017	1h 45min
	Participant observation (Focus group)		24.05.2017	1h 45min
	Telephone	Development manager, strategy	10.10.2017	45min
	Face-to-face	Senior vice president	19.10.2017	45min

### 5.3. Research process

To answer the research question, case companies are analyzed through synthetization of two theories: a congruence model and a strategic alignment model. The congruence model provides a comprehensive description of the company's situation and the modified strategic alignment model focus more on the metrics side. These theories are deeply presented in theory section.

The congruence model provided an excellent structure for interviews. Using the theory, it was possible to walk through, together with interviewees, three parts of the model: key organizational inputs, key organizational components, and key organizational outputs. Thus, the interviewer was capable to ask open-ended questions but still keeping the interview under his guidance. Moreover, the model enabled to deal with different companies in an equal manner

and still allowing to slightly modify the interview content according to the background of interviewees.

Strategic alignment model provided a framework for comparing case companies based on their measurement alignment. The slightly modified model consists of four quadrants: business strategy, measurement strategy, service process, and measurement infrastructure. The model allowed a systematic analysis approach between case companies to better interpret the measurement differences. The interviewer did not introduce the model for interviewees during the interview process but based on interviews case companies are placed into the strategic alignment model.

#### Data analysis

The data analysis followed the interpretation of Radnor's method for analyzing qualitative research (Radnor 2001). In this approach, all interviews are taped, transcribed and coded. Moreover, notes are made and collated from the focus group sessions and synthesized with document analysis (McAdam et al. 2014). The collected information is added to the same set of existing information to form the overall picture. Second, modified open inductive coding approach is used, as suggested by Miles and Huberman (2014), where literature and empirical findings were paralleled, compared and contrasted using the initial conceptual model as a first building block. The initial conceptual theory was the congruence model, and by using it, information is collected to form case specific strategic alignment model. As proposed by Miles and Huberman (2014), each case is analyzed independently (Miles et al. 2014). After the analysis, cases are placed into the adapted strategic alignment model based on the result of congruence model.

In the findings section, data is presented in corresponding categories: case description, content, synthesis of findings and improvement propositions.

## 6. Findings

This section presents the results of the data analysis. Interview data is collected and analyzed through the congruence model. The congruence model provides concrete structure for analyzing organizational alignment. Findings of the congruence model are presented through modified strategic alignment model which focus on more deeply into the alignment challenge between strategy metrics and operational measurements.

The case A pointed out that in the strategy process, thinking about the strategy metrics should not be left for the last task. While strategic choices are evaluated, it is necessary to consider how these decisions can be measured to monitor the progress of the strategy. Thus, there must be a link between strategy and annual planning, and someone must be responsible for translating strategic measures into the operational level. This kind of misalignment is visible in the strategic alignment model. In contrast, the case B showed how measurements driven alignment can be an effective approach. In that case, measurement provides the basis for creating a business strategy, and it is not a given as in the case A. However, the challenge of the case B perspective is to handle the relationship between measurement strategy and measurement infrastructure.

The case A alignment approach is more common compared to the case B. The case A approach is the most common and widely understood approach as it corresponds to the classic, hierarchical view of strategic management. Alternatively, the case B approach may provide better alignment opportunities compared to the case A because the measurements are the catalyst for the alignment process and they are not left behind in the strategy process.

Regarding the structure of this chapter, first cases are presented more deeply focusing on strategy objectives, strategy process, and metrics structure. The second subchapter discusses the content of the findings concentrating on the observations which are illustrated through the congruence model. The third subchapter demonstrates the synthesis of findings which are presented via strategic alignment model and the final subchapter present improvement propositions.



## 6.1. Case descriptions

In this subsection, case companies are presented. The first case company is operating in a finance sector and the second case company is operating in a retail and service sector. Companies have in common an unusual corporate structure which is affecting their strategy process. Both case companies compound of independent regional cooperatives controlled by a central group providing support functions. Thus, the companies under investigation are the network of companies. This structure is reflecting into the strategy process and the establishment of metrics. Research in mind, the structure allows a unique way to identify company's interfaces to follow strategy alignment process.

### Case A: introduction

The first case company is a financial group that provides banking and insurance services based on a mutual group of companies owned by its customers. It started operations in the mid-2010s as a result of the merger, and it serves private customers, farmers, entrepreneurs, corporate customers, and organizations. Case company's products and services cover non-life, life, and pension insurance, as well as investment and saving services. They are also professionals in corporate risk management and welfare in the workplace.

The case company's network of regional companies consists of 20 regional mutual insurance. The company employs approximately 3,400 people, half of whom work in the regional companies and the number of owner-customers is nearly 1.6 million. In addition to general company and the regional companies, the group includes national companies such as life management, asset management, and real estate asset management.

The vision of the case A is to make the lives of customers more secure and healthy. Lifelong security means comprehensive, proactive services for their customers. Therefore, their business idea is to safeguard customers' everyday lives and success.

The case A has identified four forces that will affect its business environment. The first force is more intense and international competition. The second factor is the digitalization which will have a strong impact on the operational environment. The third element is pressure between sectors and networking. The final aspect is the demand for well-being services.

To respond these forces, the case company has developed a new strategy which states that traditional life insurance company is transforming towards a lifelong security firm. Moreover, the strategy includes four steps. The first step illustrates the company's aim to modernize its look more customer-oriented direction. The second factor state that company will continue growth by using its current customer in growth centers. The third action is to increase efficiency by standardizing processes. The final element promises to offer safer and healthier life.

#### Case A: Strategy process and metrics

The strategy process follows the cycle of three years. First, a group strategy is formed, and then regional companies make their strategies based on the group strategy. Regional executives and board of directors approve their strategies. Each regional company emphasizes its strengths in the strategy. It is very much within the regional company's own hands, how far and what extent it executes its strategy. The strategy function at the group-level is small. Thus, the group strategy is formed in cooperation with regional companies. Therefore, the case company's strategy process is more decentralized than centralized.

the case company has set several metrics to monitor the implementation of the strategy. Strategy metrics can be categorized into five groups according to their impact areas. The first metric group is focusing on the customer satisfaction, and the main metrics is Net Promoter Score (NPS). The second group is concentrating on the customer base. The main metric of this group is the number of preferred customers. The third group is the sales-related measures including various metrics for monitoring sales of the main products. The next metric collection is focusing on efficiency, and the main measure calculates expenses without depreciation. The final strategy metric group spotlights human resources. The central reference metric is the great place to work (GPTW) trust index.

Strategy measures are supposed to be closely linked to strategic choices. The idea is that a top-level strategy meters are fixed throughout the strategy period. Strategy metrics try to follow annual development path to achieve the strategic goals. The case company uses strategy projects to achieve strategy targets. The projects also have specific metric systems. Strategy metrics are implemented in the group's strategy functions, and these metrics are reported quarterly to directors. Annual metrics are monitoring operations over a shorter period and are implemented jointly in the financial and information management units. Underneath this layer are measures of the different functions. Each business unit is responsible for their measures. The aim is that the strategy metrics would guide the annual measures and they would guide the regional company and the unit-level metrics. Strategy metrics are showed to employees through the intranet to advise the work in the right direction.

Before the merger, the case company had used an applied Balanced Scorecard. After the merger, similar clear measurement system has not been implemented. Due to the merger, the old system would have been too difficult to re-enable. Existing meters are built using the system monitoring platform (QlikView).

#### Case B: introduction

The second case company is also a network of companies operating in the retail and service sector. It has more than 1,600 outlets. The case group consists of regional cooperatives. Cooperatives are enterprises operating in accordance with the principles of cooperative activities. Their owners are also their customers. The case group contains twenty independent regional cooperatives and main corporation.

The main corporation, which is owned by the cooperatives, operates as the central company for the cooperatives and provides them with procurement, expert and support services. It is also responsible for the strategic guidance of group and the development of the various chains. The case company's cooperative activities are business operations that emphasize both financial profitability and social responsibility. The 20 regional cooperatives of the case company are

independently responsible for their operations of activities. In 2016, the group employed more than 40,000 professionals in various sectors. Since the target firm consists of several business segments, this research focuses on the hospitality business covering around 7% of total revenue.

The purpose of case group's operations is to provide co-op members with competitive services and benefits in a profitable manner. The case company's key strategic targets include improving profitability and increasing customer satisfaction. The company sees that to respond future challenges, it requires them to be more competitive, cost-effective, competent, and responsible.

However, they think that companies cannot be further developed just by cutting costs or enhancing operational efficiency. Because consumers' requirements are increasing, they must provide new services and find new ways to use those services. Therefore, the case company is strongly investing in the expansion of innovative digital and other customer-focused service solutions while also cooperating with growth companies and start-ups.

#### Case B: Strategy process and metrics

The case B, strategy process begins by defining a group strategy. The Group strategy outlines at a high level the directions of action. Within its boundaries, each regional-division will form its own strategy. The strategy of divisions follows the framework of group strategy. Alongside each business divisions also construct own strategies. This competitive strategy defines more precisely the objectives and goals of the business. Previously, the target company has had more static strategy cycle but today it is more flexible. The competition strategy is defined for four years ahead and group and division strategies are defined three to five years' horizon, light examination and revisiting takes place annually.

The case B emphasizes that strategy should not be changed too often because the large ship cannot be easily turned around. Receiving the strategy message and content can easily take a year and the results cannot be expected to appear until after two years.

The general strategy process starts from forming an understanding of the operating environment. The view must be elastic enough to be influenced on the basis of the conversation

and collaboration. According to case B, strategy metric is always needed to support the strategy decision. Of course, there may be such strategic choices that are more difficult to apply the metric. Measuring problems often come up when trying to produce something in a new way. It is very hard to set metrics when the outcome is unknown.

The case B outlines that in their business, return on investment (ROI) is one of the most important strategy measurement. Therefore, they have aligned it with different organization levels. For example, in their KPI metrics, ROI compounds from sales, profitability and tied equity. By improving these lower-level metrics, they will improve the return on investment.

The target company has a Balanced Scorecard type measurement system. For example, the company sets industry-specific scorecards that are partially operator-specific. Every regional co-operation has changed the measurement system to fit specific business environment. However, the business division drives and ponders the consistency and commensurable of certain indicators and measurements.

## 6.2. Content

In this section, findings are presented according to the congruence model. The model is divided into three categories: input, organizational design, and output. The inputs are the material that the organization has to work with. The organizational design reflects components what makes up an organization. The outputs are what the organization produces, how it performs and how effective it is.

### Input

The case company A has experienced major changes during the last year. Organization structure has undergone major development cycles including merger and demerger activities. These activities have taken a lot of time and resources. Moreover, operational and business environments are expected to be subject to multiple upheavals. For example, people's travel habits are going to evolve, which affect the insurance business. Car ownership is not anymore, the only choice to use private vehicles. Other service options such as pay-per-use and monthly

fees have come alongside. On the other hand, the case company B have maintained current organizational structure for a longer time. They have also experienced changes in their operational environment. The case B stressed that customers would like to eat more easily and the popularity of fine dining will decrease. Both cases have mainly service oriented work, so the prime organizational resource is employees. Neither of companies complained about the shortage of labor. According to case companies, the workforce can be obtained as needed.

Case company A mentioned that due to dynamically changing business environment, long-lasting strategy period could easily make strategic objectives outdated. They have discussed shortening the strategy period or changing it to rolling basis. The duration of the current strategy period is three years. As a result, in the middle of the current strategy period, a few strategic objectives have become obsolete. Moreover, Case A has noticed that the current strategy process is not very agile due to conversation and cooperation with regional companies. This collaboration often leads to the strategy process, where strategy meters are designed at the end of the process and in a hurry, so they are not thoughtful and might not guide the business in the right direction. Moreover, strategy metrics must also be brought to the operational level, which does not exist at present. The case A mentioned, that they have considered dividing strategy meters into smaller metrics. For example, the company has meters that measure customer satisfaction and also the number of customers. These measurements will continue at the business unit level to detect the development of different business functions. However, the case A reported that they had not considered the relationship between the various strategy meters, but they have realized that part of the meters may conflict with each other. They do not address this as a major problem. A bigger challenge is seen if the actions are conflicting with each other (mutually exclusive). Thus, according to case A, builders who are constructing and using metrics must be aware of the contradictions in the measures. Finally, the case A reported as affairs stand no-one is superintending the process where strategy objectives are transformed into the operational measurements and vice versa. Enabling separation of targets between strategy metrics, annual measures and operation measurements.

The case B has been under the auspices of the current director for six years. The intention has been to fix and improve things first in a near distance. Then, the correction radius has been increased. Lastly, the focus has been on promoting the market interface.

The target company thinks that their main business is processing, where the additional value is created by moving raw material towards a known goal while passing it through a sequence of actions. As production takes place in decentralized units, leadership must take place from the front.

The case B emphasize that the digitalization will affect consumer behavior. For example, fine-dining will become more limitless and youth wants easier and convenience services. This has an impact on the brand hierarchy, possibly adding intermediate layers between the customer and manufacturer. The business will be divided into two directions, easy and fast together with experiential direction. Case B report that these changes are seen simultaneously both as a threat and as an opportunity.

#### Organizational design

As mentioned earlier, both cases companies operate as the cooperative manner and consist of regional companies. Companies believe this structure to create them a better competitive position. However, as part of the structure, the number of administrative tasks increases such as board and executive meetings and decision-making can sometimes take a long time which can reflect into effectiveness ratios.

Both cases have mainly service oriented work, so the prime organizational resource is employees. In the case A, sales happen primarily through representatives. Representatives are self-employed entrepreneurs who sell case company products and operate on a commission-based. Representatives are employed by regional companies. All regional companies have the same products. In turn, case B sales units can be divided into two groups based on chain control. The first group called as chain-management are tightly under chain control and the second group entrepreneurs receive less chain-control than the first group.

The case A service processes have a high level of labor intensity and at the same time a large variety of products and a high degree of customer interaction. These services can be divided into two different groups based on a degree of variation. Both service groups have relatively high throughput time, but the extent of variation separates processes. Therefore, the case A mainly have mass and professional services, illustrated in Figure 16. Many traditional financial services can be located in mass service category such commercial banking and several insurance processes. Characteristics of mass service are a relatively high process time and low variation. According to the case A, they are trying to improve the service process efficiency by reducing labor intensity and increasing automation level. Therefore, the importance of mass services will be decreased during the time, as it can be replaced with service factories. Service factories have a low degree of variation and also a low relative throughput time.

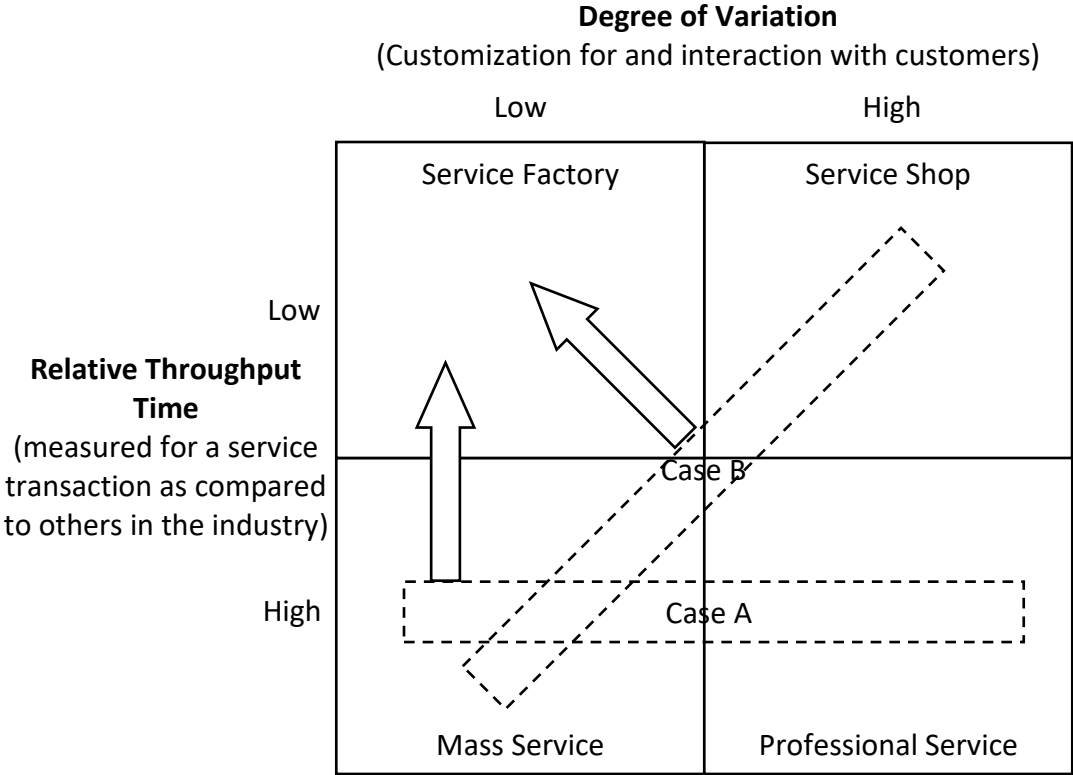
In addition, the case A has multiple professional services like insurance and asset management advice. These processes serve relatively few customers per day, and the degree of labor intensity and customization is high. Moreover, these processes have a significant level of service variation leading to a relatively high throughput time. For instance, the professional service process may take many weeks, while usually service shop process duration is counted in minutes. On the other hand, the customer relationships are longer, sometimes continuous, compared to service shops. However, according to case A these processes also have a similar tendency to move towards a faster service process, in Figure 16 this shift is presented using block arrows.

The case B service processes have moderate to high customer demand per day, and the labor demand varied based on the business unit. Therefore, like in the case A, the case B services can be divided into two different groups. The case B mainly have shop and mass services, illustrated in Figure 16. Service shops have a large extent of plant and equipment relative to labor and their offer more interaction and customization compared to mass services. Moreover, service shops labor intensity is higher, and employees needed skill set is more demanding than in service



factories. Albeit, personnel knowledge is not as strong than in professional services, where the specialization is at the extreme level.

According to case B, there exist a clear movement towards service factories. The reasoning behind this is that services will decrease the labor intensity and they will also cut personnel cost by introducing other technological systems due to digitalization. In the future, the case B consider seriously introducing services that have limited products range with cut-price output. Service factories have low labor intensity and low client interaction and customization level. As the name implies, it provides services in a factory manner, trying to achieve the best possible efficiency and performance. In other words, service factories have highly standardized services which are linked to the streamlined service process.



**Figure 16,** Service matrix and case studies.

### 6.3. Synthesis of findings

Table 6 presents the summary of findings. Findings are grouped according to the synthetization of literature review and Table follows the step-by-step alignment process. The first step illustrates the case specific congruence of organization. The case A pointed out that the operating environment is changing rapidly so the organization must adapt those changes quickly and therefore creating and sharing common understating of surroundings is essential. Hence, easily can happen misalignment between actions and targets if common consensus is not clear. On the other hand, the case B emphasized the need for translating strategic goals into the execution level. Employees routines must change to achieve actual realization of strategic objectives. Moreover, they have experienced some difficulties when the measures are tried to adapt to the new businesses. Traditional measures might not work because the situation is not typical. The situation creates the misalignment between ordinal measures and the objectives of the new businesses.

The second step analyzes the strategic alignment. Using the findings from the congruence model, case companies are placed into the strategic alignment model (Figure 17). In the model point of view, the case A can be seen as a business strategy driven while the case B is more a measurement strategy and objective driven. The name of the case A alignment is strategy execution and the name of the case B alignment is a competitive potential.

The third step detects the aligning distortion of translation process. The case A does not have a structured translation process in place. Therefore, operational measures are not based on the causal models and the company cannot understand which elements have the most impact on the development of the strategy meter. Similarly, the case B does not have structured translation process but they have still aligned strategy measures in qualitative manner. The final step defines the service process. Like described earlier, both case services are moving towards the mass service. Both cases have understood that service type must influence to the operational measures and common measurement strategy and system would be beneficial.

**Table 6, Summary of findings according to step-by-step alignment process.**

<b>Findings: Step-by-Step Alignment Process</b>	
<b>Casa A</b>	<b>Case B</b>
<b>1. Define the congruence of organization or unit</b>	
<p>“Financial and insurance sectors are the last industries that still operate in offline mode.”</p> <p>“Digital destruction is increasingly affecting the models of insurance business.”</p> <p>“Experience has shown that to get strategic measurements in action, they must be connected to the company wide communication. It will create a common awareness and commitment to measurement goals.”</p>	<p>“Strategic measurements must be aligned through the organization. Different management levels need to understand what is required of them.”</p> <p>“The strategy must influence to the employee's routines like incentive systems.”</p> <p>“In the strategy process, measuring problems often come up when trying to do something in a new way and adapting blue ocean strategy”</p>
<b>2. Analyze the strategic alignment</b>	
<p>“Strategy must define what kind of measures is needed. For example, the service management strategy requires customer-related indicators, while the cost-effectiveness strategy requires measuring the company's own operations.”</p> <p>“Fixed strategy period might not be any more reasonable as the cyclicity of the operating environment has increased.”</p> <p>“The current strategy process is not agile, leading to the strategy process where the strategic measurements are defined at the end of the process and in a hurry, so they are not really thoughtful and does not guide the business in the right direction.”</p>	<p>“The strategy process has been more static in the past, but in the future, it must be more agile and open. The change programs are used to move the strategy forward. They must be as concrete as possible to achieve the targets.”</p> <p>“The business strategy must be based on analytics and measurements that provide the basis for the justification.”</p> <p>“The importance of strategy cannot be emphasized, but operational leadership takes place from the front.”</p>
<b>3. Detect the aligning distortion of translation process</b>	
<p>“The challenge at the moment is that nobody will monitor at the group level how the strategy objectives are implemented at the operational level as well as how the operational level indicators affect in the strategy level.”</p> <p>“Before demerging Balanced Scorecard was in use, currently there does not exist similar clear measurement system.”</p> <p>“The fixed strategic indicators may not be valid after a long strategy period.”</p>	<p>“Each regional cooperative has its own measurement system. There is no uniform approach, it could be more coordinated. However, strategy measures of the new strategy have been translated into operational level”</p> <p>“The group strategy involves a Balanced Scorecard type measurement system. At the division level, each operator has his own measurement system.”</p> <p>“Group and division strategies are defined three to five years’ horizon, light examination and revisiting takes place annually.”</p>
<b>4. Define the service process</b>	
<p>“Services process and its maturity defines what kind of measures should be used.”</p> <p>“All meters cannot be implemented, so the construction of the measurement system is controlled by availability of data.”</p> <p>“All strategic measurements are at the numerical form and economic data is well available; the development and implementation of qualitative indicators are often left in the background.”</p>	<p>“In the service business, efficiency of flow is a very important component.”</p> <p>“Group- and co-op-level measurements may be overlapping.”</p> <p>“It's good to have a common measurement system, but it has to consider the requirements of different businesses”</p>

### Strategy execution

The case A has adapted strategic execution alignment, see Figure 17 (left side). Their business strategy influence strongly into the service process and the measurement infrastructure provides important metrics for monitoring purposes, and finally, measurement strategy and objectives are achieved. This perspective is anchored on the notion that a business strategy has been articulated and is the driver of all other components. This alignment form is the most common and widely understood approach as it corresponds to the classic, hierarchical view of strategic management.

However, there is an only weak link between measurements objectives and business strategy meaning that the feedback loop back to the business strategy is limited. Therefore, some misalignment between measurements and strategy is visible. The case company has not actively transformed strategic objectives into the operational measurements. Therefore, causal links between strategy and measure have been distorted over the time. During the interviews, a few interviewees specified that they are aware of this challenge. One reason for this problem was mentioned as a challenging organization structure that makes difficult to create a coherent measurement system since case organization is not responsible for measurements systems of regional companies. Before the merger, the case A had used an applied Balanced Scorecard, but after the merger, they have not implemented new measurement system. It appears as a lack of systematic monitoring. The case A reported that at the moment, the introduction of the new measurement system might not be justified because the whole strategy process should be rebuilt to gain the desired benefits. Moreover, the group structure of case organization will lead to the fact that business strategy and measurements are quite independent.

The Case A has also noticed the tension between long and short-term objectives. Usually, strategic objectives can be little offhand and are placed in two to three-year period which makes difficult to obtain direct metrics. Therefore, managers tended to use short-term measures as proxies for their long-term goals, despite the lack of validity and consequences of the cause-and-effect relationship between short-term measures and long-term strategic objectives.

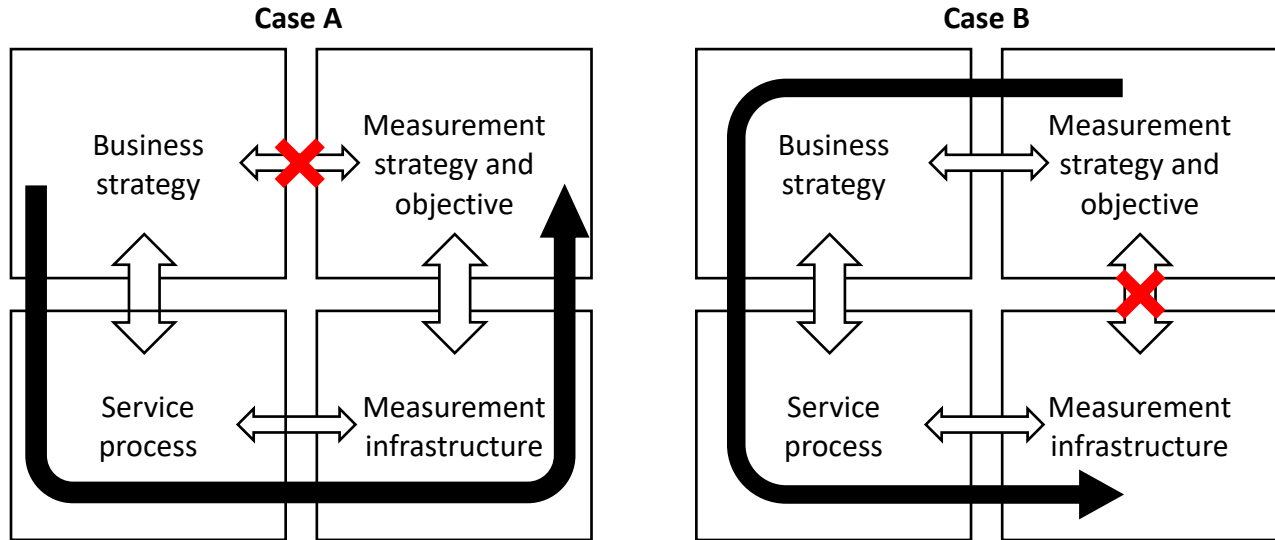
It is important to understand the specific role of management to make this perspective succeed. The top-management should play the role of the strategy formulator to articulate business choices while measurements should have strategy implementer and monitoring roles. Therefore, it is essential that measurement infrastructure can provide necessary measurements to track strategy execution. Moreover, measurement targets must monitor changes what happens in business objectives, so they can dynamically adjust accordingly.

#### Competitive potential

The case B alignment perspective is not as clear than the case A. It uses strategic measurements to guideline business strategy and to direct service process. Thus, the case B exploit competitive potential alignment perspective, see Figure 17 (right side). Unlike the case A, that considers business strategy as given, this approach allows the adaptation of business strategy through measurement strategy. Measurement infrastructure provides capabilities to execute measurement strategy. The case B has created metric system that allows building guidelines for the business strategy and the service process. These measurements are catalyst for the alignment process.

On the other hand, using this alignment approach, the case B has weakened the link between measurements strategy and measurement infrastructure. This limited link is apparent from implementing and using many unnecessary metrics. In a way, the measurement infrastructure has adapted to the situation by providing several meters that are not finally needed. As a result, a somewhat complex measurement environment has emerged. Therefore, new measures that drive the latest strategy may remain obscured by the old meters.

The specific role of top management to make this approach succeed is to select correct and guiding measurements to control and articulated business strategy and service process. The role of measurement strategy, in contrast, is to be catalyst providing and identifying potential measures to assist business managers to understand potential opportunities and threats from a measurement perspective.



**Figure 17,** Adapted strategic alignment model for case A and B.

#### 6.4. Improvement propositions

In this section, possible improvement propositions are presented. Propositions are based on previous findings and try to enclose detected problems. These propositions are case specific and cannot be directly generalized to other companies. However, they provide a basis for what kind of improvements can be made and in that way hopefully help other businesses.

##### Case A: More weight to strategy metrics

In the case A, strategic metrics should have more weight in the strategy development process. Every strategy target should have carefully considered metric and a plan how it is going to be monitored. The progress of strategy execution must be able to monitor in order to achieve strategic targets. Therefore, defining strategy metrics cannot be the last task of the strategy development process. Someone should have responsibility to align strategic objects over the organization. Especially because of the challenging nature of the company's organizational structure it is essential to have effectively aligned strategic objectives. Responsibility is needed to oversee the alignment process. Well-oiled strategy execution requires communicating corporate strategy and ensuring that enterprise-level plans are translated into the plans of the various units and departments. Moreover, it requires executing strategic initiatives to deliver on

the grand plan together with aligning employees' competency, development plans, and their personal goals and incentives, with strategic objectives. In this manner is possible to improve and even remove the disconnection between strategy formulation and strategy execution. It is important that employees at all levels understand the company's strategy and its meaning. If the employees who are closest to customers and who operate processes that create value are unaware of the strategy, they certainly cannot help the organization implement it effectively.

Strategic and annual planning should not diverge from one another. The group report must follow a line of strategic metrics although it has a more frequent occurrence cycle. Otherwise, group report will become more controllable and directional compared to strategic metrics, which are only monitored quarterly. Finally, it is worthy of serious consideration about applying rolling based strategy process. It could positively influence for acting and reacting strategic measurement changes of external environment.

#### Case B: Consolidation of operational metrics

In the case B, data warehouse should be reviewed and unnecessary measures should be removed. The data warehouse contains dozens of unnecessary and old metrics that should be removed. These old metrics have sometimes been relevant to the strategy, but have since become obsolete. When data warehouse is full of invalid and useless measures, it may distort the development of the strategy. Therefore, the repository needs to be organized to allow the needed attention for new measurements. Strategic measures should be continuously revisited to tackle business environment changes. When a good metric or metrics have been found, it is necessary to rely on them, but still remembering that time to time these measurements needed to be challenged and possibly switch or modify. The environment and goals are changing as well as the meters must alter together with them.

In the discussion and conclusion section, the main deductions are presented including demonstration how these findings link to the theory and practice. Finally, is illustrated the research limitations and the overview of the future study.

## 7. Discussion and conclusion

The service industry has experienced major changes during the last twenty years. The development of technology such as IT-systems and the internet-platforms has enabled the digital revolution. The digitalization has facilitated the use of different tools and methods which have not been available in the analog time. These digital tools have enabled measuring and monitoring service processes in more advanced and rigorous manner.

The dynamic changes in the organization's environment, in the both public and private sectors, requires constant modifications to the strategy, and therefore, operation and performance measures need to be evolved to reflect these changes. Nevertheless, only a few organizations have systematic processes in place to manage the development of measurement system to ensure that it continues to reflect the strategy and objectives. Thus, the aim of this research was to understand, how strategic objectives and operational metrics link and connect to each other.

### Service process measurement

During the last decade, the importance and significance of the service industry has been widely recognized. The line of academic reasoning has far too long been dominated by the consistency of manufacturing operations. One reason for this might be that the service processes are more complicate to measure and monitor than manufacturing processes. The service industry deals with a much greater variance through customers, activities, and deals compared to the process industry. Service processes are typically more labor intensive and customizable compared to the manufacturing industry. People, the core unit of productivity, bring unpredictable differences in skills, motivation, as well as experience to the service process. Hence, the service process measurements can be more challenging compared to measuring the manufacturing processes.

The service industry is a comprehensive concept, including dozens of different domains. Therefore, it is essential to identify various service processes according to their characteristics. Researcher Schmenner (1986 and 2004) has introduced the service process matrix in which the characterization is based on relative throughput time and degree of variation. Using these factors is possible to construct four quadrants where each quarter represents unique service process



type. Discovered types of service processes are service factory, service shop, mass service, and professional service. According to Schmenner, the service types are shifting towards service factories. The reasoning behind this is that services will decrease the labor intensity, cut the personnel cost and reduce throughput time by introducing technological systems due to digitalization. Based on the type of the service process, different measurements should be adapted.

Metric research has introduced a large variety of different types of measures which have created complexity regarding the study of metrics. Metrics classification is one way to organize this measurement mishmash and help to understand the big picture and choose right measurements to the proper situation. In general, service metrics can be divided into different categories in several ways including categorizations like metrics focus and tense, measurement influence perspective and impact level. The first classification, separate metrics based on their primary attributes: metrics focus and metrics tense. The metric focus attribute refers to the measurement unit. For example, the measurement reports are usually based on either financial or operational outcome. The metric tense attribute indicates how the measures are going to be used. This tense can either evaluate the outcome of performance or predict the future performance. The second classification divided metrics into different categories based on their influence horizon. Lagging measures (outcomes) indicate what has happened and leading measures (performance drivers) predict what will occur in the future. Finally, metrics can be divided into different groups based on the impact levels in the following manner: individual metrics, metrics sets, and performance measurement systems.

From the impact level categorization perspective, measurement systems are the highest level of measurements and have received an approval from the research field. Several different approaches have been proposed to provide integrative performance measurement system such as *Balanced Scorecard* (Kaplan & Norton 1996; Kaplan & Norton 1992; Kaplan & Norton 2001), *Performance Measurement Matrix* (Keegan et al. 1989), *Kanji business excellence measurement system* (Kanji 1998), and *Theory of Constraints* (TOC) (Lockamy III & Spencer 1998; Smith 2000).

Researchers have developed many other similar measurement systems, and all the frameworks attempt to provide a comprehensive solution for implementing a companywide performance scheme. However, these frameworks seldom provide guidance, how the company should design specific measurement system as well as rarely help with the practical realization of specific measures.

#### Strategy alignment

Among the researchers, there seems to be a clear vision that operational measures need to be derived from the corporate strategy. If this is not the case, changes in priorities resulting from the variations in the strategy can make the performance measurement unsatisfactory or even harmful. In turn, strategy-aligned operation measurements can promote and support the implementation of the strategy. Therefore, it is important for companies to understand the gravity of strategic alignment to survive and prosper in a dynamically changing business environment.

Many times, operational measures are not linked to strategic objectives. Often companies think that they have solved this problem by adopting the performance measurement systems like Balanced Scorecard. However, just using off-the-shelf framework will not help to identify which operational measure and drivers make the greatest contribution to the corporate financial outcome and the strategy. More advanced companies have tackled this problem by defining the operational measures based on the causal models (value driver maps). Causal models try to identify and demonstrate the possible causal relationship between the operational measurements and strategic objectives.

Researchers Melnyk et al. (2005), call the process, in which the strategic objectives are transformed into the operational measurements as translation. The metrics oriented research has had a little focus on the procedure by which corporate objectives are translated down to operational measures. Despite the benefits, it is not a simple task to achieve alignment between the metrics and strategy. Metrics can have very complex relations among other metrics in the measurement system. Moreover, the relation and influence of individual metrics to strategic

targets can depend on the time-lag. In addition, the metrics influence to the strategic objectives can be explained, in some cases, by the value of other metrics in the same metric set.

Because the translation process is challenging to implement, managers have developed multiple strategies to cope with this tension. Researchers Johnston and Pongatichat (2008) conducted an interpretive multiple-case study based on detailed interviews with managers and supervisors in four public government agencies. They analyzed the misalignment tension and various management strategies. The research revealed that there are at least three types of tension: between the top-line and bottom-line, between the stakeholders and between the short and long-term objectives. Moreover, the study showed that there are three types of management strategies to handle these tensions: do-nothing strategy, pseudo-realigning strategy, and districting strategy. These strategies try to hide the misalignment problem, preventing the change towards better tension management.

#### Organizational performance

To further investigate the alignment challenge, the organization performance must be analyzed. Therefore, the organizational performance has become an important part of empirical research in the field of business policy. Researchers often take the organizational performance into consideration when examining organizational phenomena. To achieve better organizational performance components of the company such as strategy, culture, and employees need to be aligned. Pioneers in the field of organization alignment are Nadler and Tushman who introduced a congruence model. Moreover, the technology information revolution has added a new aspect to the alignment process. It has been suggested that firms cannot be competitive if their business and information technology strategies are not aligned. Several alignment models have been introduced in the literature, primary among them the strategic alignment model. Henderson and Venkatraman (1993) developed a strategic alignment model to conceptualize and direct the research and the practice of strategic management of information technology.

The congruence model illustrates well, on a high level, how strategy is defined (input) and finally implemented (organizational design) to reach the end product (output). However, the

congruence model does not describe deeply how metric systems are defined and integrated into a corporation. This dimension is better illustrated through the strategic alignment model which provides a different perspective for aligning strategy and measurements.

Finally, the step-by-step alignment process (see Table 4) combines previously discussed theories and concepts. It forms an organized process to identify organizations alignment matters. The first step of the process is to define the congruence of organization/unit. The second step analyze the strategy process of organization and outline the need for defining the company specific strategy alignment perspective. The third step highlight the importance of detecting and understanding the alignment distortion of translation process. The fourth and the final step covers and evaluates the service processes. The process measurements are dependent on the type of the service process. Thus, different services types need distinctive operational measurements.

### 7.1. Main conclusions

There are several different service processes with own characteristic features. Thus, the type of the service process effects to the operational measures. For example, professional services have a very high relative throughput time and have a huge degree of variation compared to the service factories. Therefore, the operational measurements must be based on the characteristics of the service process. The organization must first identify the service process type and then design the suitable operational measures (see Table 1). Measures used in the manufacturing industry cannot directly adapt to the service processes because the service process deals with a much greater variance which is originated from both, internal and external, sources. Moreover, the service processes are moving towards service factories as a result of process development where the main idea is to reduce process variance and improve the lead time. To achieve this change, organizations must change the operational measurements accordingly, and measurements must consider the characteristics of the service factories to obtain desired results.

Service process measurements are useful to structure using three-layer approach. Operational measures are reasonable to be linked with the metrics sets, and they should be combined with the measurement systems. It is advisable to build the measurement system in layers in a way

that the causal links between the different metrics are secured. It is strongly advised to carry out the translation process of the strategic objectives in a controlled manner. Thus, the operational measures should be based on the causal models and value driver maps to detect the major factors affecting the realization of the strategic goals. While constructing and developing the measurement systems, it is necessary to consider metrics focus and tense as well as the leading and lagging factors of the metrics.

Organizational structure can strongly influence misalignment the between strategic objectives and operational measures. Organizational structure, like a network of companies, creates tension for aligning strategy. For example, the central group may force strategic objectives that are not relevant for regional companies, creating misalignment tensions between these two stakeholders. All the sources of strategy tensions, presented in the theory section, appeared in the case study. Especially the case A, has exposed under all of these different sources of strategy tensions. Thus, it is important to identify the strategies how managers are trying to control tensions and challenge them for better alignment. Moreover, it is favorable to start creating a systematic process for translating the strategic objectives into operational measurements.

To put a strategy into practice, it must have an impact on every level of the organization. Measurements must have a strong link to employees' incentives, and strategy must be tied to employees' measurements. If strategy changes, also the factors that affect employee's incentives are necessary to revisit. Moreover, clear and unambiguous communication towards the directors and staff is essential to succeed the strategy. For example, the Case A illustrated clearly that only directors were interested in strategic measurements but the communication towards staff happened mainly through annual measures. This communication mismatch creates an inconsistency between the strategy targets and actual execution leading to deteriorating performance.

## 7.2. Implication of theory and practice

The congruence model provides an excellent basis for detecting the misalignment issues between the strategy and operational measurements.

It also reveals well-functioning alignments not just misalignments. This is at least as important to understand when planning the performance measurement systems. Well-functioning alignments are the reasons why business is up and running as it is. Therefore, it is critical to focus on maintaining and strengthening them as well. Strategy execution is not just tracking and reacting to the meters, but also a great deal regarding the communication and collaboration, cultural enhancement, and improvements to incentive systems. Therefore, the congruence model enables organization-wide research without focusing on too much only on single functions.

The adapted strategic alignment model offers an excellent analytic tool for understanding more deeply the alignment issues. Like cases presented, different alignment perspective generates a particular type of the alignment challenge. There is no single best alignment perspective that will fit into every organization. Therefore, the alignment perspective should be carefully designed according to needs of the organization. Albeit, the case B perspective seems to generate better alignment results compared to the case A. The strategy alignment approach which is driven by the measurements provides a better premise for the alignment process because the measures are the key part of the strategic planning process and have not been relegated to the background. However, still, the translation of the strategic objectives need to be in place to achieve targets at the operational level. The alignment of the case A is more common than the case B, and the role of strategic measures is a little bit different compared to the case B where the strategic measures are used to monitor and track the execution of the strategic objectives.

In some organizations, measurements have taken even a more central position. For example, the main measure Pohjola-hospital is a lead time which measures how fast client can be cured, and all other factors like measurement infrastructure, service process, and business strategy are designed to support and enhance this measure. Its operation principle is to ensure an efficient chain of care so that the client can access the treatment without delay and be able to return to normal daily life as quickly as possible. According to the former CEO, they are constantly

measuring efficiency making the healthcare more like a logistics business (Laakso 2015). Therefore, Pohjola-hospital has adopted a service level perspective focusing on service efficiency.

Using the synthesis of the congruence model and strategic alignment model allows a useful starting point for studying the strategic alignment. Together, these models offer a comprehensive research framework to conduct strategic alignment study. Using the congruence model, it is possible to gather research data whereby the adapted strategic alignment model can be formed. Company specific strategic alignment perspective gives an excellent understanding of the alignment between the strategy and measurements. Moreover, using this information company can develop and improve strategic alignment.

### 7.3. Limitation and overview of future study

This thesis is a qualitative multi case study in which the results are inductively derived from data. Hence, the findings from the qualitative data are always prone to subjective interpretations arising from the prejudices of the author. Moreover, the author had to limit the number of the interviews and narrow down the scope of the literature review in order fulfill the master thesis requirements.

The observations are also sensitive to biases due to the different situations that case companies are exposing. The company if case A is still recovering from the effects of the major organizational change and the case B is currently designing and implementing a new strategy. Therefore, the maturity of organizations is not at the same level which may hinder the comparison of the cases. Moreover, the interviewees were aware of the subject of this research which might affect their expressed concerns and increase the biasedness of the study.

Cases were selected from entirely different industries which may explain some of the findings due to industry specific reasons. Moreover, all the cases were selected from the same country. This means that the findings may be influenced by the country-specific factors such as culture, behavior, and nature. In addition, the sample size was only two, and both case companies had a

unique but similar corporate structure reducing the generalizability of the study. Furthermore, the study focused only on the private corporations and did not address public companies at all.

#### Future study

Further study on the research topic is encouraged. Different service types and industries should be explored with a similar research approach. The specific results of this study should also be further tested by quantitative models and methods. In particular, it would be good to conduct more quantitative research by investigating how operational measures effects to the strategic objectives. These studies could lead to better practices for the creation of causal models and value driver maps to ensure the strategic alignment between the objectives and measurement. In addition, the findings also indicated that service management researchers could contribute to determine the relevant measurement metrics and objects related to the different service processes.

In the future, it would be helpful if studies more often would take a bottom-up approach, starting from the operational measures and ending up to the strategic objectives while investigating the alignment problem. Consequently, the measurement systems should be explored from the alignment of the operational measurement point of view. Finally, the significance of the service industry has only increased in the recent years, therefore, the enhanced research is needed.



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