Daily Management of a Service Organization

- in change towards excellence

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Preface

This master thesis is the completion of our studies in Industrial Engineering and Management at the Faculty of Engineering at Lund University. The project has been carried out during the spring of 2011 and originated from the need of gaining better insight into daily management and how to build relevant measurements for short-term follow-up at, what is in this thesis referred to as, the Service Organization.

The road we have travelled has indeed been exciting as well as challenging and taken place in a fast changing environment. The meetings have been many and we would like to thank everyone at the Service Organization who has taken their time to sit down with us and who has provided us with information, as well as feedback on our own thoughts. Special thanks to; you know who you are, for making this master thesis possible.

We would further especially like to thank our supervisor at the Service Organization, for outstanding support and providing a total opportunity to take part of whatever information, meetings and etc. we have felt relevant or educational. The same goes for our supervisor at the Faculty of Engineering, Bertil I Nilsson, for always being available and taking his time to sit down with us when needed.

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Executive summary

Title

Daily management of a Service Organization – *in change towards excellence.*

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Supervisors

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Background

As a part of the Service Organization's earlier initiated and at the moment on-going project; *"A more efficient Service Organization"*, daily management has been identified as playing a major part. The starting-point for this has been to gain insight into how the Service Organization is actually performing and how it would be possible to *measure*, *follow-up* and *visualize* this performance. To attain a higher performance, the focus has been on utilizing the philosophy based on Lean Production. By attaining better insight, arrangements and improvements to become more efficient can easily be done.

Problem definition

Key Performance Indicators (KPIs) are measurements that in a true and continuous way indicate how a process is performing and supports continual improvements. The question is what to measure, how to measure it and how to make use of and visualize it. Therefore this thesis presents one case study on how KPIs could be incorporated in daily work.

Purpose

The purpose of this master thesis is to apply the philosophy of Lean Production to a service environment and suggest ways of following up as well as visualizing the daily work conducted.

Method

This master thesis has been conducted with a systems approach and the data has been gathered qualitatively. The information has been gathered through literature studies and interviews as well as observations during our time spent at the Service Organization.

Project conclusions

The employees at the Service Organization are heading towards an exciting future. There are large opportunities for improvement, and follow-up of the daily work is perfectly possible. Improvements to create prerequisites for daily management by identifying customer needs, shifting from being reactive to proactive and standardizations are suggested in different contexts. Furthermore an improved feedback and measurement system containing external as well as internal feedback is proposed, along with a general model for establishing a culture of continuous improvements.

Glossary and Keywords

Customer	The ones utilizing the services provided by the Service Organization. In most cases not the same people buying the services.
Daily Management	Short-term and operative management, not necessarily conducted on a daily basis, but generally referred to as Daily Management.
Enterprise	Sibling companies found under the same company umbrella, whose employees are the Service Organization's customers.
Errand	A matter, sent in by the customer, for HRSC to solve. Consists of either an order or a question.
HRSC	Human Resources Support Centre.
KPI	Key Performance Indicator, measuring vital activities within an organization.
"A More Efficient Service Organization"	An ongoing project within the Service Organization, aiming at creating an environment in which continuous improvements are embedded in the organizational culture.
Payroll/PA	Payroll and Personal Administration. Process within HRSC, and consequently, the Service Organization responsible for the salary disbursement and solving non-salary related errands.
PSM	Production Safety Matrix. Tool traditionally used within the manufacturing industry to log occurring process problems, and thereby, identifying problem- and improvement areas.
SLA	Service Level Agreement between buyer and the Service Organization. Specifies what kind of services that are to be included in the value offer and to what price.
Service Organization	The object of study and client-company. Is part of a larger group of enterprises, and responsible for delivering support services to those.

Table of content

1 Introduction

1.1 The Service Organization

The client in this thesis referred to as the "Service Organization" is a support and service company within a larger group of enterprises. The Service Organization is currently employing approximately 300 people that work in any of the seven processes making up the services provided. Examples are Risk Management and Human Resources – of which the latter is further investigated in the case study conducted in this thesis. The Service Organization provides and sells their services as a solutions package to the other enterprises within the group.

1.2 A More Efficient Service Organization

In September 2009, the project "*A more efficient Service Organization*" was initiated with the intention to establish and create a culture of continuous improvements. Parts of this have been to utilize tools and thinking from Lean Philosophy and to map organizational processes of high importance. As process mapping is an activity previously overlooked within the organization, the project is of a rather extensive character. Furthermore, as process mapping and process based business development are time-consuming and challenging activities to perform, it is of utmost importance that the project is conducted with *patience*, *determination* and *broad commitment amongst employees*.

1.3 Problem description

Providing an environment characterized by ensuring progress being made according to plan and continuous improvements is a challenge within service. A physical flow does not exist and the progress made is seldom visualized and possible to follow for the ones not conducting the actual work. Not being able to follow and measure the work progress in turn creates an environment where prioritization is hard and improvements are less likely to be carried out. It is simply not possible to show objective measures of what an improvement brings about. Progress and advantages or disadvantages can only be perceived in emotional terms and rather on a personal level than on a team level. Further, how do you create motivation, discussions and awareness among employees regarding progress and improvements?

1.4 Purpose

1.4.1 Delimitations

Considering (a) the range of the Service Organization processes, and (b) the limited amount of time allocated for writing this thesis, one process has been selected as the main focus, viz. the the Service Organization *Payroll and personnel administration process* (Payroll/PA), found within the Service Organization's Human Resource section. Each month this process is responsible for issuing an extensive amount of salary disbursements to the employees working within the company that the Service Organization is part of.

1.4.2 Proceeding of this master thesis

When having conducted an initial theoretical study on how Lean and other adjacent tools can be transformed into fitting administrative services, the applicability of the latter on the Service Organization's processes is tested, i.e. a case study is launched, aiming at creating an easy and dynamic daily management. Based on this case study, the goal is to come up with suggestions for how true KPIs can be developed and visualized. In conclusion, the perspective is broadened and it is analyzed whether any case conclusions can be laid bare and elevated into more general truths, which can be useful in the future development work.

1.4.3 Objective summary

In brief, the main objective of this master thesis is:

- Investigating and describing how to best incorporate daily management in the Payroll/PA process.

- Proposing KPIs supporting the Payroll/PA daily management and that are in alignment with the overall organizational vision of using continuous improvements as a natural way to achieve excellence.

- Giving suggestions on how the KPIs can be visualized in an including and accessible way.

- Analyzing if any case study conclusions can be laid bare and elevated into more general truths, which can be useful in the future development work.

The result of this thesis will be a theoretical framework, concerning how to utilize daily management, as well as a presentation and seminar for the directorate of Human Resource Service Centre (HRSC) to engage in. Therefore the target groups are the concerned leaders at HRSC as well as fellow students in their last semesters.

1.5   Report outline

This thesis consists of nine main chapters. The greatest emphasis is put on the most comprehensive parts, viz. theory, empirics, analysis and conclusions.

- *Chapter 1: Introduction* consists of the background and purpose of this thesis. Further, a more general problem description is given.

- *Chapter 2: Methodology* read up on the scientific approach to the problem, data collection methods and the justifiability of this thesis.

- *Chapter 3: Theory* presents the absorbed theory used in this thesis. It concerns the concept of Lean, reinforcing Lean Production as well as service, measuring, visualization and how to manage change.

- *Chapter 4: Empirics* takes a deeper look into how the Service Organization and *especially* Payroll/PA are organized and operating. Further, the chapter reads up on the Payroll/PA departmental challenges.

- *Chapter 5: Analysis* is made up by thoughts and ideas, sprung from the current state analyze. Hence, it merges the theory and empirics read up on in the previous two chapters.

- *Chapter 6: Conclusions* presents possible solutions, i.e. measurement systems and how to establish them along with general improvement suggestions.

- *Chapter 7: Discussion* includes a short discussion section, consisting of general thoughts and further research suggestions.

- *Chapter 8: References* declares the different sources of information used during this thesis.

- *Chapter 9: Appendices* completes the thesis with presenting various documents that have not earlier been presented.

2 Methodology

2.1 Methodological framework

There are many methodological ways to undertake studies of businesses, each with its own specific characteristics and qualities. Depending on how a study is conducted, different methodologies are appropriate. The question formulation used in the research, together with the researchers view on reality, decides which of the following approaches that should be applied to the research. (Arbnor & Bjerke, 1997)

- Analytical approach
- Systems approach
- Actors approach

The analytical approach takes an objective stance and regard relations and explanations as being determined from the outside, i.e. the researcher tries to avoid influencing the object of study and aims at acquiring an objective view of how things relate to each other. Further it presumes that the reality is possible to divide into very small pieces and that every piece is able to stand on its own. The "whole" should be able to be understood by dividing the picture into those small pieces and securing that all of these are correctly understood. In addition to this, the relationships and linkages between the small pieces should be understood and discovered through, for example, hypothesis testing. (Gammelgaard, 2004)

The systems approach, which also often is referred to as the "holistic approach", views problems as a whole and emphasizes the pointlessness of dividing it into smaller pieces. A problem, defined by the systems approach, is an enlacement of parts, goals and links that mutually affect each other. Here, the research objective is creating a holistic problem picture, needed for improving the whole. The systems approach is, compared to the analytical, of a more pragmatic nature and aims at generating solutions that work in practice rather than trying to find and create absolute truths. The researcher approach is here traditionally observing from the outside without interfering, and hence, getting an objective view. The pragmatic version of this approach is though very close to the research object, in fact influencing it. The preferred method of studies is case studies, in which both qualitative and quantitative methods can be used. (Gammelgaard, 2004)

The actors approach is, compared to the analytical- and systems approach, not focusing on objectiveness. Instead it takes a stance that reality and interpretation is not objective, what matters are the social constructions where the accumulation of knowledge is determined from and how the researcher interprets it. Understanding and problem solutions are most effectively generated from within, as a part of the picture. Using the actors approach makes qualitative studies the most appropriate way of collecting data. (Gammelgaard, 2004)

	Analytical approach	Systems approach	Actors approach
Theory type	Determining cause-effect relations. Explanations, predictions. Universal, time and value free laws	Models. Recommendations, normative aspects. Knowledge about concrete systems	Interpretations, understanding. Contextual knowledge
Preferred method	Quantitative (qualitative research only for validation)	Case studies (qualitative and quantitative)	Qualitative
Unit of analysis	Concepts and their relations	Systems: links, feedback mechanisms and boundaries	People – and their interaction
Data analysis	Description, hypothesis testing	Mapping, modelling	Interpretation
Position of the researcher	Outside	Preferably outside	Inside – as part of the process

Figure 1: Arbnor & Bjerke framework (Gammelgaard, 2004)

The project's intention is to use a systems approach since the objective is to solve a problem through understanding of the whole picture and all underlying factors - in practice by being very close to the problem conducting a case study.

2.2   Research method

The research method carried out in this thesis has mainly focused on getting deep knowledge within one area of the Service Organization's business, i.e. Payroll/PA. This has been done through a case study. Our intention has been to understand the particular circumstances within the department and we have used multiple sources internally to determine the situation and problems occurring. Our research has though as well had elements of clinical studies in it since; parallel to our work, there has been an ongoing process of change in which we have taken part in exchanging ideas and views.

Throughout the thesis a technique consisting of a three-step process has been used. This was done by creating a basic understanding in the first phase and from there on moving further into the second step of identifying challenges, understanding specific circumstances and problems that need to be solved. The third step consisted of identifying possible solutions and proposing changes that were ventilated and discussed with concerned people at the client company.

Figure 2: Research procedure utilized in this thesis

2.3 Data collection methods

A range of data collection methods exists, and all of these have their own qualities and characteristics. Depending on the problem type it is possible to choose the one with the best fit. No method is superior to another; they just have different advantages and disadvantages and are hence appropriate in different contexts. In this thesis the data collection focus is on the methods, literature reviews, interviews and observations, regarded as most appropriate for solving the problem.

Literature reviews are studies of secondary data in the form of published material aiming at creating an understanding for a certain phenomenon. (Näslund et. al, 2005) In this thesis the literature review focus is on the philosophy behind Lean, Lean tools, how to build relevant measures in a service organization, how to visualize the measures in an appropriate way and how to manage change. In these areas, outright studies of suitable and ranging literature have been conducted. Appropriate literature has been chosen through contact with instructors at the Service Organization, Faculty of Engineering at Lund University, fellow students and own research.

An *interview* is a data collection method in which the researcher asks the respondent various questions. This procedure can be done in multiple ways, i.e. over the phone, in written, in person or online. Depending on the interview purpose and the circumstances, different methods have different characteristics regarding speed, depth, flexibility, dynamics, extent, anonymity and etc. (Lekvall & Wahlbin, 2001). This thesis has mainly used oral interviews as the method for data collection, because of the possibility of getting more in-depth insight. The most affected and involved interview objects have been interviewed in three rounds, while other objects of particular interest regarding particular areas have been interviewed in a less structured and more ad-hoc manner. The three rounds have had different purposes and therefore different themes but have all had a semi-structured approach. The first round of interviews mainly focused on getting basic knowledge, making it easier for us to grasp the full picture. The focus in the second interview was on understanding the problems and challenges experienced by the interview objects. Lastly, the third interview round was of a summarizing character. In this improvement proposals were ventilated and discussed. An interview can be

designed in different ways; a structured interview is based on a determined questionnaire, making it easier to compare answers from different respondents. The unstructured interview could be seen as a conversation in which the questions are of a supporting kind. The purpose is to give the respondent a greater possibility of being more exhaustive on the topic and for the interviewer to get a picture of the respondents' motivations, attitudes, beliefs and feelings. In between is the semi-structured interview, which can be viewed as a combination of the former two. (Näslund et. al, 2005)

The benefits of *observation methods* include observations having total trustworthiness and information that does not have to pass either person or computer. Then again, the technique has its limitations. Because of the observers' passive state, only actual *behaviors* can be studied, whereas abstract variables like knowledge, opinions, feelings and motivations cannot. Also the technique is restricted to operating only in present time, assumptions about the future or facts about the past are hence excluded.

Except the limitations read up on above, the observation method have another potential shortcoming, viz. observers affecting the course of events due to respondent's awareness of them being observed. This could result in study findings based on unrepresentative data. Hence, observations are categorized as either open or hidden.

When conducting observations, one can do so in a *structuralized* or *non-structuralized* way. The former takes advantage of accessible beforehand knowledge that indicates which different behavioral patterns can be expected and how these are easily booked.

Observations made with intention of getting incitements for adequate time organizing, can be carried out in mainly two different ways; one can either be very direct, basically clocking employees in their various work tasks, or more subtle, i.e. choosing specific moments and then register what is being done at these. The latter method is referred to as frequency study. (Lekvall & Wahlbin, 2001)

This thesis has, in addition to the interviews, an observational feature in it. The information has mainly been picked up during formal and informal meetings with adjacently topics.

2.3.1 Qualitative and quantitative research

The type of data collected is either qualitative or quantitative. Hence, the focus is either on width (quantitative) or depth (qualitative). What sets these approaches apart is how the data is codified and analyzed. Quantitative research calls for data codified in numbers while qualitative research is conducted through words, pictures and other formats not using ciphers as the carrier of information. Quantitative research relies on calculations and mathematical evidences, whereas qualitative research relies on reasoning by words and thoughts. (Lekvall & Wahlbin, 2001) Furthermore, quantitative methods focus on structure and is a lot more controlled than qualitative methods in which the formalization is much less substantial. Depending on the distance to the object it is appropriate to use either qualitative or

quantitative research. If the research is to be undertaken from a distance, it is hard to conduct qualitative research since this focuses on a deeper understanding of complex problems and analysis "from within". Quantitative research is a more appropriate research method to perform from long distances, since the research is to be done from the outside rather than "from within" and the focus is on width rather than depth. Note that the opposite is also true. (Magne Holme & Krohn Solvang, 1997)

This thesis builds up on a view gathered from the "inside" and a problem that is to be solved through interviews and observations. Therefore a qualitative approach has been chosen.

2.3.2   Primary and Secondary information

When collecting data one can basically obtain two kinds: secondary- and primary (raw) data. The characteristics of these two types are read up on in Table 1.

Table 1: Primary and secondary data

Data type	Composition
Primary	*First-hand* raw data gathered for the specific study.
Secondary	Various types of *second hand* data, i.e. already existing statistics, studies, interviews and etc.

When collecting secondary data, the proceeding is of a seemingly straightforward kind - i.e. the procedure consists of finding relevant data and registering this. However, one should always carefully review the source reliability from which the information has been gathered.

When collecting primary data, the challenge is twofold. Firstly, people who possess the information searched for must be located and contacted, i.e. approached in an appropriate manner. Secondly, the information must be measured, consisting of mapping respondent opinions, thoughts, feelings and etc. Furthermore, the latter challenge can be divided into two sub-groups; (1) passively observing processes unfold or (2) actively asking questions about the same. Suitably, these sub-groups are termed observation methods and questioning methods. (Lekvall & Wahlbin, 2001)

2.4   Argumentation and interpretation

Mainly there are two approaches, induction and deduction, to be used when analyzing the data collected during research. Induction is utilized when analyzing the data collected and establishing a theory out of it. Deduction is in turn used to verify already established theory with empirical findings. A combination of the both, abduction, also exist and means that the researcher can both utilize and stick with established theory to support his/her reasoning as well as establish and discover new findings. (Bryman & Bell, 2007) Because of the qualitative nature of the data collected during this thesis and the absence of already established theory within Payroll/PA, the inductive approach has been used.

2.5   Reliability and validity

Authenticity and trustworthiness are essential elements, if one wants to prove the conclusions drawn from a qualitative scientific study like this one. Trustworthiness is generally further divided into the four parts; dependability, confirmability, transferability and credibility. These four parts co-exist with authenticity, read up on below. (Bryman & Bell, 2007)

2.5.1 Authenticity

Authenticity touches upon the issue of being objective and taking several aspects and perspectives into consideration, eliminating the risk of being blinded and ignoring dissimilar views. (Bryman & Bell, 2007)

The authenticity of this thesis is secured by having interviewed a range of the Service Organization's employees holding different positions within the department, as well as persons outside it with varying contact points to the examined department. In addition to this, the literature review has been conducted with the objective of having multiple information sources providing information about similar phenomenon.

2.5.2 Dependability

Dependability determines whether the work conducted is possible to carry out once again. (Bryman & Bell, 2007) By keeping records of our work, from the first problem description and project plan to the data collected throughout the thesis, repeatability should be possible. This study has though taken place in a rapid changing environment, in which we during our project have had to adapt to new circumstances. This causes a risk for circumstances - and thereby end-results – being very different if carried out again.

2.5.3 Confirmability

Confirmability ensures that the researcher carrying out the work has not let him or her be affected by the research object. (Bryman & Bell, 2007) By having the empirical part of this thesis separated from the subsequent analyzing part and avoiding analyzing before the data collection was finished confirmability should be secured.

2.5.4 Transferability

Transferability touches up on the issue of generalizing the conclusions drawn and applying them to other contexts. (Bryman & Bell, 2007) Much of the content and proposals in this thesis are highly contextual and therefore has a low degree of transferability. In these cases, an extensive picture is presented to the reader, who then can make further decisions about the possibility of transferring it. Though, some parts are of a more general nature and at least the lines of thoughts regarding daily management and visualization are possible to embrace and apply in other contexts.

2.5.5 Credibility

For a study to be seen as credible there is a need for a dependable bridge between the data collected and the conclusions drawn. (Bryman & Bell, 2007) Several sources pointing in the same direction have been used to draw the conclusions of this thesis. This holds true for all data collection methods carried out in this thesis and it is therefore likely that the credibility is secured.

3 Theory

3.1 What is Lean?

The purpose of this section is to give a short introduction to Lean. Hence, the concept's underlying philosophy is explained, together with a briefing of the various techniques and tools making up its composition. The intention is to provide the reader with a basic mind-set, making it easier to understand later discussions and conclusions. The theory referred to throughout this chapter consists of seven main sections; Lean Philosophy, process mapping, Lean tools, Lean service, organizational measuring, visualizing and change management.

3.1.1 Birth of Lean

During the 1980's, a great study on the world vehicle industry development was conducted at the Massachusetts Institute of Technology (MIT). (Sörkvist, 2004) The aim was to lay bare the Toyota Motor Company (TMC) core philosophy, strip it off its native cultural aspects and apply its core elements on American industrial life. The concept composed at MIT was given the name Lean Manufacturing - often referred to as just Lean - and is basically stressing the resource-economic and customer-oriented way of running an organization. (Sörkvist, 2004)

Furthermore "*The Machine That Changed the World*", a very reputed book within the subject, sprung from the MIT project (Womack et al., 1990). In this, Lean is divided into four main areas: *Lean Production Development*, *Lean Manufacturing*, *Lean Suppliers* and *Lean Costumer Relation*. The purpose of the two latter is serving as backup functions of the two former - which are regarded as the essential parts of Lean.

3.1.2 Lean Philosophy

Lean can be heard of in many different contexts. Traditional examples include *Lean Production*, *Lean Manufacturing*, *Lean Product Development*. Further, more recent forms have arisen, including Lean Accounting, Lean Healthcare, Lean Service, Lean Administration and even Lean Consumption. (Womack & Jones 2005) Though their names are different, the background for each and one of them is the same - the Toyota Production System (TPS).

What makes the Toyota Motor Corporation (TMC) different from many western companies is how its managers and employees look up on their company. In the western world, work is often conducted in fragmented company departments. This often results in *functional-orientated* company cultures, encouraging people to only care about their own *functional silos*. In turn, this prevents them from viewing the company as a whole. In contrast to this,

companies like TMC focus on the overall picture. Since Lean is built upon *process orientation*, its scope is very much about seeing the overall picture and thereby preventing *sub optimization* from occurring. Besides, by viewing the company as a whole, a customer perspective is gained. In turn, this makes value-adding activities much easier to define and enables a more effective company- steering and design. (Ljungberg & Larsson, 2001)

Over the years, various authors have made their attempt to capture the Lean Philosophy. Some have summarized it in very narrow way, whereas others depict it in a more extensive one. Two of the most well renowned publications are the previously mentioned "*the Machine that Changed the World* – Womack et. al " and "*The Toyota Way* – Liker".

3.1.2.1 Lean according to Womack & Jones

According to Womack et. al (2003), Lean can be summarized from without five main objectives.
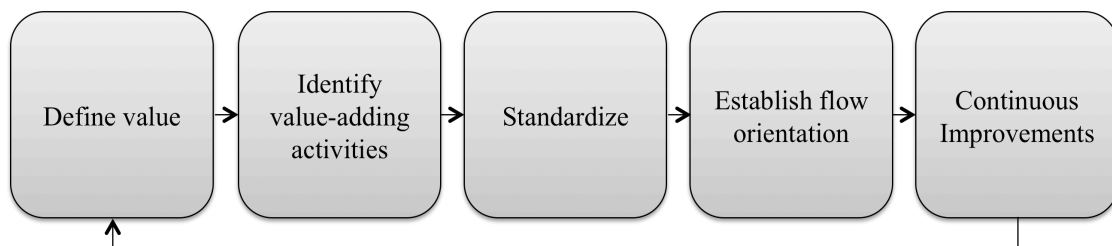

Figure 3: Lean according to Womack

Define value is about recognizing what the customers are demanding and who the customers are. It could be thought of as a lesson in understanding the customer and his or her needs. Depending on which part of the company examined, the customer varies, i.e. the customer ending up buying the company service/product is not the same throughout the whole supply chain. This means that the customer can as well be the employee or the function sitting next in line. Defining value can be a troublesome process since many companies perceive that they know what their customers want. Actually, it is often hard to *really* understand what is appreciated and valued. Therefore it is of high importance to get a clear picture of what the customer demand and company goal should strive for. Walking through the chain of activities from customer need to customer satisfaction, defining customer value in every part of the organization can do this. In turn, this makes it possible to organize more appropriately, maximizing the customer value- and satisfaction delivery.

Identifying value-adding activities is about identifying activities that actually contribute to solving the customer's problem, and hence, increasing the customer satisfaction level. Generally, three types of activities are to be found within companies; *value adding activities*,

non-value adding activities and *waste*. Value adding activities are activities directly aiming at solving customer problems, and are therefore the ones that the customer is willing to pay for. Non-value adding activities consist of activities not directly adding value to the product or service, but that nonetheless are needed for meeting the demands of other stakeholders, or because they supports other activities. Waste is activities that do not create value for the customer, organization or any other stakeholder. To be able to maximize the customer value, waste should be *eliminated*, non-value adding activities *minimized* and value-adding activities *maximized*.

Standardization is a tool creating stable processes in which standardized services/products are produced. The standard should be the currently "best way" of conducting a certain activity. As a result, the processes become more reliable and efficient, which in turn leads to time being freed up. This can subsequently be used for even further improvement and development. The employees thereby earn greater responsibility and a larger influence on how to conduct their daily work. They will also be able to have a wider range of work assignments since the standardization vouches for rotation between different tasks.

Establishing flow-orientation is about moving away from a mind-set in which the service/product is pushed out to the customers (which was successful during the period when the demand was higher than the supply). In the current situation, where the supply is greater than the demand and the customer is more demanding, it is important to deliver *what* the customers need, *when* they need it and *where* they need it. Therefore, a "pull" orientation is much more appropriate, i.e. products being made on customer demand and are hence "pulled" through the different processes. With flow-orientation queues and stocks are avoided. In turn, this lowers lead-times and decreases the accumulation of capital in production. It also makes it possible to produce small batches with customer-adapted products.

Continuous improvements are the last step and ground principle in Lean companies striving towards perfection. This should be viewed as an unobtainable mission, but a mission that should indeed be everlasting and continuously worked on.

3.1.2.2 Lean according to Liker

According to Liker (2004), Lean is characterized by 14 more telling principles, divided into four categories: Philosophy, Process, People & Partners and Problem Solving. Liker refers to these as the 4 P model.
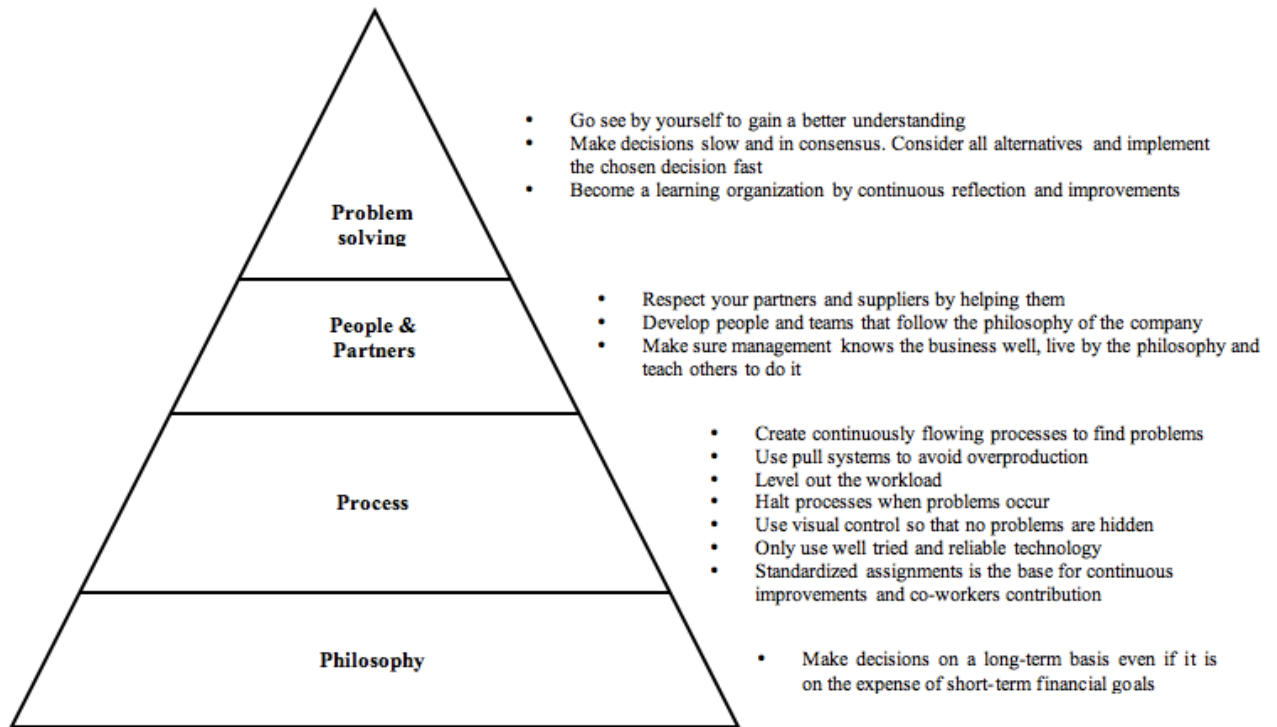
- Go see by yourself to gain a better understanding
- Make decisions slow and in consensus. Consider all alternatives and implement the chosen decision fast
- Become a learning organization by continuous reflection and improvements

Problem solving

- Respect your partners and suppliers by helping them
- Develop people and teams that follow the philosophy of the company
- Make sure management knows the business well, live by the philosophy and teach others to do it

People & Partners

- Create continuously flowing processes to find problems
- Use pull systems to avoid overproduction
- Level out the workload
- Halt processes when problems occur
- Use visual control so that no problems are hidden
- Only use well tried and reliable technology
- Standardized assignments is the base for continuous improvements and co-workers contribution

Process

- Make decisions on a long-term basis even if it is on the expense of short-term financial goals

Philosophy

Figure 4: Lean pyramid (4 P Model) according to Liker (2004)

3.1.2.3 TPS temple

Further, the Lean Philosophy is often visualized as the TPS temple consisting of roof, walls and foundation. The roof represents the goals of working with Lean, i.e. attaining the highest quality, the shortest lead-time and the lowest cost. The walls consist of the main principles, *Just-in-time* and *Jidoka*, up on which Lean is built. These in turn rest on the principles of a leveled workflow and standardized tasks. (Petersson et. al 2008)

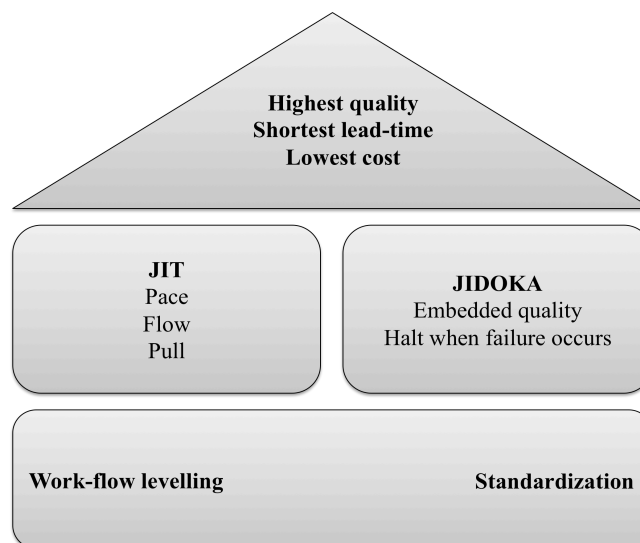

Highest quality
Shortest lead-time
Lowest cost

JIT
Pace
Flow
Pull

JIDOKA
Embedded quality
Halt when failure occurs

Work-flow levelling   **Standardization**

Figure 5: The Lean temple (Petersson et. al 2008)

Heijunka – Workflow leveling

Heijunka is Japanese for leveling and implies to level the production in terms of both volume and product mix which can vary heavily over time. By taking the amount of units for a certain period of time and dividing them over that same time period, the same number of units and mix is produced each day. In turn, this creates predictable and stable processes. The contrary situation, in which the production varies over time, results in an unstable process in which quality, employees and suppliers suffer to keep up with the large fluctuations. Where large variance occur regarding the amount of work needed, it is appropriate to spread the different "products" and level the workload instead of allowing peaks where the workload is very high. (Petersson et. al, 2008)

Standardization

Standardization is the other part of the foundation and consists of an agreement amongst the employees on a "best way" of conducting work. This agreement is followed only until a new and better way of working is found. Standardization is important when trying to discover abnormalities and when creating predictable process performance. For the standardization to be useful and efficient it is important that the employees feel that they are in control of the standard way of working. By involving the employees, the ones conducting work on an everyday basis, several benefits are gained including consensus on what is important, appropriate degree of detailing, simplicity and etc. (Petersson et. al, 2008)

Just in Time

Originally, this tool was thought of as a sort of waste eliminating suction cup. The intention of Just in Time (JIT) is securing that the right detail, in the right amount, arrives to the right place in just the right time. By securing this, lead times can be substantially reduced. Of course, a complete JIT implementation does not only depend on the organization in question, but rather on all its suppliers as well. Therefore, it is a time-consuming tool to nurse. (Lumsden, 2006)

JIT consists of the principles *pace, continuous flow* and *pull system. Pace* is what sets the pulse in the flow and specifies the volume to be produced per time unit. To calculate the pace, the amount of units to be produced is divided with the available time. Further, pace enables a leveled workflow, which vouches for more even- and higher quality. In addition to this, abnormalities and problems are surfaced when deviations occur. *Continuous flow* aims at eliminating waste activities and shortening lead-times. Leveling workflow eliminates buffers and hence enabling hidden problems to come up to the surface. A *pull system* builds up on the principle of halting production unless customer demands trigger the process. In this way, overproduction can be avoided. (Petersson et. al, 2008)

Jidoka

Jidoka is about making right from the first time and consists of the two principles; *embedded quality* and *halt when failure occurs*. To *embed quality* in the products it is a necessity that all employees have the right competence and follow the standardized tasks. Embedded quality is a way of working in stark contrast to the way of working with quality control; embedded quality is much about making things right from the very beginning. When striving towards making things right from the very beginning, it is important to understand the customer demands so that it is possible to fulfill these from the very beginning. The second part of making things right is to *halt when problems* occur, so that only products with the required quality are produced. Hence, wastes in the form of defects are eliminated and that the problems are solved immediately. (Petersson et. al, 2008)

3.1.3 Waste

According to both Liker and Womack & Jones, waste is a central theme of Lean. By eliminating waste, time and money is freed and can be adequately invested. Waste, defined as everything not adding any type of value to the product, is commonly divided into eight different types. (Liker, 2004)

Table 2: Waste in production (Liker, 2004)

Type of waste	Example
Transport	Transporting items between work stations while in progress when not necessary
Inventory	Inventory increases storage costs, accumulates capital, causes unnecessary transports and hides problems
Motion	Searching for tools and parts
Waiting	Waiting on precedent steps in production
Overproduction	Excess production creates unnecessary inventories, and transports
Over processing	Excess processing not valued by customer, unnecessary steps within production process
Defects	Production of non-working products, correction and rework
Waste of employee creativity	Limited responsibility and authorization to carry out basic tasks, control by management, inappropriate equipment

All the above waste types need to be minimized or even eliminated, in order for a company to become truly Lean.

3.1.4 Lean tools

As mentioned earlier, Lean is made up from various tools. Some of these are quite similar – sometimes even overlapping. The most essential ones are read up on below.

3.1.4.1 Andon

Another aspect of Lean stresses the importance of visualizing how a production facility or company department is performing on a continuous basis. The technique for doing this is called Andon (Japanese for "paper lantern"). By installing electric light board systems in a visible place for all co-workers to see, abnormalities and batch buildings within a production system can immediately be taken care of. When a certain work station experience abnormalities, this is indicated by a light stopping the whole production system and enabling co-workers from other parts of the system to aid the work station affected until the underlying problem is eliminated. Andon is frequently used within TMC, where actually all assembly line workers have access to their own cord to pull whenever a problem occurs. Therefore, it is not unusual that the TMC production line can stop hundreds of times during just one shift. Though time is initially lost due to the many stops, product quality will improve in the long run. Furthermore, because the whole system stops every time a problem occurs, all co-workers are given the chance to learn from every mistake or system abnormality. By learning from mistakes the first time, problems are avoided the next time. This insight naturally supports a philosophy of continual learning. (Li & Blumenfeld, 2005)

Line	1	2	3
Normal		*Green*	
Alert	*Yellow*		
Abnormal			*Red*

Figure 6: Andon board illustration displaying the current status of three different lines (green-normal: line 3, yellow-alert: line 2 and red-abnormal: line 3).

3.1.4.2 Kaizen & Kaikaku

The concept of Kaizen (Japanese for improvement) was introduced by Masaaki Imai during the mid 1980's and is regarded as a sort of melting point for philosophies and tools for decades known and used in Japanese quality works. These provide a profound view on how every fraction of a company's daily activities can be subject to continuous improvements. In the spirit of Japanese culture, all co-workers shall know and feel that they are an important part of the whole. In turn, this leads to engagement and secures that continuous improvements are seen as a natural part of daily working routines. Hence, potential complications can arise, when Kaizen is being applied on western companies whose culture has a different, more individualistic anchoring. (Sörqvist, 2004)

Kaikaku is quite the opposite of Kaizen, most often consisting of many incremental changes. Parallel with the many incremental changes of Kaizen, there is also a need for changes of a more comprising nature. Kaikaku is about making a radical change during a limited period of time and is often an initiative initiated by management, to be compared with Kaizen, which is mostly based on employee involvement. (Petersson et. al 2008)

3.1.4.3 Poka Yoke

Eliminating the risk for problems to occur is certainly the most efficient way of preventing them from occurring. Poka Yoke is a tool achieving this by creating working procedures that are problem proof - i.e. only one way of doing things is allowed to exist. Trying to do things differently will not work and will not take the employee any further in his or her working progress. This ensures the quality of processes - everything is assembled in the same way and no abnormalities should be able to occur since everybody conducts their work in exactly the same manner. The Poka Yoke can for example consist of devices refusing to be put together in a certain manner or alarm signals sounding when deviations occur. (Liker, 2004)

3.1.4.4 PDCA

Probably the most widely spread tool that can be used when working with quality and continuous improvements is the Deming PDCA-cycle. This serves as a template whenever an improvement decision is taken. The first step, plan, establish which goals and visions the change is expected to generate. Next, the do-step of the cycle determines how these can be achieved. The check-step investigates the effects of the implementation, i.e. has this led to the goals expressed in the plan-step? If so, the cycle is completed, and if not, appropriate actions are to be taken. In the latter case, the check- and act-steps are iterated until the desired goals have been reached. (Ljungberg & Larsson, 2001)
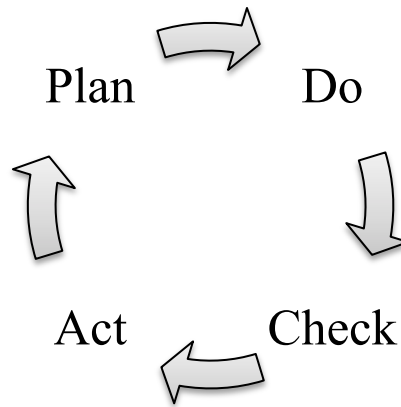
Figure 7: PDCA cycle (Ljungberg & Larsson, 2001)

3.2 Process mapping

Process- and flow-mapping can be of great help when striving towards improving company processes, i.e., tuning them in alignment with external customer needs, and hence, maximizing value-creating activities. The following section partly presents the 6 Sigma originated concept of SIPOC; used when looking for adequate locations to measure process performance.

3.2.1 SIPOC

To be able to understand and visualize how a company's processes work and flow, SIPOC is a simple and effective tool that can be used. SIPOC has its origins from 6 Sigma and stands for Supplier-Input-Process-Output-Customer. It can be a great tool to use when looking for appropriate locations to measure the performance of a certain process, whether it is of a main- or sub character. SIPOC makes it possible to measure input, output as well as directly in the process steps. The task of carrying out a SIPOC consists of 7 steps (Sörqvist 2004).

- Choose the process to apply SIPOC on

- Choose start and end points to define the process.

- Draw the main steps in the process, exclude details and focus on the steps on the highest level.

- Identify the customers of the process, i.e. the ones that use the process and its results.

- Identify the process output, which depends on what the customers of the process demand (goods, information, services, documents and etc.).

- Identify the process input, i.e. the input needed to make the process work properly (goods, information, services, documents and etc.).

- Identify the process suppliers, who they are and what they deliver.

3.3 Service characteristics and quality

This chapter explains the particular characteristics of services compared to traditional manufacturing and why there is a need for a different mind-set when approaching and working with service.

3.3.1 Service and its characteristics

Service differs from manufacturing in multiple ways both in terms of production, delivery, physical shape and the customer interaction. Services are commonly produced, delivered and consumed at the same time and are not possible to stock. There is further no actual goods since the service rather is a process consisting of a number of activities in which the customer is in close interaction, alternatively participates in the production. Each unit of service is therefore different from another since the customer need most often change from customer to customer. (Grönroos, 2008)

There is also a critical difference regarding customer perspective. A traditional perspective builds upon the transaction perspective where a business creates value for the customer by supplying them their product with the value embedded within. The value is in having the product itself. Hence, this can be produced in advance and the focus is on the outcome of the production process. This is in stark contrast to the service business, which creates value for the customer by providing a "product", together with the customer and the value is created in cooperation. Here the focus is to what extent the product being supplied supports the customer's own processes. Value is rather created than distributed physically to the customer. Because of the close interaction between seller and consumer, the relation between them has a much higher importance. The importance of the relationship also stresses the need of being customer-oriented; a poor effort to meet the customers demand is much more obvious since the value creation as well as the relationship will be seriously affected. In combination with the importance of retaining customers because of the high costs of recruiting new customers, not to mention the costs to retrieve disappointed customers, the customer-orientation is of highest importance when operating and working in a service business. A very telling example is that it costs five times as much to recruit a new customer compared to keeping an existing and 25 times as much to retrieve a disappointed customer. An appreciated and repurchased service is not only more cost effective than focusing on retrieving new customers, it also provides benefits as positive word-of-mouth and free marketing by your own customers.

Consequently, retaining customers - and in long turn customer-orientation - must be seen as the most important objective in a service business. (Grönroos, 2008)

3.3.2 Delivering service quality

When delivering service quality, it is of great importance that the supplier of the service understands how the service is valued and perceived by the customer. When this knowledge is attained it is possible to handle the demands and desires of the customer in a wished-for way. Therefore, the relation between the service delivered and the benefits attained for the customer must be explored. (Grönroos, 2008)

To be able to deliver service value to the customer, the quality of the same is of high importance and occurs in the interaction between customer and the employee providing the service. There are several factors affecting the perception of the customer and according to Zeithaml et. al (1988) these can be characterized as four gaps on the side of the service provider.

1. Difference between consumer expectations and management perceptions of consumer expectations

2. Difference between management perceptions of consumer expectations and service quality specifications

3. Difference between service quality specifications and the service actually delivered

4. Difference between service delivery and what is communicated about the service to the consumers

To what extent the gaps exist and whether they are growing or shrinking depends on different factors within the company providing the services. The size of gap number 1 is determined and affected by the extent of communication between management and the employees in contact with customers (-), the marketing research orientation of the company (-) and the number of layers between management and employees in contact with customers (+).

The second gap is affected and determined by management commitment to service quality (-), setting goals relating to service quality (-), task standardization (-) and perception of feasibility for meeting customer expectations (-).

Gap number 3 is determined by extent of teamwork perceived by employees (-), employee-job fit (-), technology-job fit (-), extent of perceived control experience by customer-contact personnel (-), extent to which behavioral control systems are used to supplement output control systems (-), extent of role conflict experienced by customer-contact personnel (+) and extent of role ambiguity experienced by customer-contact personnel (+).

Finally the fourth and last gap is determined by extent of horizontal communication (-) and propensity to over promise (+).

The sum of the four above stated gaps is a fifth one on the customer side between the perceived service received by the customer and the expected service. By knowing what factors determine the size of the gaps and in which way they affect them it should be possible to work on closing the gaps down and attaining a higher service quality. (Zeithaml et. al, 1988)

3.3.3 Kano model

Customer satisfaction has traditionally been regarded as a rather straightforward and one-dimensional concept. Thus, being able to identify and satisfy customer needs has been in direct proportion to the achieved level of customer satisfaction. Though, the correlation might not be quite that simple. In fact, some delivered quality attributes that meet customer expectations of one person or a specific group of people, might not increase the overall customer satisfaction level. Therefore it is of great importance to find out the underlying connections deciding which product- or service quality attributes increases, decreases or keeps the customer satisfaction level unchanged. (Yang C-C, 2005)

According to the Kano model, a quality attribute should be regarded from without two perspectives; one objective and one subjective. The former is an objective measurement, showing the delivered quality level, whilst the latter is of a more subjective kind, estimating the perceived customer satisfaction level. Taking this into account, according to the Kano model, there are five different kinds of quality attributes (Yang C-C, 2005)
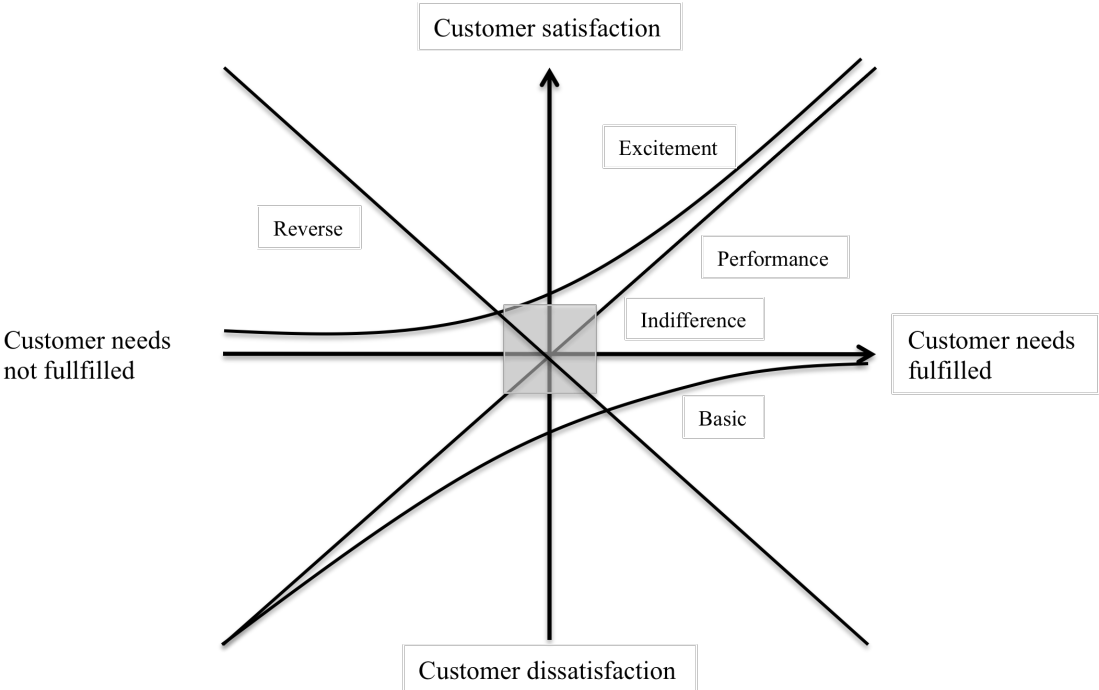

Figure 8: Kano Model (Yang C-C, 2005)

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Table 3: Kano model quality attributes (Yang C-C, 2005)

Excitement quality attribute Consists of an attractive feature, unexpected by the customer. Hence, if included, the customer satisfaction level will increase, whilst its absence will not cause a decrease of the same. Example: A mobile phone running without having to be charged
Performance quality attribute The attribute in closest relation to how customer satisfaction measuring has traditionally been looked at. It is illustrated in the Kano model as a positively linear line in direct relation to the level of customer satisfaction. Example: The quality of the zoom feature in the mobile phone camera.
Basic quality attribute An attribute that is taken for granted by the customers. If included, the customer satisfaction level will remain the same, but if not, it will dramatically decrease. Example: The SMS function in a mobile phone.
Indifferent quality attribute Just as the name implies, neither a presence nor an absence of this specific feature will affect the customer satisfaction level. By knowing these, a lot of unnecessary work can be saved and energy directed towards features actually increasing the customer satisfaction level. Example: The material used for holding a mobile phone battery in place.
Reverse quality attribute A customer can of course both be looking for the simplest solution to his/her need and for a more advanced solution, requiring a more advanced product- or service model. Therefore, the presence of a feature can sometimes decrease the customer satisfaction level, while its absence increases the same. Example: A customer wanting a very basic mobile phone, but is talked into buying one that has a built-in advanced GPS.

3.4 Lean service and administration

The following chapter explains the theoretical background of Lean applied on a service and administrational environment. Further it also touches up on the customer in terms of service quality.

3.4.1 Lean applicability

Following the success of Lean Production during the last decades, the concept has caught the attention of other types of companies than solely traditional manufacturing companies. Lean accounting and health care are some examples of new Lean areas and Lean service and administration are others. Companies carrying out services, like producing companies, have

identified delivering quality as a factor for success. Quality, as much as cost, can be a competitive edge and Lean could be one way of attaining high quality. There are split views of whether it is actually possible to apply Lean to service. Some are of the opinion that it is perfectly possible to transfer the principles behind Lean and that service and administration of course, like Lean Production, should focus on delivering value to the customer. The philosophy behind Lean Production is possible to apply to services as well. (Allway & Corbett, 2002) Others are of the opinion that the variability of the customer in the process - i.e. that the customer and problem differs from time to time - makes it very hard to standardize the working procedures. (Åhlström, 2010) Another explanation to the resistance to Lean service organizations is that it is harder to distinguish value from waste in administrative work compared to production. (Keyte & Locher, 2004) Though, there is indeed a great interest in applying Lean to other parts than traditional production and that it might be possible to transfer some of its principles and benefits.

Most often there are at least two types of activities to be found when designing, ordering and producing a specific product: (Keyte & Locher, 2004)

- Activities creating value that is perceived by the customer

- Activities not producing value perceived by the customer but nonetheless are needed to be able to carry out the business transaction

Most of the administration and service carried out within companies are made up of the second type, which are needed for the company to be able to carry out its service or product. Like production, administration and service also suffer from waste, the same eight wastes to be found in production, but in a bit different disguise. (Keyte & Locher, 2004)

Table 4: Waste in service and administration (Keyte & Locher, 2004)

Type of waste	Example
Transport	Multiple handovers, redundant attestation
Inventory	Batches of matters and reports
Motion	Movement to/from printer, fax, archive etc.
Waiting	System downtime, response, waiting on attestation from others and customer information
Overproduction	Print papers before needed, buy inventory before needed, forward matter before next person in line is ready to start working on it
Over processing	Reproduction of data input, multiple copies, extensive and unnecessary reports without purpose
Defects	Error registrations, invoice errors
Waste of employee creativity	Limited responsibility and authorization to carry out basic tasks, control by management, inappropriate equipment

3.5 Organizational measuring systems

This section provides a short background on measuring, including its true purpose and the drawbacks of measuring in a traditional way. Thereafter, more appropriate ways of measuring, including the benefits of these, are discussed. Lastly, examples of performance indicators are read up on, along with implementation suggestions.

3.5.1 Traditional ways of control and measure

Typically, four ways of control and measure exist; *action*, *personnel*, *cultural* and *results* control.

Action control is closely related to the ideas of Taylor - i.e. a very direct form of control, in where what to do - and not to do - is narrowly defined. Tasks not to be done may be kept away or even forbidden to undertake by a person not fully trusted.

Personnel control is a bit more modern and unobstructed way of controlling, in which the employees through expectations are trusted to control and motivate themselves.

Cultural control is a form of control focusing on the interaction between employees and could be seen as an example of control in a Lean way. The employees are trusted to monitor and help each other by sticking to the principles agreed upon.

Results control is probably one of the most widely used control system, focusing on employee performance, teams or suchlike. Further, awards or even punishment are carried out, based on performance.

All of these ways of controlling exist today and most of them in combination with one and another. Some of them are more often occurring in certain contexts and countries, e.g. results control is more often to be found in white-collar worker environment, action control is more likely to be found among blue-collar workers and cultural control is more likely to be found in for instance Japan. (Merchant & Van der Stede, 2007)

3.5.2   Misleading measures

A strange phenomenon often occurs in systems where Lean successfully has been implemented. As time goes by, the effects of the implementation tend to decline or in the worst case, completely cease. Thus, unfortunately the initially improved organizational performance is lost. The cause for this to happen is often a continual use of traditional goals – based on obsolete value creation ideas - when measuring employee-, departmental and process performance. Crassly put; without modern, horizontal and customer-oriented measurements, the Lean organization cannot persist. (Stenzel, 2007)

In "Freedom from Command and Control", work psychologist and management thinker John Seddon discusses the widely occurring – though outdated – command-and-control (CaC) principle within service organizations. CaC views the service organization as a top-down managed hierarchy, in which all decisions are moved upwards - i.e. the service personnel are viewed as incapable of performing any tasks but the ones clearly described by team leaders. Furthermore, the principle encourages budget focus, standards and functional-oriented measurements - variables directly sprung from Taylorism. The alternative to CaC is "systems thinking", which distinguishes itself from CaC in several ways. (Seddon, 2010)

One might wonder how such an obviously restrictive principle as CaC can still be allowed to prevail within many of today's modern organizations. Ironically, the answer to that question is that its disability is not at all that obvious. Actually, when viewed from a narrowly perspective, it is quite well functioning. The deeply rooted way of measuring performance has had a blinding effect on all involved, disabling them from of stepping "outside the box". In turn, this block their realization of the huge amount of resources wasted due to misleading, and often even destructive, company value-systems.

A service department within a functional-oriented organization tends to focus on functional-based silos, i.e. goals set by company executives for the head of department to reach. In turn, as the head of department and etc. are evaluated from these, functional-based silos often

trigger a phenomenon known as *the walls inside the company*, which stresses the disability of inter-organizational departments to cooperate in a way that is favorably for both parts, and hence, for the company as a whole. Functional-based silos create mental- often combined with geographical distances, resulting in poor interdepartmental cooperation. (Larsson & Ljungberg, 2001)

But how can then blinding and sub-optimizing functional-based measurements be avoided, and horizontal and customer-oriented measurements be implemented? How can one assure that right activities are being measured - and consequently that the wrong ones are not? Besides, how can the validity and reliability of these be guaranteed? The challenge, in today's high-tech society is hardly the measuring itself, but rather the *purpose, quality* and *interpretation* of the same.

Table 5: Command and Control vs. Systems thinking (Seddon, 2010)

Command and Control		Systems thinking
Hierarchy	**Perspective**	Outside in, system
Functional	**Layout**	Demand, value and flow
Separated from work	**Decision making**	Integrated with work
Production, goals, budgets	**Measurements**	Capacity, variance, in relation to purpose
According to contract	**Customer approach**	What is important?
According to contract	**Reseller approach**	Cooperation
Handle people and budgets	**Management task**	Systems change
Control	**Basic view**	Learning
Reactive, through projects	**Change**	Adaptable, integrated
From outside, bonuses etc.	**Motivation**	Inherently (personal development)

3.5.2.1 Measurement within insufficient systems

How can the performance of a service department adequately be measured and evaluated? An apparently straightforward answer to this question is letting executives define various goals, often expressed in absolute numbers, for the employees to pursue. The ones who reach these goals should be encouraged, the ones who surpass them should be rewarded and the ones who fall below will be reviewed. This way of approaching performance directs all attention towards the people working in a certain system, i.e. the performance of a service department

is based upon people's ability of adjusting to a certain system. *But what if it system itself is deficient?* What if seemingly untouchable measurements, expressed by well-reputed executives, are actually misleading?

In "Freedom from Command and Control", Seddon questions management standard Investors in People (IiP) and its ability to seriously impact the end result. This because resources invested in employees will be of little or no use, if they are contained in- and stifled by an ineffectively system. Hence, focus should move from internal and misleading department goals and instead be directed towards establishing customer-oriented measurements that further process-orientation - and therefore reduces the risk of sub-optimization. Though, destructive goals are still a natural part of the reigned culture in many companies and if the culture itself is not altered; there is no sign of their diminishing.

3.5.3 The Lean way of measuring

Presume that one avoids all traps read up on above, i.e. the right things are correctly measured and interpreted. In turn, this leads to a measuring system that is truly process-oriented. But if one succeeds in doing this, *what benefits are then to be expected?*

3.5.3.1 The benefits of true measuring

Larsson and Ljungberg balance their harsh criticism against functional-based measurements by stating eleven positive impacts of true measurements.

Measuring equals orienting

> An adequate measurement system makes organizational directions and current positions visible. The implementation can be compared to removing a blindfold. Furthermore, without measuring, improvement work is hard to manage. Hence, measuring is a sign of quality.

Measuring as incitement to action

> The rapid change of the market and the society in general, makes it absolute crucial for company responses to be both fast and conducted at an early phase of the process.

The value of benchmarking

> By establishing true key figures, companies are able to compare their operation to others. A condition for benchmarking activities to succeed is that the organizational processes concerned have been properly mapped.

Though, attention should be paid to the common pitfalls of benchmarking. This means that data used always should be subject to harsh review. Else, benchmarking is of no value and can actually be damaging, due to misleading and confusing results.

Measuring means focusing

What is measured gets done. This fact emphasizes the effect measurements can have on people, i.e. encouraging certain behaviors. Thus, by making sure that the right things are being measured, one can control which activities are considered as most value adding.

Measuring identifies problems

Measuring makes it much easier to understand underlying problems stopping organizations from reaching their full potential. Besides, if visualizing both problems and potentials, measuring can also solve speculations about the source of certain problems or which have the greatest impact on operations.

Measuring creates a common language

Furthermore, measuring helps the making of process-requirement specifications (i.e. delivery times, productivity etc.). This is of great importance for process-standardization – especially in larger companies.

Measuring as the natural link between achievement and result

The motivation of team-members or organizational departments can be substantially increased if their own achievement are visualized and seen as an important part of the whole. Otherwise, it is easy to feel that individual performance is never noticed or appreciated.

Measuring motivates

Following in the spirit of the former aspect, being able to continually and quickly see how a process is performing at the moment is a great motivational trigger.

Measurement as foundation for purchase decisions

With measurements the supplier performance can continually be followed. This information can then be used when making purchase decisions. This also makes it easier to communicate which variables are crucial for the supplier relationship to be successful.

Measuring as incitement for change

Without measuring, improvement work can only be based upon speculation and gut-feeling. Despite the often-true indications of soft values, it is indeed very valuable to Lean against hard values before initiating a project. Actually, in the long run, measuring is…

…necessary for establishing a culture of constant improvements

With a true measuring system it is easier to establish which problems cause the most damage and which occur most frequently - realizations that keep the wheels of constant improvements in motion.

When studying the aspects above, it is easy to understand the need for true measurements. However, the difficult part is securing that the right things are being measured in the right way. Furthermore the accumulated insight must be used in the right way, i.e. it must generate knowledge and not just graphs or charts. Knowledge and understanding - not the measurements themselves - are the conditions enabling improvements. (Larsson & Ljungberg, 2001)

3.5.3.2 Seddon's three criteria

According to Seddon, the purpose of true measurements is partly eliminating the use of CaC techniques, but also to create knowledge and insights which – when laid bare – affect the system they arose from. In "Freedom from Command and Control" three essential principles for true measurements are presented.

Principle 1: The criteria of true measurements

Seddon stresses the importance of measurement in order to *understand* – and hence being able to *improve* – process performance. Department goals, derived from CaC philosophy, often cause confusion and stress. Furthermore, they are of an arbitrary- and to the co-worker often abstract kind. In other words, the exact opposites of true measurements, which are both concrete and encourages the actions whished-for. They also give incitements for creativity and adaptability.

Principle 2: Measurements must serve as indicators for deep-going causes

Why do companies exist and what makes them prevail? The essence of a company's success is its ability to concretize more or less abstract customer-demands. Hence, this should be the starting-point for all company activities. The value of a service organization should be based *solely* upon its ability to serve customers – and thereby satisfying their needs. Without true measurements, the success rate of this fundamental task – seen from the eyes of the receiver – can only be vaguely estimated. However, by establishing measurements based upon fulfilling customer needs, co-workers can adjust methods, attitudes and etc. to securing alignment with the former.

Principle 3: *The importance of integrating measurements into the system*

Very often the effect of improvement work does not prevail. Typically, external consultants are hired in order to help companies realizing their visions. However, when the consultants leave, the knowledge leaves with them. The company does not "own" the competence needed to maintain and develop improvement works which therefore – like the flower not watered – dies.

Preventing the above scenario from happening equals handing the measurements to the people working within the process. Ultimately, it is only them who can see to that implementations remains and develops.

3.5.3.3 Working towards a nominal value

Adequate knowledge about the customer-demands of a process is crucial for the adaptability of the latter. Furthermore, this knowledge must not be for executive eyes only, but rather apply to all employees. In turn, employees are enabled to adjust to- and handle demand fluctuations, instead of being confined by rigid goals.

Traditionally, the opinion within the manufacturing industry has been to measure production from certain standards of tolerance. Though, according to ideas sprung from the research of Genichi Taguchi, working against standards equals accepting fluctuations, and hence, accepting losing money. Instead, Taguchi introduced his ideas of establishing a nominal value and then continuously trying to reduce fluctuations around this. This will cause quality level to increase and costs to reduce. Hence, overdoing tasks are regarded just as bad as underachievement.

3.5.3.4 The Vanguard method

When comparing production and service, a difference in the "production" regarding the involvement of the customer can be noticed. In production the customer is separated from the production whereas in service, the customer is most often participating in the production. This causes a natural process variance. With this in mind, an understanding for these variances is necessary, when designing processes that can handle them. This can be achieved by: (Seddon, 2008)

- Studying customer demands in customer expressions.

- Separating true and false needs, i.e. true needs are demands for things customers actually need whereas false needs are needs occurring when the customer demand is not met or met in the wrong way.

- Understanding whether the demand can be predicted or not.

- Designing the service according to the needs of the customer.

- Changing the system (measurements, roles and other system factors) to remove the CaC-culture and replace them with the claim to lead work as a system.

3.5.3.5 Lean Performance Measurement

As Table 6 shows, a move away from traditional measures based on historical results towards more appropriate measures based on cause and prediction is something to strive for.

Table 6: Lean and traditional measurement (Stenzel, 2007)

	Historical	**Predictive**
Causal		Lean
Resultant	Traditional	

In *Lean Accounting* (Stenzel, 2007), a set of so-called "starter measures" are defined. These are divided into four naturally linked categories (Table 7). Thus, in order for strategic goals to be realized, these must be anchored in terms of strategic measures and then concretized even further when implemented as value stream- and process measures. Actually, breaking down and indoctrinate large and often abstract organizational goals into more tangible measures, adds to the fulfilling of the former. (Stenzel, 2007)

Table 7: Lean Performance Measurement Starter Set (Stenzel, 2007)

Strategic goals	**Strategic measures**	**Value Stream measures**	**Cell/Process measures**
Continuous improvement culture	Inventory days On-time delivery Customer satisfaction	On-time delivery Dock-to-dock time First time through	Day-by-the-hour production WIP-to-SWIP First time through

Value stream measures

If strategic goals and measures are an expression of an organization's operational targets, *value stream* measures how well these are converted into daily activities. In order to secure a culture of continuous improvements, these values are analyzed regularly (at best weekly).

1. On-time delivery measures the punctuality of the value stream, i.e. are products made at a satisfying rate responding to customer demand and is true customer value delivered?

2. Dock-to-dock time measures the time it takes for units to advance through the whole value stream process. Lean stresses the importance of effective flows and JIT delivering and this value reflects the effectiveness of both. It is derived from:

$$\frac{Average\ inventory\ level}{Daily\ average\ customer\ demand\ resources} = Dock - to -\ dock\ time$$

3. First-time-through quality measures the competence level of the value stream system, i.e. the percentage of parts or activities correctly performed the first time, without any rework needed.

Cell/Process measures

The challenge for the cell team is to keep harmonizing pace with customer demand. This can be obtained by using suitable standard work methods and kanban signals securing a pull cell flow. By implementing measures within the cell, problems preventing the above ambition from succeeding can be located and immediately dealt with by the value stream team. The cell/process measurement system is made up by four measures:

1. Day-by-the-hour reports are displayed on a board for all employees to see. These include amount of units that are to be produced each hour, statistical figures showing recent values of the former, possible problems that have arisen and consequently succeeding steps taken.

2. Work-in-process to standard work-in-process measures how well actual inventory levels stand against the ones strived for. I.e., the measure can be viewed as an indication of how well the kanban signal system is working – a result ratio of 1 equals perfect line of flow. If the result ratio exceeds 1, this means that units are being produced without the cell getting a kanban signal.

3. First-time-through quality is an implication of the cell's ability to do things right the first time. If the quality level of a certain process drops, the whole cell team stops working and engage in the problem solving.

Implementation

To minimize the risk of implementing non-operating measures, implementation can initially be made on just one process. If it proves successful; a broader can be conducted, and if not; measures are modified and re-implement.

According to Stenzel (2007), by following seven steps when implementing a new measure, people actually using Lean measurements are given a chance of improve and testing the same. Also, potential problems are crystallized before the measure is implemented in the rest of the organization.

1. By piloting the measure on the value stream and in just one process risks are reduced.

2. Does the measure in the starter set need to be tailored?

3. Make sure every employee is given proper information about the new measure and the philosophy behind it.

4. Design the Lean measure, measurement boards, data collection methods, and improvement methods.

5. Choose the value stream and process suitable, and make sure new measures and methods are tested.

6. Run the test for about a month. Focus on the measure's ability to provide feedback on the effectiveness of improvement and its ability to solve problems.

7. Review the tests, modify if necessary, retest and then implement on a broader level.

3.5.4 The Production Safety Matrix

The Production Safety Matrix (PSM) is a powerful tool sprung from traditional manufacturing, where it is important to keep very close track of how production time is spent. Whenever problems, production losses or freeze-ups occur, the underlying reason for the stoppage and the time spent to correct it is logged in the matrix. According to the PSM, all events negatively affecting the production performance are derived from three *result parameter categories*: (1) *quality parameters* (Q), (2) *standstill parameters* (S) and (3) *productivity parameters*. These three result parameter categories can be further broken down into various *factor groups*, providing a more precise problem explanation.

After having identified which problem are causing performance- or process disturbance and after having classified it using result parameters and factor groups, the estimated lost time, caused by the problem, is registered in the PSM. All PSM entries are then added together (rounded off to the nearest full hour) and the total time is logged as the result parameter- and factor group sum. In this way, overrepresented result parameters and factor groups are spotted and possibly investigated further. In a way, the PSM acts like a knowledge base, providing incitements for process development. (Ståhl, 2008)

Table 8: The PSM Matrix

YYYY-MM-DD - YYYY-MM-DD	Result parameters (hours)			
Factor groups (min)	**Quality parameters** $(Q_1, Q_2, Q_3, ..., Q_n)$	**Standstill parameters** $(S_1, S_2, S_3, ..., S_n)$	**Productivity parameters** $(P_1, P_2, P_3, ..., P_n)$	**Σ Factor group**
A: Equipment				
B: Information				
C: Process				
D: Personal & organization				
F: Remaining				
Σ Result parameters				

3.6   Visualization

By measuring alone, process performance improvements cannot be realized, much less prevail. Thus, communication is a very important aspect when striving towards excellence. This section accentuates the importance of accessibly communicating and visualizing performance and ambitions to the employees. It closes with a concretization of the concept - the Box Score tool.

3.6.1 Benefits of visualizing

Measurement by itself does not create a better performing organization - it is simply a tool for gaining better insight into how employees or processes perform. To be able to achieve higher performance, communication with the employees concerned is a must to allow them to get an insight in how they perform and what goals to strive for. (Bergman & Klefsjö, 2001) This is typically done by visualization, enabling employees to identify occurred problems and needs, helping them to perform better. Visualization can be done in multiple ways; two examples are white boards and stoplights displaying different colors (red, yellow, green) depending on the progress made. The main point is not the visualization technique used; the main point is to without further thought be able to interpret their meaning. (Liker, 2004) The purpose is for the concerned persons to easily and immediate get a picture of their performance, possible

problems occurring, the size of the problems and hopefully why they occur. (Kennedy & Widener, 2008)

Visualization is as stated above one of the main principles in the TPS and some of the tools being associated with Lean Production, like kanban and andon, are great examples of visualization and how it can be used to simplify and make work more efficient.

In a world that is more and more automated and information technology as well is becoming more and more used, the conditions for visualization are favorable. Visualization is though not about technology, it is about using the most appropriate way to communicate and work together. The best possible way to communicate should be chosen regardless of its technology level. Technology should indeed be used when appropriate, but should not be made a purpose of its own. As principle eight in "Toyota Way" states; "only use reliable and well-tried technology that fit co-workers and processes". (Liker, 2004)

Another example from Toyota regarding visualization, though in a more administrative environment, is their wish and rule to fit reports on an A3-sheet. This is because difficult and comprised problems need to be simplified, making it possible to make decisions fast and efficient. A detailed report containing lots of data and technical terms does not only take long time to go through, it is also hard to make a decision from, because of the thorough detail level. The solution is to use visualization, focus on the main points and exclude redundant information. (Liker, 2004) The problem of communicating too much information is a problem as big as not communicating any information at all.

Obeya, another great example also originating from Toyota, is Japanese for "big room" and has its origins from project work during product development at Toyota to improve communication between the different participants. Communication is therefore made through visualization of the information regarding time schedule, progress and milestones to be shared. This is done to secure the accomplishment of the project as well as to shorten the PDCA-cycle. (Shook & Marchwinski, 2008)

3.6.2 Box Score

One way for a value stream to visualize its performance is to use box score. A box score can visualize in two dimensions (operational and capacity), week by week, how the performance has been in the past, the present performance and the desired performance to be attained in the near future. The operational dimension shows performance indicators much like the ones presented in Table 9, while the capacity dimensions visualize the amount of time utilized in productive and non-productive activities as well as the available capacity. Finally, the financial dimension shows for example revenues and costs. The scope of freedom in choosing performance indicators for the operational and financial dimensions is wide. Depending on the unique circumstances, the set of performance measures should be chosen accordingly. (Maskell & Kennedy, 2007)

Table 9: Example of Box Score (Maskell & Kennedy, 2007)

	Last week	This week	Next week	Future state
Operational				
Units per person	25	28		35
On time shipment	94 %	92 %		98 %
First time thru	43 %	45 %		55 %
Dock-to-dock days	21	22		18
Capacity				
Productive	20 %	22 %		30 %
Non-productive	53 %	50 %		30 %
Available capacity	27 %	28 %		40 %

3.7   Managing change

Change can be both exiting and intimidating. Occasionally, change initiatives within organizations are met with skepticism, even active resistance. Yet, to keep up with the increasingly changeable world, managing change is absolute vital for organizational competitiveness. The following section presents theory aiming to maximize the chances of approaching this subject in the best way possible.

Whenever making changes it is important to get them right from the very beginning since resistance easily may occur if they are troublesome to implement and result in temporary short-term losses. This can prevent important changes with long-term gains from being made and create resistance against future changes. According to (Kotter, 1990) there are eight factors that are crucial to successful change. One main purpose is to create an understanding for the need of change, so that it is requested and welcomed by the affected persons. The other main purpose is to create guidance for the change and lead, as well as support the persons involved in the change. The last main purpose is to make sure that the change is maintained and valued.

- Establish a sense of urgency

- Create a powerful guiding coalition

- Create a vision and a strategy

- Communicate the vision

- Empower others to act on the vision

- Plan for and create short-term wins

- Consolidate improvements and still produce more changes

- Establish the change in the corporate culture

A second and more telling example of the various change phases originates from the blacksmith's working procedure (Ljungberg 2010):

- Warm – prepare the organization for change

- Bend – implement the change

- Cool – fulfill the change in the organization

Within TPS there is as earlier stated a characteristic principle for managing change; "*Make decisions slow and in consensus. Consider all alternatives and implement the chosen decision fast*". The way Toyota carries out decisions is very different compared to most other companies and it is equally important how a decision is made as how it looks. Taking time and effort to go through all possible solutions is a time-consuming effort that may seem to be wasting time but it also makes sure possible solutions that may prove very effective are not missed out on. Instead of making a fast decision and having to work on it to become effective, it is possible to make a slow and well thought-out decision that is possible to implement and make efficient fast. To make well thought-out decisions consists of 5 important principles. (Liker, 2004)

- Find out what really is happening, by seeing for yourself.

- Find the underlying reasons by asking "why" 5 times.

- Consider all alternatives and motivate in detail the solution you choose.

- Create consensus within the team, including employees and external partners.

- Use very effective communication to realize bullets 1-4.

4 Empirics

4.1 The Service Organization

This section aims at describing the Service Organization as a whole and how it is managed and followed up within different time frames. In addition to this, two concrete examples of daily management at the Service Organization are read up on.

As a part of the project "*A more efficient Service Organization*" various initiatives to become more efficient have been undertaken. Work to map important processes throughout the company has been done, but is still a task to be done at additional departments. Also steps have been taken to visualize and measure the daily performance of some departments, including Freight Invoices and HRSC, read up on further down. There is though no *thoroughgoing* daily management concept to be used at the different departments. The visualization and measuring is therefore tailored for the concerned departments and have been established independent of each other with no real uniformity. As a consequence, the measurements are not consolidated and analyzed on a level above the departments, *i.e. there is no merged result indicating the daily performance of the Service Organization.*

4.1.1 Follow-up of the Service Organization

The Service Organization's business steering is traditionally divided into three levels: strategic, tactical and operational. These are based on the time frame concerned, i.e., strategic steering concerns long-term goals, whereas tactical- and operational steering focuses on the ones in a closer future.

4.1.1.1 Strategic level

The overall strategy of the Service Organization is reviewed on a continual basis and there should always be a clear line between this and the KPIs used on an operational level. This as the KPIs makes the overall strategy more concrete. If a strategy modification is needed, it is implemented on an annual basis. The overall strategy of the Service Organization can be broken down into four main areas: service level, competence review, efficiency and health care.
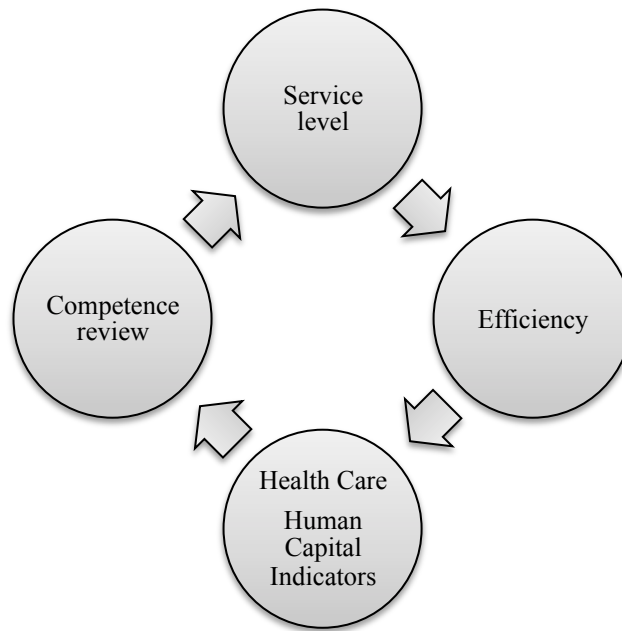
Figure 9: The strategic areas of the Service Organization

The ambition is that the result of all four strategy-areas should be followed up every other month. Though, some are just reviewed once every business year. Strategic decisions fall within the Service Organization's board of director's field of responsibility to handle and decide on. The board of directors is also responsible for following up every organizational function, analyzing their results and deciding on strategy modifications. Furthermore, they handle the more general business steering, defined in the strategic business plan "*The Service Organization year 1-5*" which is updated on an annual basis.

4.1.1.2 Operational level

The strategic- and tactical goals should naturally lead to operational ones. In turn, these should be incorporated in various KPIs. As a whole, the Service Organization does use several KPIs to follow up their business, but these are generally of a *financial* character and not always that easy to understand and to put in perspective. Though, exceptions including the human resources centre (HRSC) exist. (The Service Organization business steering version 1.0 2010)

4.1.2   Examples of daily management at the Service Organization

Two examples in quite different contexts, the Freight Inovices- and HRSC department, have implemented versions of what can be regarded as daily management. These two examples are read up on below, with the purpose of providing an insight into what daily management at the Service Organization can look like, and what gains and benefits that can be realized from it.

4.1.2.1 Freight Invoices

Freight Invoices is a department handling the transport invoices and is doing so on a global basis together with another office in Shanghai. One of the problems earlier occurring and source of the implementation used today was the irregular level of workload between the employees, where some were not able to finish a day's work, starting the next day with a backlog, and some having less work or even finishing the day's work before the day was off. This was due to the fact of *work specialization*, i.e., work divided up between the employees based on (1) supplier of transport or (2) the origin, i.e. the country, of the invoice. Since some type of work is more time-consuming than other, due to the fluctuating complexity level of the laws in different countries, the workload as well as the amount of invoices handled during one day differed heavily.

To cope with and handle the problems occurring, the department has introduced a *white board* to hold meetings at two times a day where *work is divided* and *eventual problems* along the way *discussed*. The invoices are prioritized into five levels where everybody should finish the first three levels before moving on to the last two. Once before noon and once in the afternoon the employees are assembled around the white board to see what progress is being made and where help is needed. If one employee, making more time-consuming invoices, is lagging behind, others can let go of their own work and make sure that the higher prioritized invoices gets done before proceeding to the lower prioritized ones. This arrangement and rule of prioritization has resulted in a more even workflow level, where backlog is nearly eliminated and work is done when the day is finished.

The implementation at Freight Invoices has been so successful that even further steps are to be taken in the near future. A *two-sided whiteboard* is due to replace the old one and in addition to the one side, which is displaying the work progress and the prioritization of invoices, the other side will display a handful of KPIs. The KPIs will be of various kinds but will be sorted into three main fields: quality, finance and productivity. The whiteboard will also have a separate field for facilitating change through the traditional PDCA cycle.

4.1.2.2 HRSC

HRSC is the human resource centre, which consists of a call centre where questions are responded to and orders are received from employees, local HR personnel and executives at any of the 18 enterprises, found under the same company umbrella in Sweden. Depending on the complexity of the errand, the HRSC personnel decide whether they can solve it by themselves or if it needs further processing by a specialist. To their help the call centre has chosen to use *TV screens to visualize* the call centre's performance but also to some extent subordinated specialist divisions of HRSC that are involved in the errands handling. The TV screen contains info such as calls collected on daily basis, the percentage of errands responded to within the agreed time limit to name a few. The errands are divided up, and also followed up, based on which area they concern where Payroll/PA is one and Pension & Insurance, Recruitment, Mobility are other examples. These figures are visualized through

absolute numbers as well as by charts and against posted objectives for all employees to see. The colors green and red are further used to show the performance in relation to the objectives set up.

4.2 Payroll and personnel administration

In this section the Service Organization department Payroll/PA is explained more thoroughly. Its main purpose and the departmental structure are read up on, together with the customer needs that need to be fulfilled. Furthermore, the workflow of the main Payroll/PA activities is declared. The section closes with stating which current departmental challenges that exist.

4.2.1 Payroll/PA as a business

The Service Organization sells/offers its services to different enterprises, found under the same company umbrella, around Sweden as a solutions package. Looking at salaries as an example, an enterprise can contact the Service Organization to buy the service from them. This is based on a voluntary choice, i.e. the company *does not have to buy* the particular service from the Service Organization, they could well turn to another provider if they find them satisfying their needs better. If they though choose the Service Organization to provide them the service, an agreement is reached between both parts. The service level agreement (SLA), stating what actual services to be included in the agreement and to what price, is though today not crystal clear. Therefore the responsibility situation is unclear, *and some of the enterprises use more resources and working hours without having to pay extra for these*.

Furthermore, price is considered the deciding factor for an agreement to be reached and yearly reductions of the price is a part of the agreement. The Service Organization is then responsible for providing the service agreed to the users, who demand quality, i.e. a service satisfying their particular needs and fulfilling their expectations of the service. *The separation of the customer ordering and agreeing the service agreement and the actual users* has also lead to confusion regarding what to be supplied. The customers are not aware of what the service agreement contains and what they actually can demand according to it. This in turn has resulted in a situation where Payroll/PA takes on providing services, which they are by the agreement not actually responsible for. The difference in preferences further makes it harder to satisfy the customer since the acquirer, as well as the user, needs to be satisfied with the provided service. Since the service agreement is incomplete, no clear guidelines regarding what the value proposal consists of and what exactly to be included exists. As a result the service agreement is not deeply rooted among the employees providing the service or among the customers buying it.
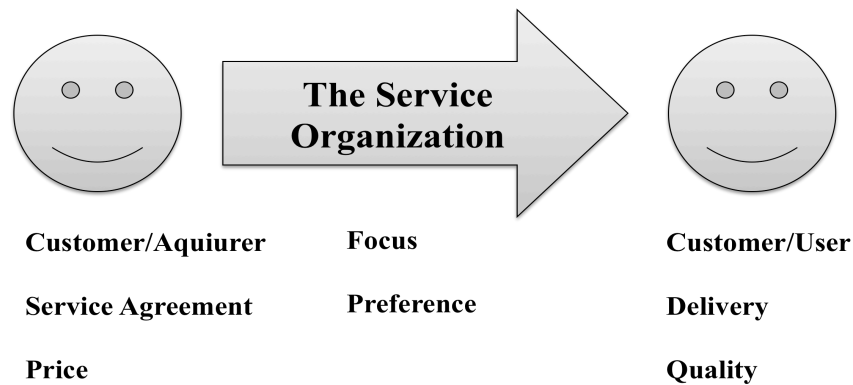
Customer/Aquiurer   Focus   Customer/User

Service Agreement   Preference   Delivery

Price   Quality

Figure 10: Transaction between customer and the Service Organization

4.2.2 Payroll/PA organization

Payroll/PA is, as the names states, responsible for the services "*Payroll*" and "*Personnel Administration*" and is a part of the Human Resources Service Centre (HRSC) at the Service Organization. Two processes, "*Salary Disbursement*" and "*Handling of Errands*", together make up for the vast majority of the work conducted in this department.

The employees working with salaries are basically divided into two groups, which are responsible for two different sectors: retail and non-retail. The department is divided according to this because of contracts differences depending on whether the employees work in the retail sector or the non-retail sector. Regardless of working with retail or non-retail there are two basic tasks to carry out but an employee only work within one particular team, exchange over the borders between the two teams does not occur. This is because of the previous mentioned contract difference, preventing an employee working with retail to work with non-retail and the other way around. The purpose of the two tasks carried out is to make sure that the salary is disbursed in the right amount, at the right time and to the right employee. In addition to this monthly occurring process, the department also serves as a central to continuously answer to errands and questions regarding salaries, employment contracts, vacation and etc.

Business supports are mostly involved in the time- and salary systems in use, and are the ones who have the deepest function knowledge. Therefore, they are often referred to as *super users*. Because of the internal systems used, which are read up on later, and the problems accompanied with it, the amount of business support employees is particular vast in comparison with other companies. Business support can be seen as a support function for the rest of the employees at Payroll/PA and handle all troubleshooting in the systems. Depending on the problem, its extent and complexity factor, business support determines whether they can solve the problem or if it is a task to be handled by the systems provider.
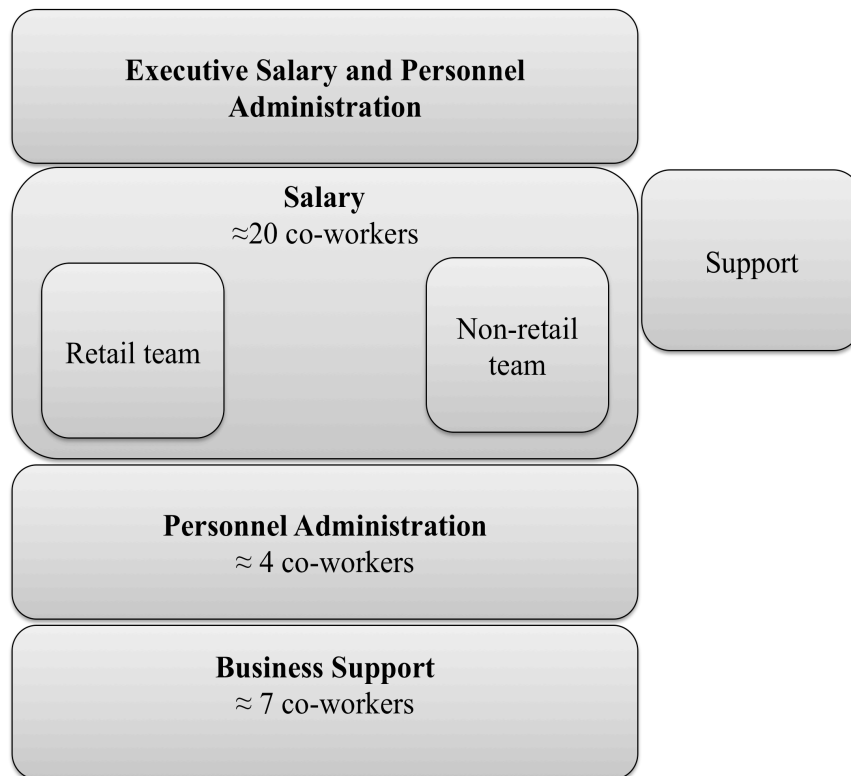
Figure 11: Schematic organizational structure of the Payroll/PA Department at the Service Organization

4.2.3 Payroll/PA workflow

As mentioned above, Payroll/PA carries out the salaries to all employees in the Swedish enterprises, today consisting of around 18 enterprises and their employees. In addition to salary disbursement, the department must handle errands regarding salaries and other HR related questions that come in through the human resources (HRSC) support call centre. The errands are of two types: (1) questions that are solved through a straightforward answer and (2) orders. The latter is really an order of a service, e.g. providing something more tangible in terms of documents etc. At the human resource support an operator decides whether it is possible for them to answer the questions immediately or whether it needs further handling at Payroll/PA where the employees have the specialist knowledge needed.

4.2.3.1 Salary disbursement

For the payroll process there are certain deadlines throughout the month that needs to be met. At times, these cause major variations in the workload, which ranges from around 120% at tops to below 100% when the workload is low. To manage these variations, it would be suitable to either lower the total workload or shifting workload from the tops to times where it is less or even below normal. The department is right now on a trial, utilizing a sort of flow scheme to follow the work progress during the month. The most important deadlines are visualized and as they pass by they get marked either with green or red, depending on if they

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were finished in time or not. The order of the tasks to be done is though not entirely uniform among employees, following it from the top and downwards is not always the case. The employees have picked up different ways of conducting their work and therefore have different routines. This flow scheme is a reactive way to in hindsight identify problems that occur and draw experiences from these occurrences, but also to highlight what is prioritized and has to be done at this very moment. The purpose of doing so is to prevent co-occurrences of similar problems by surfacing them and thereafter searching for solutions.

The Payroll/PA workload further fluctuates severely between different employees, due to the fact that for example the number of salaries handled varies from employee to employee. This is partly down to differences in complexity and partly down to the absence of a standard way of conducting work, different employees conduct their work in different ways and sharing of best-practice knowledge is lacking. Employees also tend to spend a varied amount of time on proofreading, making sure that they have not done any mistakes even though it might not be needed. Another problem that also contributes to the fluctuating workload is that some employees tend to be very focused on their part of work, i.e. "their" salaries, and would rather like to avoid group responsibility and focus all their effort on their own workspace. This is cemented since work is divided in terms of the size of the 18 Swedish enterprises concerned. A single salary specialist handles the smaller ones and larger ones are handled and divided between two or several employees. This holds true month after month, the same salary specialist handles the same enterprises. When employees are missing though, due to sickness, vacation and etc. their salaries are divided and portioned on the remaining employees. Every salary specialist therefore generally has an amount of what can be seen as "his or her" salaries. A further problem accompanied with this is the lack of real customer orientation; the focus rather tends to be on "my workspace" than on satisfying customer needs. This could perhaps be a remnant from a superior policy stating that the parent company only has one customer, i.e. the customer buying the parent company's products. The customers of the Service Organization have therefore been seen as "users" rather than customers, which may have contributed to the lack of focus regarding customer orientation and satisfaction.

NÄR	AKTIVITET	Enterprise 1	Enterprise 2	Enterprise 3	Enterprise 4	Enterprise 5	Enterprise 6	Enterprise 7	Enterprise 8	Enterprise 9	Enterprise 10	Enterprise 11	Enterprise 12	Enterprise 13	Enterprise 14	Enterprise 15	Enterprise 16	Enterprise 17	Enterprise 18	LÖPANDE AKTIVITETER
Inför export PT	Avslut																			Ärenden
	Ev. spärra långtidssjuka som har lön innevarande månad																			Anmälan FK
	Rapport: branschvana																			Anmälan AFA
	Rapport: tidpunktsbevakning																			Anställningskontrakt PT/GV
	Rapport: älder																			Avslut PT
	Rapport: anställningstidstillägg																			Post (sorteras in i underlag att göra)
	EXPORT PERSONEC TIME																			Sätt in underlag i pärmar istället för att
Inför lönkörning 1	Rapport: sjuklista																			lägga på varandras skrivbord
	Errorlogg																			
	Slutlön																			
	Kontroll av långstidsfrånvaro																			
	Övriga underlag																			
	LÖNEKÖRNING 1																			
Inför lönkörning 2	Bocka underlag																			
	Rapport: timlön vid deltidsmånadslön																			
	Rapport: restid																			
	Rapport: flextid																			
	Rapport: skulder																			
	Rapport: nettolöner																			
	Rapport: semester																			
	Ev. kvarvarande underlag och simulering av dessa lönespecar/bocka underlag																			
	LÖNEKÖRNING 2																			
Efter lönekörning2/ före löneutbetalning	Bocka underlag?? Ska detta vara med efter 2:a körning?																			
	Gottskriv de som bytt S0 till S2 + skicka ut brev																			
	Klara underlag föregående månad till avräkningsunderlag																			
	Klara underlag innevarande månad till klara underlag föregående månad																			
	Flytta lediga "flikar" i pärmen till kommande månad																			
	Insortering till arkiv/kontraktspärmar etc.																			
	LÖNEUTBETALNING																			

Figure 12: Payroll flow scheme

4.2.3.2 Errands handling

The errands are the number one priority and the employees are expected to have a look in their inbox for errands the first they do when they come to work and immediately get at them when they enter during the day. Except for the errands that are official and come in through Human Resources it does occur that "unofficial" errands arrive in the employee inbox, for example customers that have earlier been in contact with a certain person at Payroll/PA and therefore uses that channel again to communicate their *new* need instead of going through the HR call centre. By doing so, no errand is created in the case handling system and it becomes an "unofficial" errand that is not formally registered in the system. It also upsets the way of prioritizing, since these errands make their way past the ones waiting in queue. This is something that should not exist, and result in that the true amount of errands is higher than the official numbers. Another problem that occurs is that the errand specification is sometimes inadequate, forcing Payroll/PA to bounce the errand back to get adequate information. This is something almost exclusively done by mail, and hence, the loop between the customer and the responsible employee is repeated several times before the errand specification is completed.

Errands are forwarded to the salary specialist responsible for the enterprise that the errand concerns. Therefore, it is often an extensive task to identify the responsible salary specialist that handles the salaries for the particular employee. Some employees can thereby, in worst case, have an abundance of errands to deal with while others have none. The underlying reason for this is to be able to gain knowledge advantages regarding certain special areas, i.e. not having to invent the wheel over and over again.

It is to some extent today possible to measure what could be thought of as quality since statistics on the number of errands regarding incorrect payments before and after disbursement of salary are followed per month. This is done on an enterprise level and classified depending on whether HRSC or the enterprise concerned is responsible for the arisen incorrectness. Even though the customer probably will not care one bit about departmental responsibility, it provides the possibility of determining the origin of the incorrectness. This makes it possible to through discussion and arrangements find and eliminate the root cause. This type of cooperation between the enterprise and Payroll/PA is something desirable since Payroll/PA are heavily dependent on the enterprise and will bear all the responsibility against the customer. The number of errands is truly not numerous compared to the number of salaries; in February 2011 there were around 55 errands before disbursement and around 110 after disbursement, most of them originating from the enterprises. (HRSC Statistics Feb 2011) But what is an acceptable level, and how many salaries that are incorrect in total is still unclear since each errand can consist of many salary corrections. The statistics that exist are not made available to all employees today, only to whom they are considered as particularly useful.

Each month there are approximately 4000-5000 Payroll/PA related errands entering the call centre. As an example, in February 2011 there were 4026 errands, consisting of 1290 questions and 2736 orders. The questions are more likely to be answered by the support personnel and are rightly so, in February 2011, 907 of the questions were answered by the

support whereas 383 questions were forwarded to Payroll/PA. The orders are in larger extension forwarded to Payroll/PA, taking care of 2348 orders while HRSC manage 388 of the orders. (HRSC Statistics Feb 2011)
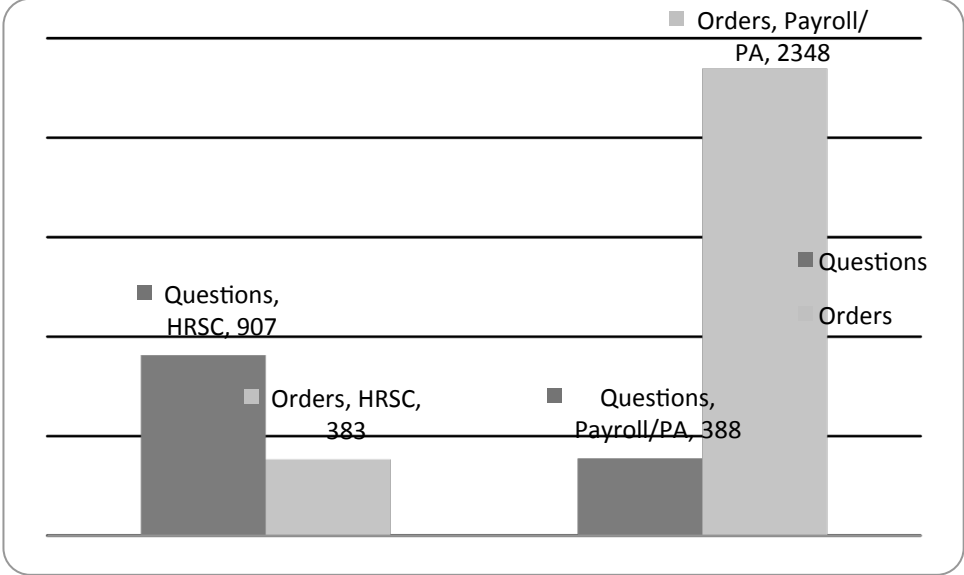

Figure 13: Distribution of errands February 2011

4.2.3.3 Process for handling errands

The process of handling errands is described on the next page according to the SIPOC methodology. The process starts with the existence of a *customer need* communicated by the customer. When the customer calls or mails in the errand he or she is set in contact with the HR support, which is the main function sitting first in line. The employee receiving the call then makes a choice whether it is an errand he or she can answer straight away, or if it is something to be handled by a specialist function, e.g. a salary specialist. An errand is either way created in the case handling system. This to secure the document of the question or order, before answering it or, if needed, forwarding it to an appropriate specialist. The errand is further appointed with a priority depending on what type of errand it is. The priority reaches from 1-3, where 1 is the most urgent and 3 is the least urgent. Errands with priority 1 are to be solved within 4 hours, priority 2 within 2 days and priority 3 within 5 days. In addition there also is priority 4 where the time limit is set manually. If the specialist assigned to a particular errand feels that the information about the errand is inadequate he or she should contact the customer for further details and try to solve the errand from there. But as the process map on the next page illustrates with the crosshatched arrows between "Analyze errand" – "Contact customer" – "Handle errands" this is not always the standard procedure. As mentioned earlier, what often happens is that errands, arriving by mail, are bounced several times between customer and the specialist, due to misunderstandings and/or an inadequate specification. I.e. the specialist tries to figure out what is asked for and delivers an answer, which may or may
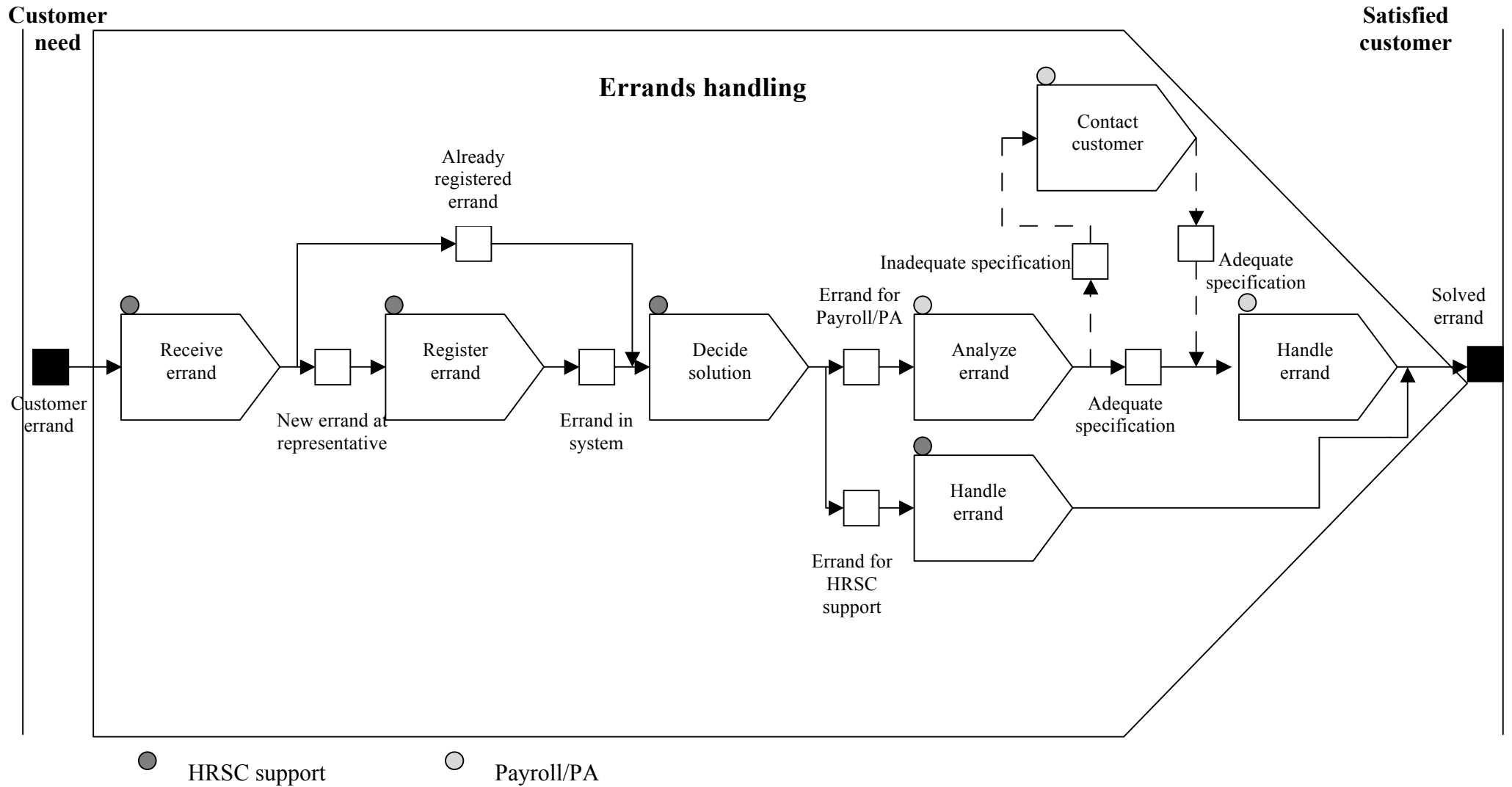
not be adequate. Among leaders there seems to be a consensus that the phone should be picked up more often, in order to get the right information and get things right from the first time. When responded to, the errand is put in a list of "solved errands" and can only be activated again if the customer has further questions, or if he/she feels that the errand is not solved. In this case the errand is again put on the HRSC table and goes to the same procedure again.

Table 10: SIPOC methodology

Suppliers	Inputs	Process	Outputs	Customers
Employees	Orders	**Handling errands**	Engagement letter	Employees
Local HR			Holiday application and	Local HR
Executives			etc.	Executives
	Questions		Straightforward answers	

4.2.3.4 Payroll process

The process for disbursing salaries is, due to its length and extent, much more complex and unintelligible for an unversed and from an outside perspective. It is therefore not read up on here more extensively than what the flow scheme earlier showed. It would simply be a thesis itself to illustrate and explain all sub processes that make up the monthly process.

Customer need

Satisfied customer

Errands handling

Contact customer

Already registered errand

Inadequate specification

Adequate specification

Errand for Payroll/PA

Solved errand

Receive errand

Register errand

Decide solution

Analyze errand

Handle errand

New errand at representative

Errand in system

Adequate specification

Customer errand

Handle errand

Errand for HRSC support

● HRSC support   ○ Payroll/PA

4.2.4 Challenges within Payroll/PA

The Payroll/PA department is in great need of having its including tasks, *defined*, *standardized* and *stabilized*. Furthermore, the current process structure provides few or no indications of the daily performance. Improvement work and workload leveling are therefore difficult activities to manage, due to uncertainties concerning both how the implementation should be managed and how the result of the same should be interpreted.

4.2.4.1 Customer value

Another challenge is of course securing that the service offer provided by Payroll/PA provides a high level of customer value. As earlier mentioned, the main activities to perform, and hence, the main customer needs to fulfill, are (1) *making sure that the right person gets paid the right amount at the right date* and (2) *handling incoming HR support and non-salary related errands*. As Payroll/PA is a service department, and therefore has to handle relatively large demand and expectation fluctuations, further customer needs include treating and communicating with every customer in a way that minimizes misunderstandings and maximizes the level of customization.

4.2.4.2 Customer feedback

The Service Organization performs a customer satisfaction review once every year. The review respondents are co-workers, working in other enterprises. The review result is divided into one section for each of the Service Organization's departments, and one further section in which all departmental results are compiled, providing an overview of the Service Organization as a whole. Apart from this, the review questions are of two types. The first type consists of various statements that are answered by putting a cross by one of five fixed answer alternatives: "*positive*" (4-5) "*neutral*" (3) and "*negative*" (1-2). Besides these alternatives the respondents can also choose to answer "*do not know*". When the review has been answered the results from this section is put together and presented in percentage form (questions answered with "*do not know*" are read up on separately). The second and final review question is a conclusive open question. As the thesis case concerns the Payroll/PA process, and partly, the HR support process (both part of the HRSC department) the focus is on how HRSC is viewed and valued by the Service Organization's customer. Payroll/PA is the single largest part of HRSC, and therefore the results are likely to originate from its performance. The following numbers and statistics are based upon the last review, concerning the year 2010.

Customer satisfaction review results: HRSC

Comparing the customer satisfaction review results for the Service Organization as a whole versus HRSC, it is noticed that the scores are consistently lower for HR support (see

Appendix C). The question causing the largest discrepancy between the Service Organization and HRSC is the one reviewing their ability to take *initiatives/be proactive*. Here, the result for HRSC is made up from 26% *"positive"*- (4-5), 33% *"neutral"*- (3) and 41% *"negative"* (1-2) reviews. This should be compared to the corresponding the Service Organization result, consisting of 48% *"positive"*- (4-5), 28% *"neutral"*- (3) and 24% *"negative"* reviews. Obviously, the customers do not think that HRSC way of operating is enterprising or proactive. It can also be noticed that out of the respondents answering the question whether the Service Organization or HRSC *"is competitive compared to other alternatives"*, 66% of the respondents answered *"do not know"* when reviewing HRSC's ability, compared with only 26% for the Service Organization.

When studying the gap between customers opinions versus HRSC co-workers own opinions regarding their abilities, the HRSC co-workers tend to value their abilities higher than what the users do *(see Appendix B)*. The statement causing the largest gap: *"is available when ever needed"*, reaches 70 points on a scale from 1-100 when answered by the HRSC co-workers, but only 50 points when answered by the users. There are just two statements differing from the rest: *"understand correct from the beginning"* reaching 52 points when answered by the HRSC co-workers and 56 points when answered by the customers and *"takes initiatives/are proactive"* reaching the same 26 points for both groups. (Customer review HRSC 2010)

4.2.4.3 Employee feedback

At the present time, *VOICE*, the Service Organization co-worker satisfaction review, is performed on an annual basis. Hence, interpreting the result and taking appropriate action to cope with eventual customer criticism are not easy tasks to deal with, due to the long time interval between implementation and feedback. Just like the customer satisfaction review, the VOICE review is divided into various sections, one for every department of the Service Organization. Once again the focus will be on HRSC's result.

VOICE result: HRSC

The last VOICE result arrived in February 2011 and passes for 2010. The section concerning HRSC is made up by 21 questions. The first 20 are statement questions for the respondents to regard and answer, i.e., putting a cross by the most corresponding out of five fixed answering alternatives. Out of these questions, a few stand out. When regarding the statement *"In our department we have access to a lot of efficient and helpful resources"*, only 16% gave a positive answer. Furthermore, merely 21% thinks that *"Within my department we always choose the most cost efficient way of working"*, barely 25% agrees that *"Within my department things happens fast after decisions have been made"* and only 28% thinks that *"Within my department the job scheduling is managed in a good way"*. The ending question is of a different sort, asking the respondents to state whether any significant efficiency obstacles exist at their workplace, and if so, to mention the three most major of these. As the

result shows, the "*IT system*" is the most frequently occurring obstacle, mentioned by as many as 66% of the respondents, followed by "*poor work routines*" (32%) and "*a too high workload level*" (27%). (VOICE Male-Female HRSC 2011)

4.2.4.4 Internal systems

Global View

As implicated by the VOICE result, HRSC, and hence, Payroll/PA has been, and is still, contained within an in many ways insufficient IT-system, *Global View*. In the present situation, about one third of the Payroll/PA problems are, according to consulting business PricewaterhouseCoopers, derived from it. The remaining problems are due to either insufficient process design or an unclear organizational structure. Global View was implemented as a pilot project on Swedish enterprises in the fall of 2009 and is now, after almost two years of underachievement, up for a re-implementation. This time it has been suggested that the initial project activities should be *evaluating* and *developing* the actual processes, i.e. defining, standardizing and stabilizing them. Thereafter the actual system should be improved. By doing things in this order, hopefully well-developed processes are dressed in a furthering and customized system.

5   Analysis

5.1   Customer needs

Customer needs are the ground every business idea should be built upon and the fulfilling of these is absolute necessary in order to secure long-term survival. An understanding of all customer needs is therefore essential, when trying to understand how a business is operating. Hence, this opening analysis chapter is devoted for them.

All activities within a company should be sprung from the same simple question: *which customer needs are we here to satisfy*? This is, according to many, particularly true for service companies, since the service/product and its quality is created together with the customer and sprung only from this interaction. Within traditional production the quality and experience can be heavily influenced by the physical quality, i.e. the quality of the product can be produced in advance and stocked and is to a greater extent determined by the manufacturing process rather than the interaction between customer and producer. This is of course only true to some extent since the customer-supplier relationship also is of high importance to traditional manufacturers, but there is just as well a substantial difference. Without this insight the risk of missing the target, i.e. delivering a final service that somehow leaves the customer feeling unsatisfied, is imminent. Hence, having an inside-out customer perspective is absolute crucial for long-term survival in service industry. It is a fundamental condition that simply has to be met. It does not matter if a company's internal structure is the best and most effective one on the market, if the customer needs have not been correctly identified it is all in vain. Hitting the target with a homemade slingshot is therefore always better than missing it with a shiny rifle.

Payroll/PA has two general customer needs two satisfy: (1) making sure that the right person gets paid the right amount at the right date, and (2) handling incoming HRSC support and non-salary errands. Hence, no matter which decisions are being made or which activities are being performed within the department, these two needs should *always* remain top-of-mind.

5.1.1   Apparent Payroll/PA customer preferences

Having correctly identified the customer needs of an organization, all its internal activities can be classified into one of three categories: *value adding*, *non-value adding* and *waste*. Thereafter, the task is as simple as it is difficult. The value adding activities should be *maximized*, the non-value adding activities should be *minimized* and the waste activities
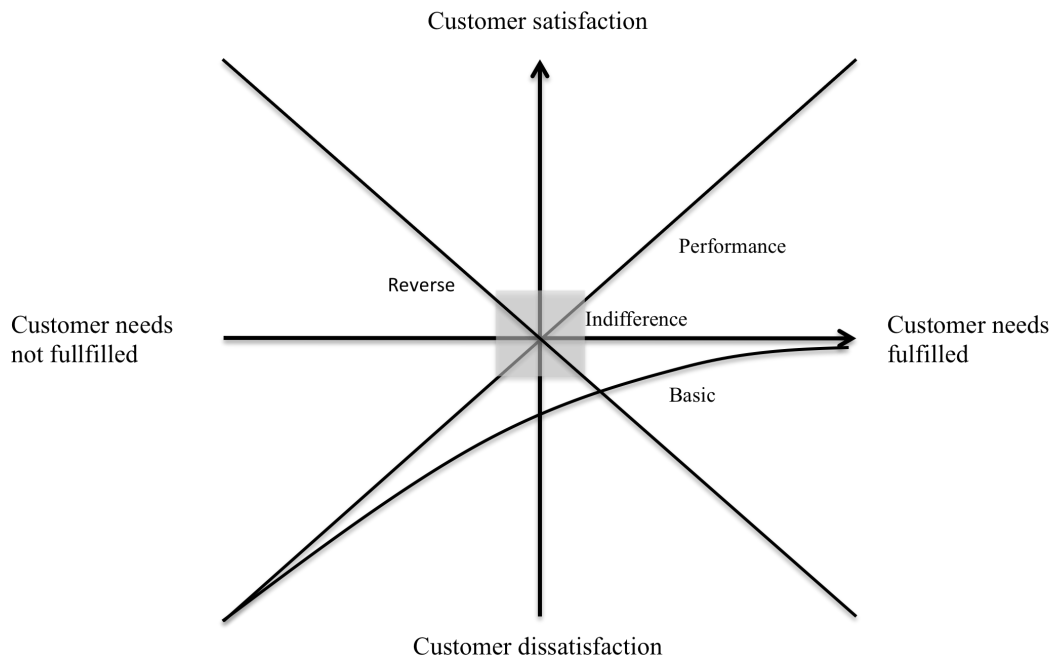
should be *eliminated*. Hence, it is very important that the various Payroll/PA activities are correctly classified. In connection to this, as the customer value included services and features differs, it is also important that the customer *preferences* are adequately understood.

Activities contributing to fulfilling the first customer need, i.e. making sure that the right person gets paid the right amount at the right date, are indeed of a value-adding kind. Though, the fulfillment of this customer need is almost completely taken for granted by the Payroll/PA customer. He or she *expects* nothing else but for this to be perfectly included in the value offer. Consequently these activities can, according to the KANO model, be considered as *must-be* quality attributes. Hence, if the activities are included in the value-offer, they add to the fulfillment of a customer *need*, but they do not increase the *customer satisfaction level*. Though, if excluded from the value-offer, they *negatively* impact the level of the latter.

All activities aiming at satisfying the second customer need, handling incoming HR support and non-salary errands, are indeed also value-adding ones. Satisfying this need also bring about both customer *contact* and customer *feedback*, and is hence what really defines the appreciation of the service offer from the customer perspective. Therefore, in order to remain *the natural selection when a customer realizes she/he has a question or problem,* Payroll/PA must focus on securing that the HR support errands are handled in the best way possible. Hence, these activities can be categorized as *one-dimensional performance based* quality attributes, i.e., their performance level affects both the customer need fulfillment level and the customer satisfaction level.

Being a service department, Payroll/PA customer demands and expectation are fluctuating. Hence, another value adding activity category, is the one securing that every *customer is treated and communicated with in a way that minimizes misunderstandings and maximizes the level of customization*. It is important that both a customer seeking a simple solution, as well as one seeking a more advanced one, are equally satisfied. Solving a HR support errand in an unnecessarily extensive way, adding features or facts not asked for by the customer can hence have a reverse effect on both the customer need fulfillment level and the customer satisfaction level. Therefore, activities belonging in this category are, according to the KANO model, considered as *reverse* quality attributes.

As mentioned earlier, one of the major challenges within the Payroll/PA department is *defining*, *standardizing* and *stabilizing* its ingoing processes. Furthermore, these challenges cannot be mastered without a well-functioning administrative system, clear and effective internal procedures, routines and etc., setting up the conditions for the processes to run and to achieve full potential. Activities that fall within this category, i.e., implementing and maintaining a well-functioning IT-system, standardizing work routines and reports etc., indirect add to the customer need fulfillment level and the customer satisfaction level. Though, when laid bare, *they do not*. Hence they should be categorized as *indifferent* quality attributes.

Customer satisfaction

Performance

Reverse

Customer needs
not fullfilled

Indifference

Customer needs
fulfilled

Basic

Customer dissatisfaction

Customer preferences

Performance attribute:	*Handling incoming HR support matters*
Basic attributes:	*Making sure that the right person gets paid the right amount at the right date*
Reverse attribute:	*Solving HR support matters in an unnecessarily complex way, adding features or facts not asked for by the customer*
Indifference attributes:	*Managing the administrative system, developing and managing routines and internal procedures etc.*

Figure 14: Apparent Payroll/PA customer preferences

5.1.2   Implicit Payroll/PA customer preferences

As indicated in the 2010 HRSC customer satisfaction review result, taking initiatives and being proactive are activities not performing that well within the Payroll/PA department. Before discussing actions to address this problem, the current situation, causing it to arise in the first place, must be explained.

Lack of customer focus is a major concern within the Payroll/PA department. The reason for this can primarily be derived from *insufficient processes*, giving rise to frequently emerging internal burnouts (i.e. waste-, non-value activities) for the employees to put out. This, in turn, prevents them from engaging in activities that fulfill customer needs and/or deliver customer satisfaction *(i.e. value-adding activities)*. The employees simply cannot reach the surface interface, which stops them from directly attending incoming customer needs. Instead, they are covered in activities and problems emerging from internal processes.
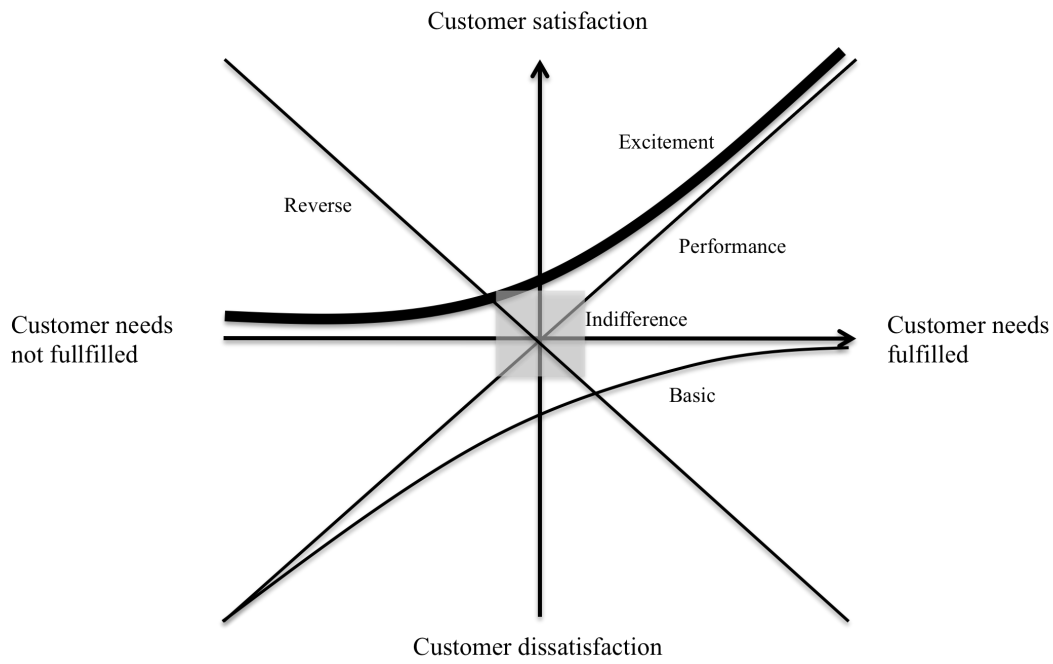
This difficulty can be illustrated by picturing the departmental processes as a boat, the employees as the boat's crew and the customers as passengers in need of being transferred

over a lake, from point A to point B. If using a leaking boat, which forces the crew to constantly scoop water to keep it from sinking, the time left for performing value-adding activities - viz. the *actual rowing* - dramatically decreases. Therefore true processes are a must; in order to maximize the time spent on value-adding activities.

Then, what if the processes where actually re-designed into working flawlessly? Could the time freed up really be used for something else, besides satisfying the earlier mentioned apparent Payroll/PA customer needs, i.e. (1) making sure that the right person gets paid the right amount at the right date and (2) handling incoming HR support and non-salary errands? Furthermore, is it really *possible* to identify other *implicit* customer needs that are not expected and much less communicated by the customer?

If returning again to the Payroll/PA lack of customer focus and the customer satisfaction review result indicating a low level of proactive and initiative services. Putting these two variables together, an underlying link can be scent. If improving the departmental processes, the time freed up could instead be used, not only to improve the fulfillment of the department's two apparent customer needs, but also for including value-offer activities that are of a *proactive* kind. As these activities are *unexpected* by the customer, *they do not decrease the customer need fulfillment level nor customer satisfaction level* if excluded from the value-offer, but if included they have the potential of *raising the customer satisfaction to levels not attainable by performing only the current value offer activities*. These characteristics make them *excitement* quality attributes according to the KANO model.

When implementing not-explicitly-asked-for services, some employees might think that this is just a way of creating additional and unnecessary workload. Hence, comments like: *"Oh, why did we inform the customers about this? Now the phones will never stop ringing. Besides, I have some paperwork to be done!"* could be expected. In order to get pass this initial skepticism, there must be e clear consensus among *all* employees about what the Payroll/PA department is really about – viz. *satisfying customer needs*. If these activities increase the customer need fulfillment level and the customer satisfaction level, then why should they not be included in the value offer? Hence, comments like the above indicate that the right *mind-set* has not yet been established. The key to solving this is *communication* and *education*. All the underlying reasons for implementing additional value-offer activities must be read up on. The employees must be given the chance of truly understanding that this in the end will benefit not only the customer, but also themselves. Besides, some discrepancy between Payroll/PA executives and co-workers can always be expected, when it comes to fully understanding and feeling enthusiastic towards a departmental change. This because of one single variable, separating the two groups: *time*. Sometimes, ideas need time and reflection in order to gain acceptance. When the mind have had some time to get used to the idea, its benefits are obvious. Therefore, when the executives present an idea to the co-workers, they should be aware of that the latter group has not yet gone through this curve of acceptance. Hence, they are initially blocked from realizing its potential and are instead more worried about the change itself and about leaving their comfort zone.

Customer satisfaction

Excitement

Reverse

Performance

Customer needs
not fullfilled

Indifference

Customer needs
fulfilled

Basic

Customer dissatisfaction

Customer preferences	
Excitement attribute:	Taking initiatives and being proactive

Figure 15: Implicit Payroll/PA customer preferences

5.2   Standardizing

After having successfully identified the customer needs of the processes, Payroll/PA must standardize their processes, in order to obtain stable and predictable ones. Furthermore, standardizing makes it possible to define "normal" levels, and hence, makes it easier to find, explain and solve deviations causing low-level process performance. But which specific departmental actions are then needed, in order to accomplish a sufficient standardization level?

5.2.1   Customer information input channel standardization

When handling both Payroll- and HR support errands, the Payroll/PA department often has to re-contact the customer, asking for additional information. Unfortunately, true processes are of little help when the customer information input, required to fulfill customer needs and provide customer satisfaction, is both *unstandardized* and often also *insufficient*. These circumstances are both time-consuming and frustrating and can trigger a sense of resignation among employees as they, in a sense, have to start on minus. It is also not unusual that complementing customer information requires several phone- or email loops, before all the customer information has been gathered, and the *actual* process activities can begin. Consequently, this is affects the Payroll/PA end result.

Instead of accepting this situation as it is, Payroll/PA must actively strive to reach the customer, and explain the value of having a standardized customer information input channel. In order to enthuse the customer, it is important that the *customer benefits of this change are well communicated*. The customer must realize that in the end she/he will receive better and more efficient Payroll/PA services. Hence, when trying to standardize the customer information input channel one must, as always, see things from the eyes of the customer. Is it difficult to know what kind of information is expected? Furthermore, is there perhaps a discrepancy between what the customer thinks Payroll/PA can and should do and what is actually possible?

5.2.2   Work standardization

Initiating processes with standardized customer information input is a great starting point for Payroll/PA. Then again, in order to benefit from this, it is important that the various department work-tasks are *defined* and *standardized*. Actually, without standardized work-tasks it very difficult for employees to fill in for each other and to provide a stable service that continuously delivers the same result to all customers. It also creates a more even workload level among the employees, which in addition enables them to learn things from one and other. One should also know that the work standardization development is a continual activity, as best way of working is only true for a certain amount of time and is constantly

evolving. Furthermore, it lies on the employee responsibility to come up with and spread the best way of working.

A telling example of standardization would be to imagine two employees, *John* and *Pete,* performing the same process activities. *John* has worked in the department for seven years, whereas *Pete* started just one year ago. In spite of this, *Pete* is performing his activities both *faster* and more *accurate* than *John*. *How can this be explained?* It is rarely as simple as *Pete* being brighter and/or more educated than *John*. Instead, the solution is often found when looking closer at the different work methods. Sometimes an employee has gotten used to a method that is unnecessary complex and circumstantial to perform. Furthermore, the reason that *John* adopted this inferior method in the first place, is perhaps that a colleague introduced it to him, or that the he simply was not given any proper method introduction at all, forcing him to come up with his own way of doing things. As time passed by, changing this method, i.e. asking for help with defining a true one, was not easy to do due to the possibility of looking foolish or incompetent.
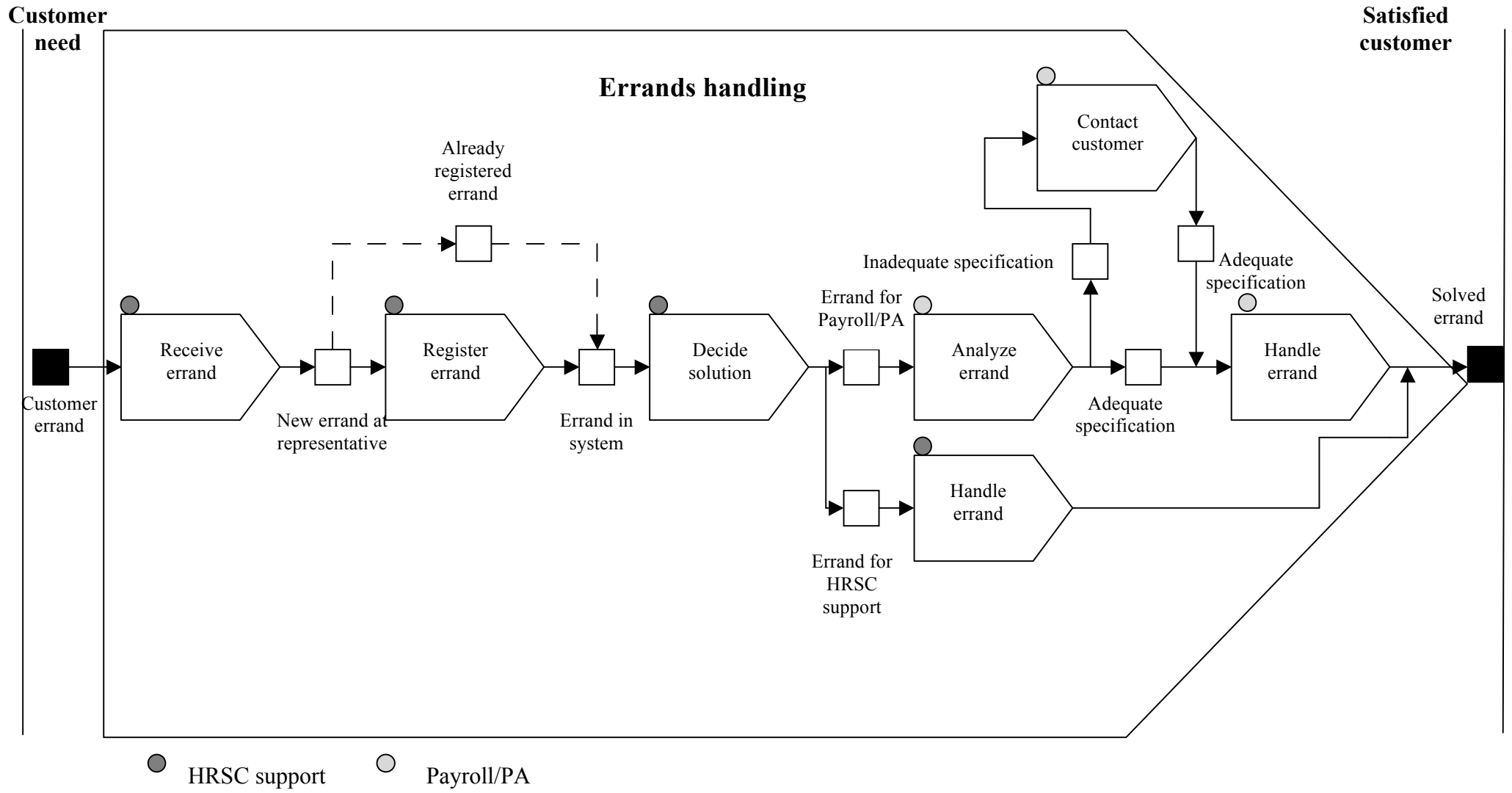
To avoid scenarios like the above from happening, it is very important that all employees have access to *official methods* or *guidelines* that they can adapt and practice. Besides, new employees must from the beginning be introduced to the best way of working, as it is so much harder to change old habits.

As Payroll is a very sensitive process, it is of highest importance that the end result is delivered correctly and on time. Therefore, the process has a great need of being under surveillance during the time elapsed, so that deviations from the planned work can be discovered and adjusted. In order to be able to follow-up and keep track of the progress being made, it is consequently essential to do the different process steps in an *agreed order*. Otherwise follow-up is useless, as it would impossible to create an adequate overview of the process state. Further the process steps must be chronological and performed in the same order by everybody. Only then can deviations be detected and given certain attention and support. Doing this makes it much easier for employees to fill-in for each other and creates a situation in which workload leveling will be more possible to utilize. (Liker 2004) In the present situation, various work methods makes it hard for employees to fill in for each other, even though they are basically performing the same tasks. Individual methods are often hard to quickly understand, which confines the ability of conducting workload leveling in an effective way. Thus, if an employee is on a sick leave or is for another reason suddenly unable to attend work, it can be hard for the other colleagues to quickly take over his or her duties. It is also true that standardized work contributes to closing the gap between the service quality specification and management's perception of consumer expectation. (Zeithaml 1988)

It is important that negative feelings - initially felt by many employees when asked to expose, compare and perhaps change their work methods - are replaced by a positive and supporting atmosphere. Mistakes must be allowed and even regarded as improvement possibilities. Therefore, if and when emphasizing individual performance, it should always be on those performing particularly well. This creates positive examples for the employees to follow.

Performances not reaching their goals should *never* be exposed in any way, but instead be carefully dealt with, perhaps during a private conversation between the executive and the employee. During this conversation, the focus should not be on the negative, but instead on suggestions and ideas that can improve the employee's performance.

In order to become more customer oriented and provide higher quality in terms of a higher right-from-the-first-time frequency when handling errands there is in many cases a need for more and better customer input. Management supports this approach and one arrangement to cope with this is to a larger extent pick up the phone and collecting the adequate specification instead of trying to figure out what the customer actually request. As can be seen in the process map below there are two differences compared with the process map found in the empirics. These are consisting of a standard procedure where the customer is contacted whenever vagueness occurs and an alternative procedure, where already registered errands go through the whole process again. The first-named is illustrated through the here continuous line between "Analyze errand" – "Contact customer" – "Handle errand". By solving more errands right from the first time the alternative procedure is to be used as an exception and is therefore crosshatched between "Receive errand" and "Decide solution".

Errands handling

Customer need

Satisfied customer

Already registered errand

Contact customer

Inadequate specification

Errand for Payroll/PA

Adequate specification

Solved errand

Receive errand

Register errand

Decide solution

Analyze errand

Handle errand

Customer errand

New errand at representative

Errand in system

Adequate specification

Handle errand

Errand for HRSC support

● HRSC support   ○ Payroll/PA

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5.3 Measuring and follow-up

After having (1) successfully identified the customer needs and (2) having standardized all processes furthering, the next step is (3) developing and implementing true ways of measuring process performance, as these enables much better process performance monitoring. Further, knowing how the business actually performs provides the possibility of identifying areas for improvement and establishing future goals and ideal performance levels. The alternative is to steer on intuition or gut feeling, or more likely, to fumble in the dark.

5.3.1 Daily follow up

In the current situation there is a need for many of the Service Organization's departments to gain deeper insight into their performance level. Though, some departments have already made great progress within this area while others are still in the dark. The ones having utilized the possibility of daily follow-up are good examples of how daily follow-up can improve the performance and the employee work situation.

Payroll/PA and its sensitive services is an excellent example of processes in which there is a great need of having better control of the short-term performance level. Even though there today exists a basic flow scheme, showing the progress being made, there is still a need for more extensive short-term follow-up. This visualization is totally in line with what Liker (2004) states as *"Use visual control so that no problems are hidden"* As always, there is though much room for improvement. Moving from a reactive- to a *proactive* daily management, measuring customer satisfaction more frequent than on a yearly basis, is one important example. Therefore, Payroll/PA is in obvious need of being followed-up in a more frequent and informative way.

Further, the lack of follow up can cause not only confusion regarding what to do and prioritize, but is also creating needless stress through unawareness. This can result in inequality among the employees, with some taking on a greater amount of work compared to others to get things done. With frequent follow-up, best practices can more easily be discovered since it is possible to distinguish what activities create value, and hence, a good result, and which that do not. Without proper follow-up, the team leaders also lack the possibility to put their finger on what actually needs to be done and where effort has to be put, making their leadership more blunt than desired. By using appropriate follow-up it should be possible to create, not only an environment in which internal performance is improved by knowing what to strive for, but also where customer focus is established, stress is reduced, best practices

discovered and implemented, prioritization possible and equality among employees is existing.

It is of highest importance that the daily follow-up is used with good intentions and that it stresses the parts performing well, instead of only focusing on the ones not reaching the established goals. The obvious daily follow-up goal, should be creating a curiosity among the employees rather than question their performance. In turn, this leads to a learning environment in which best practices and continual improvements are continuously spread among the employees. It should also be emphasized that this can be used as a tool for the employees, when trying to reach established goals. This vouches for creating greater group belonging, where the employees *together* are responsible for their improvements and where exchange of knowledge is naturally occurring.

5.3.2 Feedback

5.3.2.1 Feedback loops

As long feedback loops make it hard to lay bare single variables and specific correlations – they are often hard to analyze. Further, it can be hard to distinguish what are actually sustaining problems and what is temporary "noise", arising from non-persistent occurrences. Long feedback loops not only implies a substantial risk of carrying out decisions based on very specific and time-limited ground, but also makes it very hard to see the results of the same decisions. In turn, this situation eliminates the possibility of a daily follow-up resulting in smaller adjustments based on the short-term development.

When making long-term strategic decisions, these conditions must, to some degree, be accepted. Being aware of risk-return relationship, carefully evaluating all relevant alternatives and etc. are both important elements, when striving for a successful strategic decision-making. *In contrast to this,* a successful operational decision-making, call for tools enabling a short feedback-loop. Using these the aim is, iteratively, adjusted until perfection is reached.

Apart from this, there is a need for all Payroll/PA employees to easily gain knowledge on how their department is performing. Especially, continual feedback indicating customer satisfaction is very important to visualize and communicate in an easy and direct manner. Hence, annually asking the customers how they experience and value the services provided by Payroll/PA simply is not enough. It must be easier for customers to communicate their experiences. Furthermore, long and comprising surveys, taking half an hour to fill out and, besides this, having misleading scales not only creates a lot of work preparing and executes, it also discourages customers from doing them. A customer survey needs questions that are *precise* and *excluding* for the respondent as well as results that are understandable for the employees concerned.

The selection of measurements to use and communicate to concerned employees must be done in a thoughtful and exhaustive way since what ultimately is chosen to be measured also dictates what is going to be improved and which path to follow.

5.3.2.2 Quality

Quality can be defined in many ways including technical and experienced quality, durability and etc. The apprehension of quality in service is mostly of a traditional character and focuses on the capacity of delivering flawless service where the customer gets satisfied the very first time and has no reason to be dissatisfied and come back with the very same errand for further handling, right from the first time should be the rule. In addition, the personal treatment received during the interaction also determines the experienced quality of the service, how it is performed also matters. If not delivered right from the first time the quality is inadequate but there is still a possibility to get things right by correcting and providing the service again in a fast and effective manner. Human errors can often be overlooked if they are corrected fast, a quality loss through not getting it right the first time can probably be compensated through doing a professional solution the second time. In some cases, the overall experience could certainly be positive even though things were not right the first time. There is an acceptance to human errors and there is still a possibility for the provider of the service to make a positive impression on the customer by correcting the errors professionally. The focus should though, to highest possible extent, be on delivering the service right from the first time, discouraging imperfect services. There is only one single chance in the service industry to provide the customer what he or she wants, it is not possible to determine the quality of the service on beforehand and produce in advance. Therefore it is of highest importance to provide the service with highest possible quality. By measuring quality and setting goals to attain it also contributes to closing the second gap according to Zeithaml (1988), consisting of the difference between management perception of consumer expectations and service quality specifications. As well does the technology-job fit, to be found between the employees and Global View, decide the size of the third gap between service quality specification and the service actually delivered.

5.3.2.3 Trustworthiness

Trustworthiness is another attribute that surely is regarded as essential by customers, they need to be able to trust their supplier and know that they deliver what they promise. The only way to know if what is agreed actually is delivered is to follow it up and make sure that the level is high enough. Trustworthiness is today followed up to some extension through the HR support. Errands at all functions under the HRSC umbrella, including Payroll/PA, are followed up to make sure that the errands are attended and responded to within the agreed time limit. Errands answered to within

the time limit are marked as green while errands that have past their time limit are marked as red.

5.3.2.4 Availability

Availability is a measure aiming at providing insight into how available a department is to their customer and their needs. It is measured as the amount of time, units etc. in proportion to the total time that is spent on carrying out services valued by the customer. By doing so, it is also possible to gain insight into how much time is being spent on carrying out services not actually valued by the customer and get a consciousness among the employees where their working hours actually are used. This is today not followed up in any way, how time is spent is knowledge only available to every employee separately.

5.3.3 Measuring system development

When approaching the challenge of establishing a Payroll/PA measuring system, a couple of unique conditions need to be regarded. First of all, as mentioned earlier the department has two main customer needs to fulfill: (1) make sure that the right person gets paid the right amount at the right date and (2) handle incoming HR support and non-salary errands. Hence, the department produces two types of final products: (A) disbursed salaries and (B) solved HR support non-salary errands. These two products are the output of the Payroll/PA process. Furthermore, producing these two products require various resources. Of course monetary- and technical resources are needed in order to create the basic conditions for the process to run. These include IT-systems, premises, stationery and etc. *Human resources* are though the single most important process input. Hence, organizing and using these in the best way possible is the main focus when developing a Payroll/PA daily measuring system. Figure 16 emphasizes this approach.
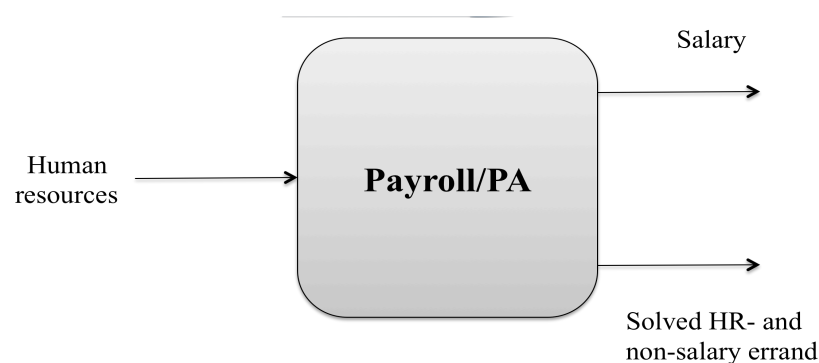

Figure 16: Payroll/PA output and most important input

As earlier illustrated using the KANO model, there are some clear differences between how the two final Payroll/PA products are received and valued by the customer (see section *5.1 Customer needs*). In addition to these, the "salary disbursement" is a *highly repeatable* and *less customer-involving* process, while the "solved HR and non-salary support errand production" is *less repeatable* and *more customer involving*. Figure 17 illustrates these differences. Hence, a measuring system indicating the customer's perception of the errand handling performance should be used as a complement to the salary disbursement measuring system.
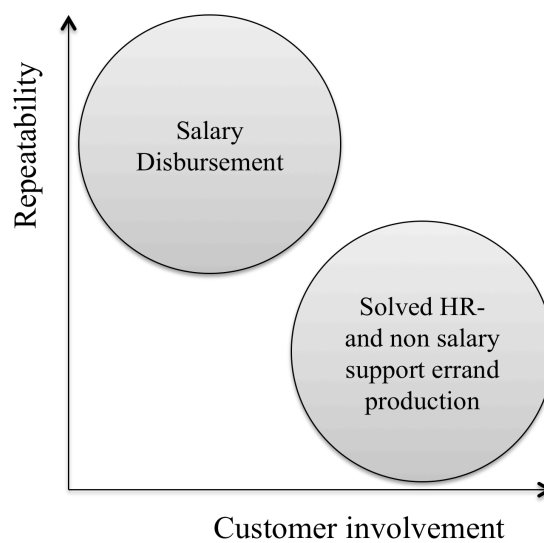

Figure 17: Repeatability- and customer involvement level of the two Payroll/PA production types

5.3.3.1 Customer satisfaction

Customer satisfaction is most properly measured during the *actual interface activities* between the customer and the Service Organization, i.e., during the process of handling incoming HR errands. It is during this short "meeting" between customer and supplier that value and satisfaction is both created and experienced. These activities should therefore provide this in the best way possible. Hence, this customer interface is the most logical occasion for measuring customer satisfaction. Furthermore, this could be done immediately without any time passing by between the actual interaction and the arriving customer feedback. In turn, this eliminates the need of having customers with exceptional memory. Instead, the response is immediate and not clouded by other similar experiences and etc. According to Zeithaml (1988) market research also contributes to closing the first gap between consumer expectations and management's perception of consumer expectations.

Using immediate customer response does not only result in short feedback loops, it also expresses a true interest for analyzing the customer's experience and wishes. A shorter feedback loop creates significant opportunities for the employees to take appropriate action and get to the very core of the underlying reasons. This is true for good as well as poor performance and should be equally emphasized, when performing at a very high level the reasons, i.e. best practices, should be identified and understood. When performing below par it should as well be identified what causes that creates the occurred problems and disorder and thereafter what can be done to eliminate or avoid them.

5.3.3.2 Internal performance measuring and error searching

In order to be able to measure and follow up the performance within areas like quality and availability there must be data or information available to derive the KPI's from. The most available and understood type of data is time; something everybody gets in touch with everyday and easily can be attained. Time is further the most appropriate way of measuring the actual workload since different problems take various amounts of time to correct. Taking incorrect salaries as an example, some might take half an hour to solve while others take five hours. The data does not tell the whole story about the problems occurred. In this case it is not appropriate to measure the quality loss in units of incorrect salaries, as the workload to correct them differs substantially. It is today not properly addressed how much time incorrect salaries disbursed take up and whether some enterprises has particularly comprising problems.

Collecting and merging time can be done by anybody within the process and can easily be put in relation to the time available totally in terms of working hours. When problems occur in terms of rework (quality losses), process and system failures it is possible to collect the time lost and set into proportion of the total productive time available. This could be done in combination with error searching where the occurred problems are listed according to type. It is thereby not only possible to measure the performance but also identify and surface the most often occurring problems. Including this will transform the measuring system into a more proactive one, providing the possibility of analyzing arisen problems, and hence, *preventing* them from occurring again. The routine is made up by two steps: (1) finding out and documenting which underlying problem is (2) correcting this. Consequently, a *learning* and *continuously improving* organizational culture is established.

5.3.3.3 Employee feedback

Equally important to customer feedback and objective performance measuring is getting continuous feedback from employees working in the concerned environment. Often, these have well developed senses and can as well as objective measurements

pick up and notice when problems occur. Internal effectiveness are extremely useful to measure in certain areas of high importance but are also limited to these areas only whereas employees have a much broader view on how work is proceeding. One should neither underestimate the value of picking up small problems as much as large problems, which probably have fast and simple solutions. Many small problems together can create great value and synergy effects where one plus one does not equal two.

Further, measuring employee feedback is critical to make them feel participating and that management values their opinions. It is after all the employees that are the vast majority and work on a daily basis in the area followed up. To get a sustaining improvement it is also important that the employees are participating in using the feedback to create solutions. The objective should be for the "leaders" to be seen as facilitators, lowering the risk for the implementation to be time limited, diminishing as time goes on.

6 Conclusions

6.1 Daily management

In order to conduct work effectively and create customer satisfaction it is important to have management support and ways of working that promote this. What is communicated is also picked up by the employees and below are therefore general conclusions regarding management presented.

6.1.1 How to be proactive and enterprising

The above discussion found in 5.1 is made up from two basic ideas: (1) there is an implicit customer need for including proactive and initiative activities in the Payroll/PA value offer, and (2) these so-called excitement quality attributes can fulfill implicit customer needs, and hence, improve the customer satisfaction to levels otherwise impossible to reach. In this section, focus turns to analyzing exactly what are the types of activities?

6.1.1.1 External proactivity - Be anticipating and *care* about the customer

Payroll/PA should always *care* for the customer. This statement is as simple as it is difficult to always keep top-of-mind. It is obvious that an active customer should receive the best service possible. But does it have to end there? Is this the only contact-area between the customer and the department? If so, then for the absolute majority of time, the two units are totally separated. Thus, if breaking free from this traditionally, and somewhat passive attitude, one realizes there is more potential not being fully used. The customer caring should go on constantly, though mainly in a proactive form, reaching out to the customer offering guidance expertise and true support. As being proactive does prevent future problems from occurring this, in turn, would most likely decrease the amount of some incoming HR support errands. Hence, activities like these can have a major impact on the overall customer satisfaction level.

To actively inform and remind customers about upcoming events or deadlines (concerning e.g. vacation days, hourly rates, taxation issues, compensatory leave, parental leave and etc.) will most certainly have a preventive impact. This information is appropriately transmitted through channels like intranets, email or local/internal magazines. Furthermore, services of an even more guiding and personal kind could be offered. Like discussing how to best share parent's days or getting back from a longer

sick leave. The information push should never feel intrusive to the customer, but at the same time not be hard to reach. It is also important that a culture, furthering proactive attitudes, is established in Payroll/PA.

The concept of providing caring and proactive services could be taken even further. For instance, imagine a total Payroll/PA solution offering free and professional economic consulting on both work related- *as well as* on errands concerning the customer's private economy. Though, the primary purpose of a suggestion like this is not considering it in particular, but rather to *initiate a thought process about what more Payroll/PA services might be offered to the customer, if having a correct mind-set enabling total customer focus.*

Another part of being proactive would embrace to establish a clearer Service Level Agreement stating what actually is to be delivered at the price paid. A more available and clear SLA would eliminate the risk for customers to be dissatisfied because of not being able to get the service asked for. With an unclear SLA there is certainly a risk for the customer to feel unaccomodated since nothing states what services they actually can claim and not. Questions like *"Why is it not possible for me to get this service?"* would easily be answered with *"Because it is not in the SLA and you have not paid for it"*. In the long run this will vouch for a situation where the enterprises to a larger extent pay for the actual amount of work carried out by the Service Organization. If you ask for services not stated in the SLA, you simply have to pay extra for the additional work carried out. Simply put, a more fair system would be established where each enterprise to larger extent carries its resource utilization. This would probably also cause more of a self-awareness among the enterprises and an urge to go through what services that actually and truly are needed for their functions. This could in turn mean a lower amount of work that might be unnecessary for the Service Organization and not actually providing any value to the customer.

6.1.1.2 Internal proactivity within daily management

The flow scheme today used at Payroll/PA is of a reactive kind where the activity fields are white until they are finished and green or until the deadline has passed and they are red. By then it is already too late to adjust to the progress made by helping each other out and past the deadline. When the deadline has past the fields are red and it is only possible to learn from it towards the occasion occurs the next month again. Adding a third color in form of yellow/orange to be utilized for fields where the progress to be made is insecure in combination with a daily meeting between the employees would add a bit of proactivity to the daily management. A short meeting at the beginning of the day at the whiteboard, when everybody have got a feeling of the days tasks, could be used as a forum for ventilating progress. If anybody feels that problems to meet the day's tasks may occur, orange should be used as a sign to highlight where help might be needed.

6.1.2 Proposed flow scheme changes

As well as the implementation of the proactivity feature of having *yellow*/*orange* it is desirable to add the *deadline dates* to the flow scheme, creating better support for new as well as temporary employees who are yet not as into their positions as the more experienced employees. This would certainly also cement the chronological order to be followed throughout the process, eliminating deviating ways of conducting work. The deadlines simply set the rules for which order to be followed, if one activity is to be finished at a certain date, employees have to adjust their ways of working and comply with the established way. This requires, as read up on further ahead in this thesis, a determined and best order of conducting different activities. Likewise, some of the continuously running errands, which make up the vast majority of work carried out by the employees, would be appropriate to add to the flow scheme. Notifications to "Försäkringskassan" for example, are to be carried out on Mondays every week and are today not followed up or documented as done in binders; it is simply down to the responsible employee to make sure it is done in time. A reoccurring activity like this one, where no documentation exist on whether done or not would certainly benefit from being visualized. Would someone be on a sick leave it is easily understood whether the notifications to "Försäkringskassan" this week are done or not. Other activities of this reoccurring kind and with no clear visualization of being done or not would also benefit from being visualized with the according deadline.

Enterprise		AKTIVITET	Enterprise 1-18	LÖPANDE AKTIVITETER
Inför export PT	2011-08-07	Avslut		Ärenden
	2011-08-07	**Anmälan till FK**		Anmälan FK
	2011-08-08	Ev. spärra långtidssjuka som har lön innevarande månad		Anmälan AFA
	2011-08-10	Rapport: branschvana		Anställningskontrakt PT/GV
	2011-08-10	Rapport: tidpunktsbevakning		Avslut PT
	2011-08-10	Rapport: ålder		Post (sorteras in i underlag att göra)
	2011-08-10	Rapport: anställningstidstillägg		Sätt in underlag i pärmar istället för att
	2011-08-10	**EXPORT PERSONEC TIME**		lägga på varandras skrivbord
Inför lönkörning 1	2011-08-11	Rapport: sjuklista		
	2011-08-11	Errorlogg		
	2011-08-12	Slutlön		
	2011-08-13	Kontroll av långtidsfrånvaro		
	2011-08-13	Övriga underlag		
	2011-08-14	**Anmälan till FK**		
	2011-08-14	**LÖNEKÖRNING 1**		
Inför lönkörning 2	2011-08-15	Bocka underlag		
	2011-08-15	Rapport: timlön vid deltidsmånadslön		
	2011-08-15	Rapport: restid		
	2011-08-15	Rapport: flextid		
	2011-08-15	Rapport: skulder		
	2011-08-15	Rapport: nettolöner		
	2011-08-15	Rapport: semester		
	2011-08-16	Ev. kvarvarande underlag och simulering av dessa lönespecar/bocka underlag		
	2011-08-16	**LÖNEKÖRNING 2**		
Efter lönekörning2/ före löneutbetalning	2011-08-17	Bocka underlag?? Ska detta vara med efter 2:a körning?		
	2011-08-17	Gottskriv de som bytt S0 till S2 + skicka ut brev		
	2011-08-18	Klara underlag föregående månad till avräkningsunderlag		
	2011-08-18	Klara underlag innevarande månad till klara underlag föregående månad		
	2011-08-19	Flytta lediga "flikar" i pärmen till kommande månad		
	2011-08-20	Insortering till arkiv/kontraktspärmar etc.		
	2011-08-20	**LÖNEUTBETALNING**		
	2011-08-21	**Anmälan till FK**		
	2011-08-28	**Anmälan till FK**		

Figure 18: Proposed changes and new flow scheme

6.1.3 Standardization

6.1.3.1 Standardize the information input channel

Establishing an even more standardized customer information input channel is something desirable and attainable. It can for example be achieved by to a larger extent use active web formularies, for the customer to fill in regarding his or her errand. In some cases it might be possible to utilize the customer even more, like with Internet banking, to complete some tasks by themselves that today go through HRSC. Both these proposals would lower the workload for both Payroll/PA and HRSC, allowing time to be freed up and utilized at being more proactive. These formularies should be designed in such a way that they immediately object if any vital information is missing. In accordance to the Poka Yoka philosophy - only one way of doing things is allowed to exist. Furthermore, this way of doing things should be almost impossible to misunderstand, and hence, be very *intuitive*.

Another tendency, contributing to the difficulty of actualizing a stabile and standardized customer information input channel, are customers allowed to skip the line, i.e., entering through an alternative process input channel - for example emailing or phoning an acquaintance working at the department in Payroll/PA. Naturally, it can sometimes be very hard to say no when someone you know asks for a favor - it is human nature. But crassly put, agreeing to do this does not solely satisfy the person asking for the favor; it simultaneously dissatisfies all customers having to wait longer in line. Sometimes you just have to say "No", in order to say "Yes". Therefore, one might think that the only way of preventing the above scenario from happen, is by introducing a zero tolerance departmental culture, or more exactly, a process system making it impossible for customers to take short cuts, i.e., entering through alternative process channels. Consequently, by doing this, employees are in no way reflected badly upon when explaining to the customer that they simply cannot perform the favor asked for. *"Sorry, but the system makes it impossible for me to let you skip the line"*. Though, it is not quite that simple.

Securing that all employees are paid the right amount at the right date is of course a very sensitive activity. To deny late arriving errands of this kind from being processed, simply because they are late arriving, is not acceptable, if resulting in employees not receiving their correct salary. *The individual employee should, if possible, never be affected.* Therefore, instead of applying a zero tolerance attitude, a dialogue between Payroll/PA and the other enterprises should be established that explains and emphasizes which dates are crucial for Payroll/PA to function correctly. This is totally in line with what Liker states as "Respect your suppliers by helping them". (Liker 2004) For example, this is something that could be done by comparing and discussing departmental GANTT-schemes, illustrating various crucial dates. Again, proactivity is something that could prevent these types of problems from

occurring. The service level agreement could here also serve as an important document, stating responsibility from both parts. The enterprises must deliver the needed information at the right time to be able to get their services done by Payroll/PA. If they still do not deliver in time, perhaps settlement has to be a part because of the extra work that has to be carried out and the increased risk for incorrectness carried by Payroll/PA.

The other main Payroll/PA activity, handling incoming HR support non-salary errands, is though less sensitive in its form. Here, incitements for applying a zero tolerance attitude are more realistic, as all employees should be treated as equal. Therefore, it is important to secure that the HR support queuing system is fair and democratic in its form.
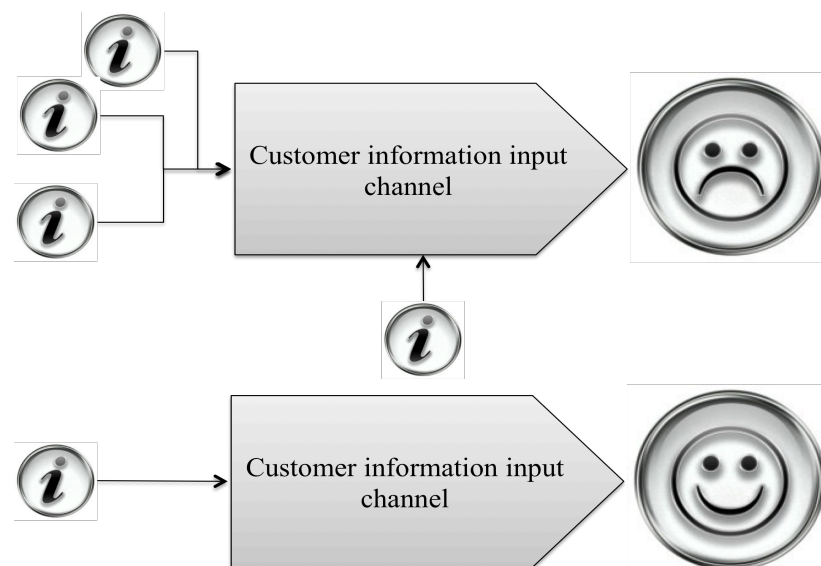
Figure 19: Unstandardized and multi-entrance customer information input channel *(upper process)***, compared to a standardized and single-entrance one** *(lower process).*

6.1.3.2 Standardized ways of working

There are a few ways for Payroll/Salary to secure having standardized work-tasks. To begin with, the most appropriate order of conducting the different process steps must be identified and visualized on the flow scheme. This will create a more reviewable process where progress can easily be followed and adjusted for. Furthermore, all Payroll/PA positions should be correctly described in an easily accessible document. In this, areas of responsibility, routines, methods and etc. should be specified with an appropriate accurateness. Besides, employees should learn from each other. This can be achieved by allocating time for workshops or meetings in which the employees share ideas and knowledge. Also, the "two-man-rule" should be fully practiced, i.e., critical work operations should always be performed in the presence of at least one

additional and authorized employee. Though, initial actions have been taken to establish this method in the department, its implementation is far from perfect.

It is probably, on long-term, also desirable to modify the distribution of errands where the specialist(s) handling the particular enterprise always get the errands concerning "their" enterprise. From a Lean perspective it would be much more appropriate to have a large pile where the specialists always takes the topmost errand and thereby creating more of a one-piece flow. This eliminates the risk for uneven distribution of errands where some have none and others have "stock" as well as the problems accompanied with absenteeism when others have to step in and handle the absent persons errands. It simply creates an improved flow, more even workload and surfaces problems that may exist. In addition the employees get a more diversified job and an opportunity to learn how to handle a wider variety of tasks. It should though be noted that this calls for a large management restructuring and should be carefully be prepared for.

6.2 Key performance indicators

In order to be able to follow the performance of a department it is, after the variables to measure are decided, necessary to collect the data needed to calculate the KPI's to be visualized. How this is done along with how to calculate the KPI's is read up on below.

6.2.1 Production Safety Matrix

Table 11 illustrates how the PSM, adjusted to fit the Service Organization salary disbursement process, could look like at the end of a specific time period. Note that all problem- and time entries are fictional and in no way reflecting the actual Service Organization's salary disbursement process today.

Our proposal is for this to be a subsequent addition to the flow scheme currently on trial. As the employees get used to visualize their work and experience the benefits from it, this should be the next step. Going straight into this methodology could prove a too big transformation in one leap. Though, going from filling out the flow scheme to filling out the PSM matrix should not provide such a leap and consequently be easier to accept.

The PSM Matrix should be filled out during one week and then be exchanged for a new one. The data collected from it should then be analyzed and used to calculate the KPI's read up on further down. It will thus be possible to get weekly performance feedback in form of measurements of quality and availability.

Table 11: Payroll/PA process PSM

2011-08-11 - 2011-08-16	Result parameters (minutes)		
Factor groups (min)	Quality parameters ($Q_1, Q_2, Q_3, …, Q_n$)	Standstill parameters ($S_1, S_2, S_3, …, S_n$)	Σ Factor group
A: Equipment			
A_1: Computer breakdown		100	**100**
A_2: System breakdown		240	**240**
A_3: System limitations		150	**150**
B: Information			
B_1: Late arriving input information			
B_2: Wrong input information	140		**140**
C: Process			
C_2: Rework	1000		
C_3: Error when handing over information			
D: Personal & organization			
D_4: Employees in meetings		3000	**3000**
D_5: Employees on education		500	**500**
F: Remaining		50	**50**
Σ Result parameters	**1140**	**4040**	**4180**

As can be noted in *Table 11*, the most frequent occurring result parameter in this example, "Standstill parameters" (67 hours), constitutes around 64% of the time

caused by upcoming production process problems. Furthermore, the most frequent factor group, "D_4: Employees in meetings", cause 50 additional process hours. Although it is important to notice that *even if meetings are indeed necessary and bring about long-term overall problem reduction*, it can be good to know approximately how much time are being spent on these.

When an upcoming process problem is registered in the PSM, it is accompanied with the *current date* and a possibility for the employee logging the problem to comment on the same. *Table 12* shows an example of how a PSM log entry could look like.

Table 12: PSM log entry example

Log entry: 2011-08-18, 14:51		
Result parameter	**Factor group**	**Lost production time**
Quality parameter	C_2: Rework	1 hour
Comment	Incorrect salary disbursement. The salary specification had to be corrected and the disbursement had to be redone. This procedure took approximately one hour to conduct.	

6.2.2 Quality

The quality dimension of the payroll process could easily be attained from the PSM matrix if filled in consequently by the employees whenever problems or re-work occurs. Whenever somebody has to conduct work because of earlier inadequate work the matrix is used as a document of the occurring situation. When the time spent on correcting earlier work and other quality related occurrences is summarized and divided with the total amount of working hours spent during the current period of time (day, week or month). This amount of total working time should be easy to calculate, from time systems or manually, knowing the amount of employees and the amount of working hours each and one of them has attended. Thereby a percentage of how much time quality losses in proportion to the whole make up is attained.

$$\left(1 - \frac{\sum Quality\ parameter\ time}{Total\ working\ time\ available}\right) * 100 = Quality\ (\%)$$

As mentioned by Seddon (2010) it is possible to make a distinction between false and true needs, where the goal is to eliminate the first-named and focus on the true needs. In the process for handling errands false needs come into existence when errands not are solved and the customer has to come back for further service. This is as mentioned

before not desirable, the errands should to larger extent be solved the first time the customer sends/calls in his/her errand. By using more direct contact, by phone, with the customer and acquire adequate information this is achievable. To encourage a behavior where more errands are solved the first time the customer comes in it is appropriate to measure to what extent errands are solved the first time. This will highlight to what extent this is done today and the importance of improving, vouching for more customer contact. I.e. what is measured and focused on gets done. One way of measuring this would be to measure how many errands during one week that goes through the process directly without needing further handling during one week. Since there is no system support to measure this today it might be appropriate to look into the possibility to ask the customer whether the response received was sufficient or not to solve their issue.

6.2.3 Availability

As important as quality is to measure and follow-up the availability of the Payroll/PA department is too. The KPI availability gives a view on how available the employees are to attend the customer needs. The PSM matrix is, like with quality, here used to calculate the KPI. By filling in the occurrences, during the time period examined, that have caused the work to stand still and dividing it with the total time gives a percentage of how available the department is to attending customer needs and creating value.

$$\left(1 - \frac{\sum Standstill\ parameter\ time}{/Total\ working\ time\ available}\right) * 100 = Availability\ (\%)$$

6.2.4 Customer feedback

To complete the range of KPI's there is further a need for measuring the customer's experience. Measuring internal performance does simply not tell the whole story, especially not within services. The feedback should be brief and encourage the customers to answer. A long and comprising formulary should be avoided and instead focus should be on a few points of high importance. More extensive and deep-going surveys or interviews could though be used as complementary tools, for example to attain root-causes for certain occurrences, with longer time intervals between the measuring occasions.

Depending on the errand concerned (question or order), different approaches are needed. For orders there are often two contact points between customer and the employee at Payroll/PA. First, there is the contact when the customer calls, and here the most appropriate thing would be to measure the treatment received. At the second

contact point, i.e. when the errand is responded to, it is appropriate to measure the quality of the performed service, i.e. the customer satisfaction of the solution. This would at best iron out if the customer got his or her errand solved in the right way. The first part of the questionnaire below would appropriately be conducted straight after the errand is submitted and received at the HRSC call centre. The second part should thereafter be sent out when the errand has been attended to. If the errand concerns a question, the whole questionnaire is carried out at once.

Table 13: Possible questionnaire

	Question	Agree	Disagree	Do not know
1.	I got a good and pleasant reception.			
2.	The response received was distinct.			
3.	The contact person was knowledgeable and understood my errand.			
	Process for handling errand			
4.	My errand was solved correctly.			
5.	Time frame for handling the errand was acceptable.			
6.	Overall, this process was satisfactory.			

The above questionnaire could be communicated to the customer in two ways: by email or by telephone.

6.2.5 Employee feedback

In addition to more extensive feedback regarding work progress made and customer feedback there is a need for more frequent employee feedback. A short meeting daily or weekly around a whiteboard about progress made and upcoming deadlines is one event that can serve as a forum for employees to communicate feedback regarding their current work situation. Another possible way of communicating the general feeling amongst the employees would be to use a visualizing system where each employee is given the possibility to classify whether the day's work was successful or unsuccessful. Using for example red and green balls and a tube at the end of the day to be filled with the colored balls by the employees could do this. This will in a simple and accessible way represent and visualize the general feeling amongst the employees. This will especially eliminate the disappointed silence and sense that "nobody does anything or cares" otherwise possibly occurring. In turn this will indicate if attention to the current situation is needed and if introduced interventions

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have fallen out well. The ultimate goal is to bring about knowledge regarding the current situation and an incitement to identify and correct arisen problems.

6.2.6 Visualization

The KPI's quality and availability should be made available for all employees to see. Using weekly updated A4 sheets on the whiteboard, displaying the attained level could appropriately do this. Using the colors red and green depending on the result would even further accentuate if the result is satisfactory or not.

As for customer feedback, the result from question 6 regarding overall satisfactory should be displayed in percentage. The five first questions should not be visualized and rather used as a way to find underlying reasons if the results from question 6 deviates in any way from the normal.

Employee feedback should, as stated above, be visualized through a transparent tube and the red/green balls.

7 Discussion

7.1 Results compared to the initial problem approach

The initial purpose of this master thesis was to; if possible, come up with daily and relevant KPIs, furthering an efficient and continuous improvement oriented service organization. The starting-point for this was Lean Production theory and Six Sigma, whose potential was to be analyzed from without a service perspective. More precisely, this was to be done by study industrial best practices, regarding *what* to measure, *how* to measure and *how to visualize* the measures. Furthermore, this was to be investigated by making one or a few case studies on suitable departments in the Service Organization.

When reflecting on the thesis conclusions, and comparing them to the initial purpose of the thesis, two deviations are apparent:

- Early on in the project, a decision was made to exclude Six Sigma as a reference theory. This was due to the realization that the conditions were more suitable to be approached qualitatively, instead of quantitatively. Though, when a continuous improvements mind-set is really established at the Service Organization, and the organizational processes are truly *customer need oriented*, *standardized*, *stabilized* and adequately *measured*, it might be suitable to expand the development work to contain more quantitative tools. Therefore, Six Sigma might be an interesting tool to use in the near future.

- As company department structures and processes are time-consuming to fully grasp, only one case study in the Service Organization was performed; the Salary/PA process. Though the conclusions from these hold some insights, which are believed to be applicable in a more general context.

Apart from the above deviations, it is believed that the conclusions of this master thesis are in many respects in alignment with the initial purpose. Concrete examples from Lean Production and adjacent areas of research on what to measure, how to measure and how to visualize the measures have been given. In addition, these examples have been backed up in a more general problem analysis.

7.2   Thesis result compared to established theory

The conclusions of the master thesis are in alignment with the central parts of recognized Lean theory, briefly consisting of:

- *Customer need orientation*, secure that all organizational processes are designed from both a explicit and implicit customer need perspective,

- *Standardizing and stabilizing*, stabilize all processes, i.e. *define* work tasks, *allocate these correctly* and *standardize* routines and working procedures.

- *Measuring and follow-up*, always aim to measure the things do be done - i.e. satisfying customer needs. Measurements should reflect how much time is spent on value-creating activities, together with the pace and accuracy of these. Through continuous follow-up, the organization can apply the philosophy of continual improvements. This should include quality-, trustworthiness- and availability variables.

- *Feedback*, strive to create an organizational culture furthering customer- and employee feedback.

7.3   Implementation recommendations

The updated flow scheme should be possible to implement immediately since it does not imply large changes of ways of working, it is a simple and incremental change. It does not bring about very different ways of working among the employees and heavily builds upon already established methods.

The same cannot entirely be said about the PSM matrix and the KPIs derived from it. Even though it in certain ways builds upon the established way of visualizing ones work, it is just as well different to put a value as time on it. Our suggestion is therefore for the KPIs proposed to be a subsequent addition to the flow scheme currently on trial. As the employees get used to visualize their work and reap the benefits from it, this should be the next step. It is though hard to set a certain time frame on this, bringing about a great need for gut feeling and timing. Going straight into this methodology could prove a too big transformation in one leap. Though, going from being *very* used to filling out the flow scheme to filling out the PSM matrix should not provide such a leap and consequently be easier to accept.

It would further be appropriate to try out the PSM matrix and accompanied measures of quality and availability on a part-scale basis. One of the teams at Salary/PA should at best try it out and see how it turns out so that, if needed, appropriate changes can be made. When calibrated and working flawlessly the step of applying it to the other team should be undertaken.

As for the measuring of employee and customer feedback, they are not interfering with the work conducted today and will therefore not call for a greater effort from the employees, making them possible to implement whenever appropriate. As soon as possible would though be wished for.

7.4   Future work recommendations

Looking at the Salary/PA case study trying to extract its central lessons would be the best way to continue striving towards excellence at the Service Organization. It is important to keep a horizontal process based focus and to create smooth and correct information handovers between these. It is also very important to establish a general "Lean mind-set" amongst all employees. Ultimately it is up to them to keep the continuous improvements mentality going. Furthermore, all the Service Organization processes should be designed into fully meeting all customer needs, before any KPIs are assigned to them. Actually, only processes that have had their customer needs properly defined and that have been standardized and stabilized are recipient - and suitable - to assign a measurement system to.

7.5   Final reflections

Looking back at the work progress during this master thesis one thing is clear; without true measurements an organization's Lean transformation is not very likely to remain over time. Measuring equals defining which activities and behaviors are being encouraged within an organization. *Hence, it does not matter how sophisticated and efficient a process may be - if not aiming in the right direction, it is useless.* Hence, if implementing measures that are not in true alignment with the fundamental task of *satisfying customer needs*, they can actually have a destructive effect on the same. Besides, as another crucial condition for a Lean transformation to be *remaining*, is that all employees are in on the idea and shares the same mind-set, measures that are for executive eyes only, implies a great risk of employees loosing their spirit and returning to old habits. All employees should be able to understand and put the measures in relation to their daily work.

Payroll/PA would indeed benefit a lot from being evaluated by measures that are not focusing on the economic steering and financial goal-oriented result, as the latter kind of measures are often paralyzing and change preventing. Instead, the measures used should be designed so that they provide a very simple and hands-on understanding for the *actual* and *ongoing* departmental performance. Questions like *"What is the purpose of the organization's existence and how can we ensure alignment with this?"* should be asked. Return to basic.

Another insight that cannot be stressed enough, is the general procedure that *all* true processes must go through. The steps making up this procedure are listed below and have been emphasized throughout the thesis, but as a wise man once said; "Say what you are going to say, say it and then say what you have said":
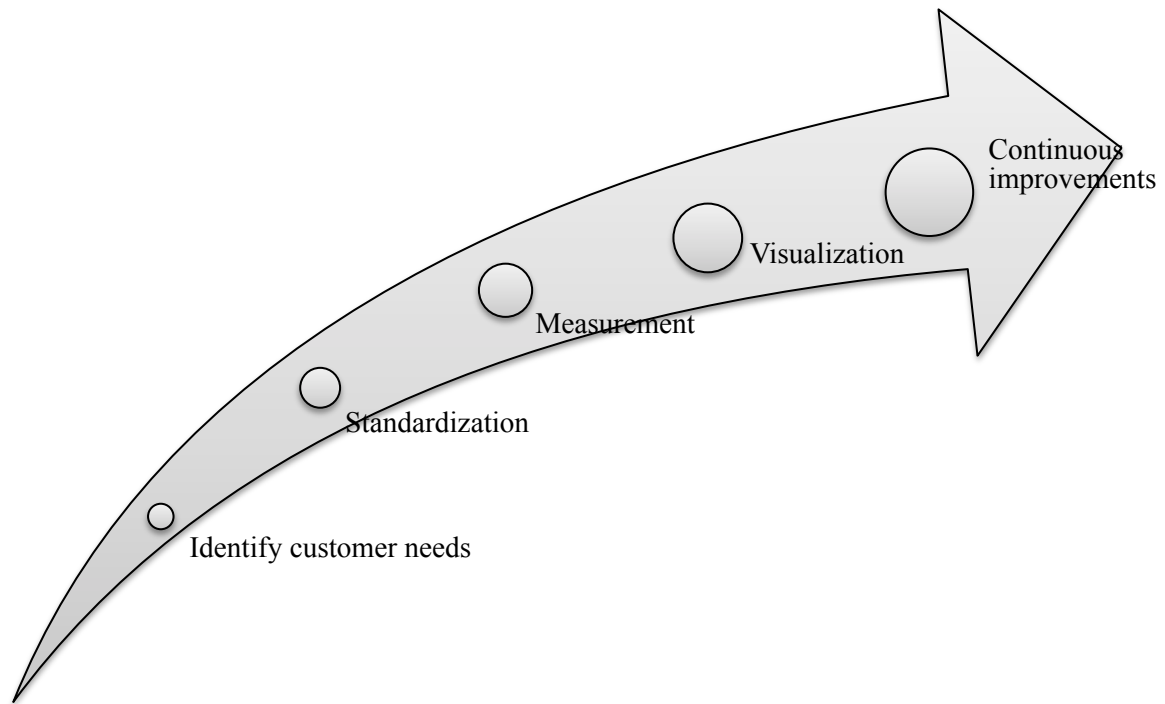

Figure 20: The Five Steps of Successful Measuring

- Identify *(implicit- and explicit)* customer needs
- Standardize input- and output channels, work tasks and routines
- Implement true, and nothing but true, measures that without exception provide guidance concerning how the organization is actually performing
- Visualize these measures in an accessible and including way
- Follow-up and reflect on both customer- and employee feedback
- Strive towards making continuous improvements on all levels

During the work process it has, to the authors delight, been noticed that the employees working within the Service Organization in many ways already have begun thinking and acting in a "Lean way". In spite of that change within an organization indeed takes time, it seems like the energy from the Lean enthusiastic employees is beginning to really have an impact. Therefore, the specific tools and solutions presented in this thesis are in no way meant to be a total solution. The intention of these is rather that they should be in alignment with the positive change already undertaken within Payroll/PA. Furthermore, they are presented along with an overall Lean mind-set. No

single Lean-tool will ever make a company Lean. *Instead, one must dig where one stand*. Hence, the conclusion's emphasis is not really on specific Lean tools - but rather on transmitting a *philosophy*.

7.5.1 Personal reflections

Reflecting on the work process and result of this thesis, a few things and realizations come to mind. First, one should never underestimate the effort needed to get a momentum going within an organization. Decisions often take time to carry through, and extensive change suggestions are often initially met with indifference – even skepticism. *It takes time for ideas to grow on people*. Many people experience change as threatening - something that pushes them outside of their comfort zone. Therefore, communication should always be very extensive and thoroughly. The benefits of the change must be quickly and adequately communicated. People must realize that in the end, this will lead to a better and more efficient organization with a higher gross margin. In alignment with this, so called "quick-wins" should be created, keeping the spirit up. One must also realize that it indeed does take time to create *excellent* and *lasting* results. This is something that is certainly not done over a night.

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Appendices

Appendix A - Initial interviews, daily management

General information

- Name
- Position

Job description

- What does your department do?
- Which are the departments main work areas? Describe these!
- How does a typical day look like in your department?

Improvement potential

- Which areas of your department are in most need of improvement?
- According to you, which are the departmental problems most often occurring in the daily work?

Improvements

- How does your department work with improvements?
- According to you, does everyone in your department have the same opportunity to present improvement suggestions and is the best suggestion always accepted – no matter who came up with it in the first place?

Decision-making

- How easy are decisions to push through your department?
- Generally there are two main decision types – operational and strategic. According to you, are employees working with operational tasks given the possibility to come up with their own suggestions on how to improve the every-day work?

Customer focus and process thinking

- How does your department work with customer focus and delivering quality to the customer?
- How does your department handle demand fluctuations?
- According to you, what role does your department play, seen from a larger perspective?
- Does internal goals, budgets or routines ever keep you from acting in a way that is in best alignment with other departments or employees?
- Does the hierarchy in your department ever stop the performance – i.e. does employees take initiatives when a problem has arisen, or are they hesitating?

Standardization

- Describe how you look at standardization as a tool for avoiding double work and increasing the chances of making things right the first time..
- How does your department work with standardization, routines, rapports and processes?

Communication and information-flow

- What do you think about the communication in your department?
- What do you think about the information-flow in your department?

Daily management

- How is your department followed up in the current situation?
- Is more and better response on the daily work desirable?
- What is your spontaneous reaction to "daily management"?

Measuring

- From without the following parameters, what would be desirable to measure in your department?

    - Reliability

    - Quality

    - Service level

    - Customer satisfaction

    - Employee satisfaction

- How could the above parameters be measured?
- What would be suitable measurement time intervals?

Workload levelling

- How does your department work with workload levelling and is this always possible to do?
- How does your department secure that routines and deadlines are not creating bottlenecks in later non-departmental processes?

Visualization

- What do you think about visualizing KPIs, indicating the department's daily performance level?
- According to you, what is the best way to use visualization and feedback in your department?
- Are there any suitable places for implementing visualization tools?

Appendix B – Co-worker vs. customer HRSC 2010

Legend: ■ Co-workers, HRSC ■ Users, HRSC

Categories (x-axis):
- a) competitive compared to other
- b) creates value
- c) good at supplying information
- d) takes initiatives/are proactive
- e) responses/deliveries within agreed time
- f) is available when ever needed
- g) has competent co-workers
- h) service minded approach
- i) easy to know where to go
- j) understand correct from the beginning

Co-workers, HRSC values: 45, 62, 46, 26, 56, 70, 76, 73, 56, 52

Users, HRSC values: 44, 49, 40, 26, 49, 50, 58, 55, 45, 56

B

Appendix C - Customer review HRSC 2010

Human Resource Service Centre, HRSC

To what extent do you agree with the following statements?

	Positive (4-5)	Last Survey	the SO total	Don´t know
a) is competitive compared to other alternatives	44%	55%	64%	66%
b) creates value for their customers	49%	59%	69%	15%
c) are good at supplying information	40%	45%	55%	6%
d) takes initiatives / are proactive	26%	35%	48%	13%
e) responses/deliv. are within promised/agreed time	49%	55%	70%	7%
f) is available for clients/users when ever needed	50%	55%	68%	4%
g) has co-workers that are able to answ. the questions	58%	60%	73%	5%
h) has a service minded approach to customers	55%	68%	73%	2%
i) easy to know where to go for help with my matters	45%	55%	64%	3%
j) underst. your matter correct from the very beginning	56%	58%	71%	2%

% of given answers

INDEX:	478	545	654

Number of int: 208

Positive (5)   Positive (4)   Neutral (3)   Negative (1-2)

C