Quality Improvements for LQS' Support Services

A Design-Oriented Approach

Master Thesis

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MANAGEMENT SUMMARY

Customer X: "We discussed internally to search for another laboratory that can provide the same services as LQS and searching for possibilities to do some of the analyses ourselves. You are not the first one that talks to us about quality improvements. We would like to see some progress now."

LQS has recently received indications that customer satisfaction slowly dropped. One of the facets influencing this decrease in customer satisfaction is the unsatisfactory business support LQS is providing. Customers can enter at every level in the organization. Approachability is in itself good, but when customers can enter at all levels of the organization, it means that they do not get a consistent answer and things can be assured on the one side, but cannot fulfilled on the other side. This is the point where LQS loses the overview and give customers the opportunity to enter the organization at different levels, which results in inconsistent answers given. LQS is currently working on a quality improvement of its services and this thesis focuses on structuring its internal and external processes to improve its customer service performance.

In recent years, LQS developed a number of improvement programs to increase its customer service performance, like a Customer Intimacy program, but these programs did not prove to be successful. That is why the main research question is defined as: *How can LQS improve its customer service performance and by that its customer satisfaction level?*

This study deals with a practical business problem, and therefore a design-oriented approach described by Van Aken (2012) is used. Design science has been used to tackle the field problem of the organization under study and is used to provide the following deliverables:

- The problem definition
- The problem analysis and a diagnosis of the major causes and consequences of the problem
- A detailed solution design and a change plan

An empirical investigation focuses on the current processes and underlying problems LQS is facing. The design is assessed with semi- and unstructured interviews with customers, employees and management, and critical processes are identified during participant observation studies. The analyses were discussed during focus group sessions to evaluate each step of the design process.

The theoretical investigation focuses on the four critical components – people, process, technology, and information – that determine a Service Desk's success. The solution design results in a Service Desk for

LQS with detailed components that determine a Service Desk's success. At first, LQS should start identifying the employees that should be involved in the Service Desk with a focus on two competencies; empathy and assertiveness. Processes were made clear that should be followed for different types of issues and problems. Responsibilities are described and the use of the Assyst software facilitates the needs of LQS in increasing the service performance.

The change plan is presented as a Strategy Map, described by Kaplan & Norton (2004), with only a few objectives and initiatives for each perspective that helps managers narrowing in and specifying their focus on what that has to be done to change from the current state to the future desired state with a with an increase service quality.

Creating a climate for service is seen as one of the largest challenges that LQS has to overcome when implementing the Service Desk. This climate for service has to ensure that team leaders are discharged of many customer contacts, so they can focus on leading their teams and daily operations. The climate for service results in an increased service quality and can separate the employees dealing with customer issues/problems, so other employees can focus on internal problems and daily operations.

This design-oriented research has a strong practical contribution, and by setting up a Service Desk according to the specifications and processes described in this research, LQS can increase its quality of services provided and thereby increasing the customer satisfaction. Following the initiatives described in the Strategy Map will help LQS move from its current situation into the desired situation, where objectives specified can be accomplished. Given the specific situation of LQS and customer requirements, the solution design is not completely generalizable to other organizations.

TABLE OF CONTENTS

LIST OF FIGURES & TABLES

GLOSSARY (DEFINITIONS / ABBREVIATIONS)

AIDE-model	Analysis, Design, Implementation, Evaluation
AOF	Analyse Opdracht Formulier (Request for analysis form)
BSC	Balanced Scorecard
BPS	Business Problem Solving
CIMO-logic	Contexts, Intervention, Mechanisms, and Outcomes
CSS	Customer Satisfaction Survey
ERP	Enterprise Resource Planning
DRSM	Design Science Research Methodology
HACCP	Hazard Analysis & Critical Control Points
HR	Human Resources
HRM	Human Resource Management
ISO 9001	Quality Management System – Requirements
ISO 14000	A family of standards related to environmental management
KPI	Key Performance Indicator
LIMS	Laboratory Information Management System
LQS	Laboratory & Quality Services
QA	Quality Assurance
SAP	Systems, Applications & Products in Data Processing
SGL	Sensory Grading Laboratory
SLA	Service Level Agreement
SPOC	Single Point of Contact

1. INTRODUCTION

Every day, dairy products containing valuable nutrients are provided to millions of consumers all over the world. Due to the expansion of the supply chain and the improvement of current supply chain channels, many more consumers can be provided with these dairy products (Royal FrieslandCampina, 2013). In the Netherlands, FrieslandCampina is the largest dairy company and it produces a range of products at different locations that are sold worldwide. An important aspect of becoming one of the largest dairy companies in the world is the assurance of good quality of the products. In particular, dairy products are sensitive to various contaminants (i.e. pathogens), and due to several scandals (i.e. melamine scandal in China), FrieslandCampina has developed its own integral quality system, which it calls FoQus (Royal FrieslandCampina, 2013). With FoQus, FrieslandCampina offers consumers, customers, and the regulatory authorities a guarantee that its products and production processes meet the stringent standards in the fields of food safety, quality, safety, working conditions, fire protection, and environment. Various international standards (i.e. HACCP, ISO 9001 and ISO 14000) are integrated into FoQus, so both FrieslandCampina`s customers and consumers can be assured that its products are safe and of the highest quality (Royal FrieslandCampina, 2013). At FrieslandCampina, the Laboratory & Quality Services (LQS) department concentrates on the analysis of samples from the production facilities of FrieslandCampina dairy products in order to ensure the quality of these products and thus meet the FoQus standards. Due to the strict guidelines of the international standards, FrieslandCampina's increased production of dairy products and FrieslandCampina's expanded portfolio of products, the total amount of analyses performed by LQS grew from 950,000 in 2012 to 1,500,000 in 2014 (LQS, 2014). A detailed overview of the trend of analyses performed by LQS between 2012 and 2014 can be found in Appendix I.

1.1 THE ORGANIZATION – FRIESLANDCAMPINA

Every day, Royal FrieslandCampina provides around 1 billion consumers all over the world with a range of products. With annual revenues of € 11.4 billion, FrieslandCampina is one of the world's five largest dairy companies (Royal FrieslandCampina, 2013). FrieslandCampina supplies consumer products such as dairy-based beverages, infant nutritional products, cheeses and desserts in many European, Asian and African countries (Royal FrieslandCampina, 2014a). FrieslandCampina also produces ingredients and semi-finished products for manufacturers of infant & toddler nutritional products, the food industry and

the pharmaceutical sector around the world. An overview of FrieslandCampina's cooperative structure and key figures can be found in Appendices II and III.

1.2 THE DEPARTMENT – LQS

The LQS department is part of the Shared Services department within FrieslandCampina and is located in Leeuwarden (NL). The Shared Services department concentrates on supporting the activities of the business groups such as Finance, HR and Laboratory & Quality. LQS provides research and support in the form of microbiological, chemical and sensory analyses. The services are consumed according to a specific model and are paid by those who consume them, as specified by a cost recovery rate. LQS is a small business unit within the enterprise and has a relatively delineated customer base – the internal FrieslandCampina production locations and the R&D department. Additionally, LQS provides business support and training and it conducts various projects at the request of internal customers. The general purpose of the department is to achieve a high level of food safety, product quality and operational hygiene. Production locations are not obligated to use the services provided by LQS but can select other analytical service and business support providers in the external market. As opposed to HR Services and Financial Services, where FrieslandCampina business units are obligated to use the services provided by these departments – which results in these departments having a guaranteed purchase of services – LQS must attract customers based on service performance and costs. LQS is continuously searching for opportunities to increase its service performance. LQS aims for the shortest and cheapest possible lead times for their analytical services (operational excellence) with a high degree of customer service and satisfaction. The LQS department has grown rapidly in recent years from 104 FTEs in 2012 to 175 FTEs in 2014 (LQS, 2014) and it is currently working on a quality improvement of its services. One of the elements that will be looked at is structuring its internal and external processes to improve its customer service performance.

1.3 REGULAR PROCESSES (ROUTINE ANALYSES)

The majority of activities that LQS deals with concerns regularly analyzing samples from the different production locations of FrieslandCampina and from the R&D department. Samples are sent by these customers to LQS to test on the specific characteristics that are requested. A detailed scheme for testing these samples is displayed in Figure 1. A full 66.7 % of the analyses is performed by the Analytical Microbiology department, 26.7% is conducted by the Analytical Chemistry department and 6.6% is

fulfilled by the Sensory Grading department (LQS, 2014). Because of the differences in analysis methods, quantity of analysis and differences in employee occupation, these departments do not work uniformly. Figure 1 displays the steps that are taken in processing the samples at the different departments within LQS. Steps 2 and 3 are executed differently by the various departments and the differences will be explained in Sections 1.3.1 – 1.3.3.

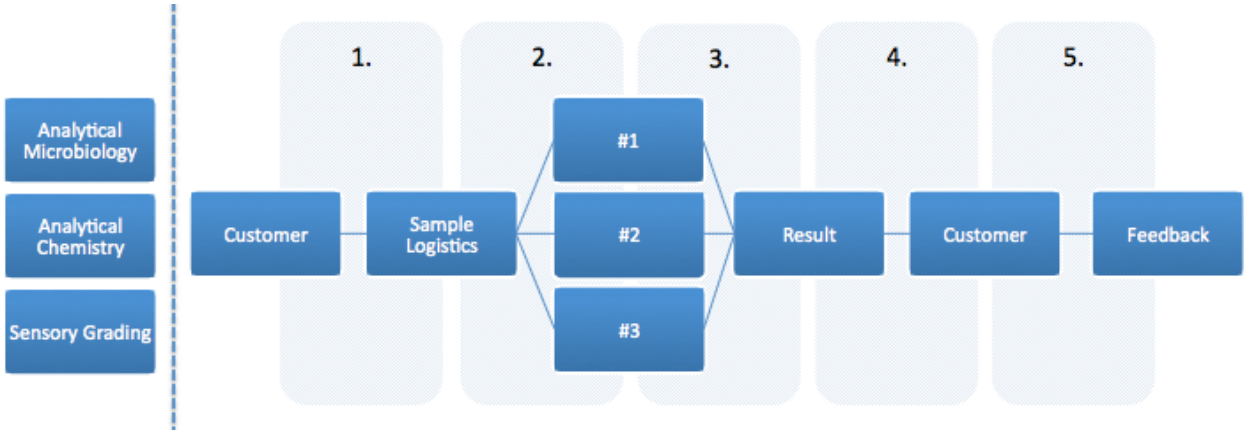

Figure 1: Steps taken in the routine sample testing process.

1.3.1 ANALYTICAL MICROBIOLOGY

The production locations of FrieslandCampina are in need of analyses of their products for a number of reasons. As mentioned previously, early detection of contaminants and the existence of regulations are the primary reasons for analysis. The Microbiology department is responsible for testing microorganisms in the samples. These organisms can be desirable or not; some microorganisms are harmful to human health and others are expedient (Lund et al., 2000). Most samples are tested for certain values of fungi and bacteria. In the Microbiology department, more than 1 million analyses, divided among 80 types, are performed (see Appendix III).

1. Customers can use their ERP (SAP) system to enter their analysis application into the Laboratory Information Management System (LIMS) of LQS. A courier then picks up the samples and delivers them to LQS. Another possibility is to use an application form and enclose this form with the shipment of samples. Samples are collected by the 'Sample Logistics' ('Monsterlogistiek' in Dutch) department, which totals at the quantity of the different samples and checks whether they are intended for Analytical Microbiology, Analytical Chemistry or Sensory Grading. All the samples are given a barcode and information is entered into the LIMS system. The samples are then forwarded to the next department.

2. At Analytical Microbiology, samples are checked and the correct analysis is subsequently performed based on the requirements of the customer. Employees of the laboratory scan the barcode to determine which type of analysis should be performed.
3. After the analysis, preliminary results are entered into the LIMS system, which has a viewing function for customers.
4. Finally, a specialized laboratory employee checks the analysis and the final results are entered into the LIMS system.
5. Whether or not the customer is contacted depends on the results of the analyses. In some cases the customer contacts LQS to obtain additional information on results given.

1.3.2 ANALYTICAL CHEMISTRY

At the Chemistry department, the components of the samples are analyzed. These product components must have certain values that lie within a range of predetermined options. The Analytical Chemistry department primarily provides routine analyses of dairy end products, raw products and semi-manufactures that are mainly concerned with physical properties related to fat, protein, dry matter or vitamins. In contrast to Microbiology, where samples are checked and the correct analysis is performed, Chemistry analyses are executed and the matching samples are included. Samples can be stored and analysis can be executed after a couple of days, when the specific run is done. So the difference with the Microbiology department is that, in the Chemistry department, a specific analysis is performed and, based on the analysis, samples are included; in the Microbiology department, samples are scanned and the correct analysis is performed on this sample. The second difference with the Microbiology department is that results are checked by team leaders instead of specialized laboratory employees. In the Chemistry department, more than 400,000 analyses are executed, divided into 200 types of analyses (see Appendix III).

1.3.3 SENSORY GRADING

The Sensory Grading analysis department performs analyses of the color, smell, flavor and structure of the samples. The department performs analyses on condensed, powdered and a number of ready-to-drink products. In addition to twenty standard analyses, tailor-made analyses can be carried out to answer specific questions concerning the product's flavor, smell or color. To ensure the quality of the analyses, the Sensory analysis laboratory has a wide range of reference materials, which are kept in

conditioned areas. The process steps performed by the Sensory Grading department are equivalent to the steps taken by the Microbiology department, but the number of analyses executed by the sensory grading department is a factor of ten times less than the Microbiology department (see Appendix III).

1.4 NON-REGULAR PROCESSES (BUSINESS SUPPORT)

In addition to the routine analysis of samples from the different production locations, employees at LQS face other tasks, whether or not related to the regular process. LQS provides business support to various production locations and to the R&D department. Topics that are dealt with by the business support group are: support of hygiene issues by means of inspections, monitoring and improvement programs; support for incidents and issue management concerning food safety; and advice on microbial and food safety related issues, among others. A number of analysts were made available to assist the experts in the business support group with analyses or other forms of input. Furthermore, the business support function of LQS provides training for a number of business groups.

1.5 THE INITIAL PROBLEM

As described in Section 1.2, LQS is continuously looking for ways to increase its service performance – on the one hand by increasing the quality of analyses (focusing on operational excellence), and on the other hand by increasing the service support that should result in a higher degree of customer satisfaction. The initial problem was formulated by both the General Manager and a QA specialist at LQS. "During the intake meeting, the principal may explain the problem mess that the company faces. On the basis of this first introduction to the problem mess, a preliminary agreement is made to make this business problem the focus of the further internal exploration" (Van Aken et al., 2012, p.43). During the intake meeting, an agreement was made to focus on creating an interface between the customer and LQS and to structure the internal and external processes in order to improve LQS' customer service performance. A recent study showed that customers of LQS rated its service performance as significantly decreasing over the last five years (see Section 1.6). Responsibilities within the LQS department are not clear, and communication within the department and to external parties is substandard.

The preliminary problem, as discussed in the intake meeting, was the starting point for the interviews (Nickerson et al., 2012). The question of whether there really is a problem was discussed and, if so, why it exists and why it has not already been solved within the organization. After researching the

organizational settings, current processes and the initial problem, the underlying root problems were identified. A detailed analysis of the problems and interview responses is provided in Section 3.

1.6 CUSTOMER SATISFACTION

The starting point for some indications for the drop in customer satisfaction was an analysis of the Customer Satisfaction Survey (CSS). In 2014, a CSS was conducted with internal customers who use the laboratory services provided by LQS (The Choice, 2014). The majority of these customers came from production locations in the Netherlands, Belgium or Germany. The average grade that customers gave LQS dropped slowly in recent years from a 7.6 in 2010 to 7.1 in 2014 (The Choice, 2014). This CSS also revealed why customers were less satisfied with LQS. A number of arguments for the decrease in satisfaction related to the research problem of this thesis are displayed in Table 1, and the trends are displayed in Appendix VI.

Area	Complaint
Treatment of complaints	*"It seems it isn't taken seriously. Not a proper feedback and no root cause."*
	"Employees are willing to cooperate but do not have the time to really address the complaint."
Support	*"We have to call you often to ask where our results are."*
	"Sometimes results are much later than indicated or are not given without an explanation."
	"I have often placed a telephone call to LQS and no one was available; they said they would call back but didn't."
	"When I have a question about a certain analytical result, I have never received any questions/advice about the way the sample was taken or stored."
Quality of analyses	*"Too often too late."*

Table 1: Customer Satisfaction Survey (The Choice, 2014).

As can be seen in Table 1, the CSS shows three areas that influence the decrease in customer satisfaction (treatment of complaints, customer support and the quality of analyses). Section 1.7 will elaborate on the research objectives and the scope of this research given these three areas.

1.7 RESEARCH OBJECTIVES & SCOPE

In order to realize a plan of improvement, the current processes, organizational structure and customer contacts must first be analyzed to understand how the department is currently operating. After the analysis has visualized the present state of the department, academic literature can be used to provide alternatives for improvement. This type of research is commonly known as design-oriented research (Van Aken & Romme, 2009; Hevner, 2007; Verschuren & Hartog, 2005).

In this context, the objective of this research project is not to develop general knowledge contributing to the state-of-the-art academic literature, but to generate specific knowledge in this specific business context. Thus, the purpose of the project is to solve the problem of unsatisfactory customers of the LQS department by providing a theory-based and practical-oriented solution that will lead to actual change and improvement of the current situation in the organization. It concerns business customer service performance improvement on the basis of sound plans. The overall objective is to create an interface between the customer and LQS and to direct internal and external processes in such a way that the changes will lead to an increase in customer service performance and eventually to a greater level of customer satisfaction of the entire LQS department.

When analyzing the CSS, it can be seen that the grades customers give to LQS are influenced by the treatment of complaints, customer support and the overall quality of analyses. The scope of this research will be narrowed down to a thorough analysis of supporting activities related to questions from customers concerning the routine analysis of samples. The business support that experts give (Section 1.4) will be outside the scope of this research. The most important reason to leave this type of support out of the scope of this research is that the General Manager of LQS wants a clear cut between regular and non-regular processes and its supporting activities. Furthermore, LQS is currently running a pilot on the treatment of complaints, so dealing with customer complaints is initially outside the scope of this research. Still, Section 6 will discuss the possibility of dealing with customer complaints in the designed solution. Finally, the quality of analyses executed by LQS is outside the scope of this research, but could be indirectly influenced when, for example, team leaders are discharged of many customer contacts and can focus on their daily operations and leading their teams.

During an interview session with the team leader of the Sensory Grading department, it was concluded that most problems faced by the Microbiology- and Chemistry departments do not apply to Sensory Grading. Sensory Grading is responsible for only 1/15 of the total amount of analyses performed (see

Appendix III). The department rarely deals with non-regular processes, and a discussion with the sensory grading team (consisting of seven employees) made clear that there are about 75 issues/questions per year related to the routine analysis of samples. On average, this means one and a half times per week with an average of 0.5 hours per issue. An overview of the various issues can be found in Appendix V. Because of the relatively few issues and problems in the Sensory Grading department, further analysis of the problem within LQS will focus on the Microbiology and Chemistry departments. At the end of this research, conclusions and recommendations based on analysis of the Microbiology and Chemistry departments will be weighed and applied to the sensory grading department, if applicable.

As will be discussed in Section 2.3, a business problem-solving project consists of a number of steps. Together with the company and university supervisor, it was agreed upon not to participate in the change and realization phase. In this case, the deliverables of the project are:

- The problem definition
- The problem analysis and a diagnosis of the major causes and consequences of the problem
- An exploration of potential solutions to the problem
- An elaboration on one of them in a detailed solution design and a change plan

1.8 RESEARCH QUESTIONS

The project is directed towards delivering value from a single organizational perspective by answering the main research question, namely:

How can LQS improve its customer service performance and, with that, its customer satisfaction level?

Sub-questions are constructed in such a way that answering these questions will result in an optimal answer to the main research question. These sub-questions are:

1. What are the current processes at LQS for dealing with customer questions/issues?
2. What are the expectations from the management, customers' and employees' perspectives related to the solution of the problem?
3. What should an organization do to provide good customer service from an academic literature perspective?
4. How can the internal work processes be structured towards a better service performance?

5. What steps must LQS take to move from its current situation to the desired situation?

The outcome of this research should be scientifically and practically relevant for LQS by answering the main research question and sub-questions. This indicates that the findings are hardly generalizable to other, more or less, similar organizations, given the specific research context of LQS.

1.9 STRUCTURE OF THE REPORT

This research is structured as follows: Chapter 1 introduces and describes the organization, and the initial problem is identified and explained. In addition, the research objectives, scope and questions are described. The second chapter discusses the research methodology that is used and provides more insights into design-oriented research and how it can be used in this thesis. Moreover, data collection and analysis methods will be explained. As a further elaboration on the root problem in the organization is needed, Chapter 3 focuses on the problem definition, the analysis and diagnosis. From an academic perspective, literature is used to form the basis to change the organization from the current state to the future desired state. This will be the main focus in Chapter 4. Chapter 5 will expound upon the path LQS must take to move from the original state to the desired state. In Chapter 5, proposed design characteristics will be given and evaluated based on the problem, theory, goals and objectives. Eventually, one specific design is presented and discussed extensively. Chapter 5 concludes with a description of the pilot and evaluation criteria. This thesis ends with the conclusion, limitations, recommendations and future research suggestions in Chapter 6.

2. METHODS

In this chapter, the research methodology used is described and explained. The method used for this research is design-oriented, focusing on redesigning the current internal and external processes for dealing with customer questions/issues and, by this, improving the existing situation of the LQS department. Three papers (Van Aken, 2004; Verschuren & Hartog, 2005; Visscher & Visscher-Voerman, 2010) and the book of Van Aken et al. (2012) were studied and used to develop a framework, which includes the steps that must be taken to conduct design-oriented research. In the final step of the design-oriented research, an elaboration on one of the solutions in a detailed solution design and change plan must be constructed. This change plan will be constructed using the 'Strategy Maps' framework by Kaplan and Norton (2004) and will be elaborated on in Chapter 5.

The models described by the authors (Van Aken, 2004; Van Aken et al., 2012; Verschuren & Hartog, 2005; Visscher & Visscher-Voerman, 2010) contain the subsequent steps a designer must perform to create a good design. What the models have in common is that they contain four basic steps: analysis of the design problem, design of a solution, implementation of the solution, and evaluation of the solution in the light of the original problem (Visscher & Visscher-Voerman, 2010). The study of Visscher and Visscher-Voerman (2010) shows that the activities of the traditional ADIE (Analysis, Design, Implementation, Evaluation) models can be identified in each design process, but that these activities are shaped differently and do not occur in the same order within each approach. This research focuses on the rational approach proposed by Visscher and Visscher-Voerman (2010), where problem solving occupies a central position but there is considerable attention for the stakeholders. There are appreciable differences in interests in and opinions of problems and possible solutions at LQS, which makes it an interesting task to consider and evaluate these varied interests and opinions. This research combines the rational approach with a dialogical design approach described by Visscher and Visscher-Voerman (2010). In the analysis, the problem will be identified, and goals and objectives will be determined. Solutions will be created to meet the objectives, but the choice of the design will be guided by interests and created by discussion and negotiation, in order to achieve consensus or a compromise to which people with different interests and preferences can commit themselves. Evaluation is an important factor to create a good design (Verschuren & Hartog, 2005) and will take place during every stage of the process.

A detailed analysis of the research design and the subsequent steps in an organizational context will be provided in the next sections.

2.1 AN INTRODUCTION TO DESIGN-ORIENTED RESEARCH

Designing science focuses on human-made objects and processes designed to provide solutions for identified problems. The natural sciences are, according to Simon (1996), concerned with how things are. Whitley (1984) states that "it criticizes everyday accounts and practices… but it does not seek to transform them except in the general sense of demonstrating their incorrectness" (Whitley, 1984, p.371). Design, on the other hand, "is concerned with how things ought to be, with devising artifacts to attain goals" (Simon, 1996, p.114). Design science differs from human and natural sciences in that it focuses on building and evaluating artifacts, instead of searching for a universal truth and prediction or understanding phenomena in specific situations. Design involves human beings using knowledge to create what should be, things that do not yet exist. Design is the activity of changing existing situations into desired ones. Van Aken (2004) states that "besides description-driven research programs in management one also needs prescription-driven research programs in order to develop research products which can be used in designing solutions for management problems" (Van Aken, 2004, p.220). Design science is motivated by the desire to improve the environment by the introduction of new and innovative artifacts and the processes for building these artifacts (Simon H. A., 1996). According to Van Aken (2004), understanding the problem is only halfway to solving it; the second step is to develop (alternative) solutions. Understanding changes, sources and reasons still leaves undone the tasks of developing systems, change programs and strategies (Van Aken, 2004). The mission of design science is to develop knowledge for the design and realization of artifacts, i.e. to solve construction problems, or to be used for the improvement of the performance of existing entities, i.e. to solve improvement problems. Or, as mentioned by Romme (2003), "the idea of design involves inquiry into systems that do not yet exist – either complete new systems or new states of existing systems" (Romme, 2003, p.558). The design science literature and models are used in this thesis to understand the underlying problem at LQS and to arrive at several solutions to increase LQS' service performance. The next step is to investigate how design-oriented research is applied in an organizational context and to elaborate on the steps that need to be taken in order to understand the underlying problem and create the specifications for the solution(s) that need to be found.

2.2 DESIGN-ORIENTED RESEARCH IN AN ORGANIZATIONAL CONTEXT

"Everyone designs who devises a course of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different, fundamentally, from the

one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state" (Simon, 1996, p. 111).

Designing and redesigning organizations is a core activity of managers and management consultants and has been a focal point of management research (Van Aken, 2004; Romme, 2003) for many years. Denyer et al. (2008) state that "design science research intends to add to analysis and explanation, specifications for interventions to transform present practices and improve the effectiveness of organisations" (Denyer et al., 2008, p.394). The mission of a design science is to develop knowledge that the professionals of the discipline in question can use to design solutions for their field problems (Van Aken, 2005). The focus in business or organizational problem solving is on designing what can be, or what should be, in order to improve the performance of a specific business system on one or more criteria (Van Aken et al., 2012). As stated in section 1.2, LQS is looking to increase its service performance and is thereby searching for solutions to the problem of unsatisfactory customer contacts. Solution implementation involves leading change in an organization in order to introduce new people, processes and physical as well as intangible assets (Nickerson et al., 2012). The steps in the design-oriented research are extensively covered in the academic literature and will be described in the next section.

2.3 THE DESIGNING CYCLE

In the design-oriented research literature, a number of researchers have aimed at designing a methodology that would serve as a commonly accepted framework for carrying out research based on design science research principles. Denyer et al. (2008) discuss design propositions through the so-called 'CIMO logic' (Contexts, Intervention, Mechanisms and Outcomes). Hevner et al. (2004) analyzed design science research as an embodiment of three closely related cycles of activities: the relevance, rigor, and design cycles. Some articles (Verschuren & Hartog, 2005; Peffers et al., 2008) distinguish specific stages of what is called the 'designing cycle' to provide guidance for researchers who work on design science research. Finally, Van Strien (1997) describes a regulative cycle that can be used to solve a particular type of problem. According to Visscher and Visscher-Voerman (2010), these models may be more or less elaborate, but what they have in common is that they contain four basic steps: the analysis of the design problem, the design of a solution, the implementation of the solution and the evaluation of the solution in the light of the original problem. These models are called ADIE models (Analysis, Design, Implementation, Evaluation).

Van Aken et al. (2012) state that "in reality no setting is standard, so one always has to make one's own, specific project design" (Van Aken et al, 2012, p.6). Based on the design science research methodology by Van Aken (2004), the designing cycle of Verschuren and Hartog (2005), the regulative cycle of Van Strien (1997), and the specific research context at LQS, six stages of the designing process can be identified to carry out research based on design science research principles.

1. Problem identification and motivation: Define the specific research problem and justify the value of a solution. Resources for this activity include knowledge of the state of the problem and the importance of its solution (Chapter 3).
2. Objectives of a solution: The main result of this stage should be a small set of goals to be realized with the artifact to be designed (Section 3.5).
3. Structural specifications: The next step entails a specification of the requirements to be fulfilled within the frame that is defined by the goal and a detailed explanation of potential solutions for the problem (Section 3.5).
4. Design and development: An elaboration on one of the solutions in a detailed solution design and a change plan. This step entails the realization of the design into a prototype. This prototype embodies the complete design and is useful for empirical evaluation (Chapters 4 & 5).
5. Implementation: In this stage, the designer has to put into practice the prototype as a first check that it will work appropriately in the next stage (outside the scope of this research).
6. Evaluation: The last step is to check whether the short and long term effects of utilization of the prototype fit the design goals and satisfy the expectations of the designer and, notably, of the various stakeholders. This activity involves comparing the objectives of a solution to the actual observed results from use of the artifact. Depending on the nature of the problem venue and the artifact, evaluation could take many forms (Section 5.11).

It is recognized that the quality of a design and its success after implementation are dependent on the quality of the design process (Visscher & Visscher-Voerman, 2010). It is important that evaluation takes place during the entire process of designing, not only at the end. "The designing process should be highly iterative: the designer continuously goes back and forth between the several stages (at least mentally), looking [at] what repercussions a decision in one stage has for earlier as well as later stages" (Verschuren & Hartog, 2005, p.738). Hevner (2007) states that "the results of the field testing will determine whether additional iterations of the cycle are needed in this project. The new artifact may have deficiencies in functionality or in its inherent qualities (e.g., performance, usability) that may limit

its utility in practice" (Hevner, 2007, p.89). Also, feedback from the environment of the field testing and a restatement of the research requirements as discovered from actual experience can cause an iteration of the cycles.

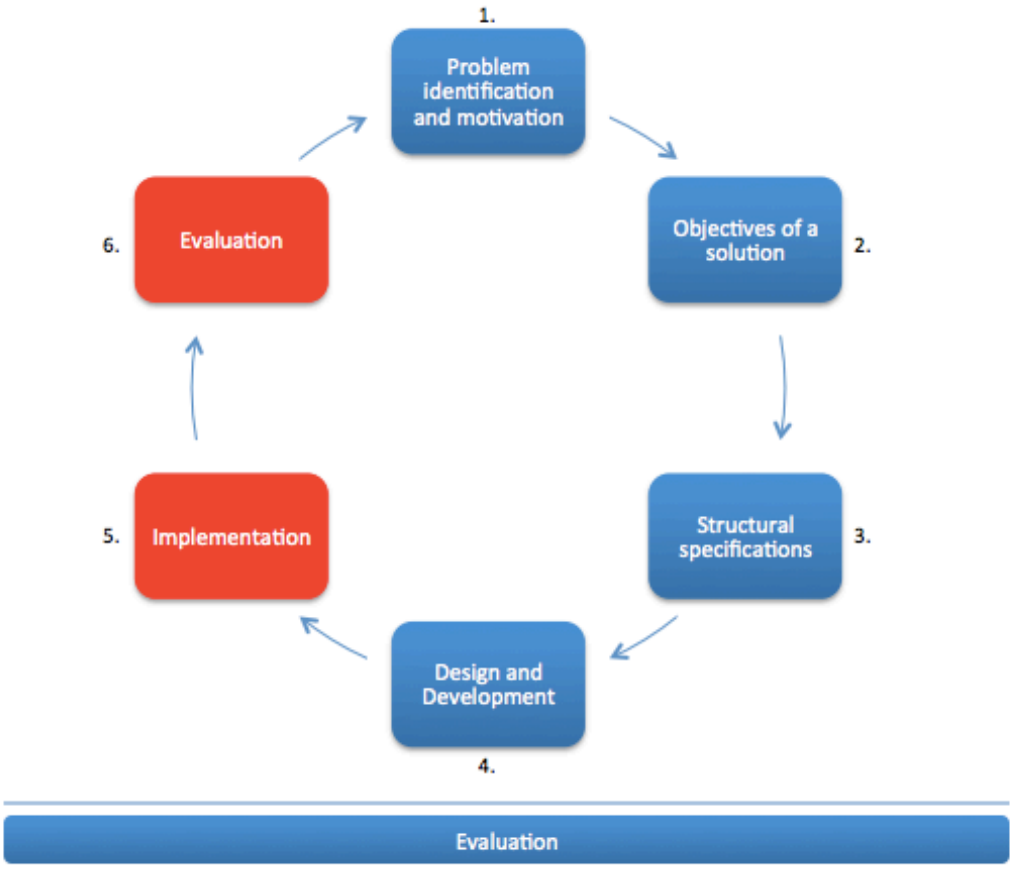

Figure 2: Six stages of the design process (based on the regulative cycle of Van Strien, 1997).

Figure 2 shows the designing cycle based on the regulative cycle of Van Strien (1997) and the steps that must be carried out in designing a solution for LQS. The first step, problem identification and motivation, is discussed in Section 1.5, and this will serve as the starting point for the design cycle and will be elaborated on in Chapter 3. Steps 2, 3 and 4 are complex and are dependent on several factors (Peffers et al. 2008). Figure 3 displays the process that will be used for formulating objectives and structural specifications from a theoretical and emperical perspective. The current practice, a focus group, external practices, academic literature and stakeholders' expectations are all taken into consideration when formulating objectives and structural specifications. Combining important aspects of the different influencing factors will result in a number of possible designs that fit the objectives and specifications. "The research synthesis after systematic review of all the literature on a certain type of organizational

problem will typically yield not a single, but a set of, solution concepts… in deciding among them the practitioner draws on context and objectives" (Van Aken & Romme, 2009, p.9). A focus group will be formed to discuss the set of solution concepts, and consensus should be reached on the best design to ensure commitment to the designs (Visscher & Visscher-Voerman, 2010). These designs will be discussed during a focus group session and, based on their considerations; one design will be chosen and developed into a prototype. "The best solution is the one that scores the highest on a set of criteria that are derived from the problem statement, and possibly from a variety of financial, structural, or other constraints" (Visscher & Visscher-Voerman, 2010, p.715). The actual implementation (Step 5) of the prototype is not within the scope of this research but recommendations on how to implement a pilot and further roll-out of the design are given at the end of this report. Evaluation activities will take place during the entire process of designing, and after-implementation evaluation characteristics are provided.

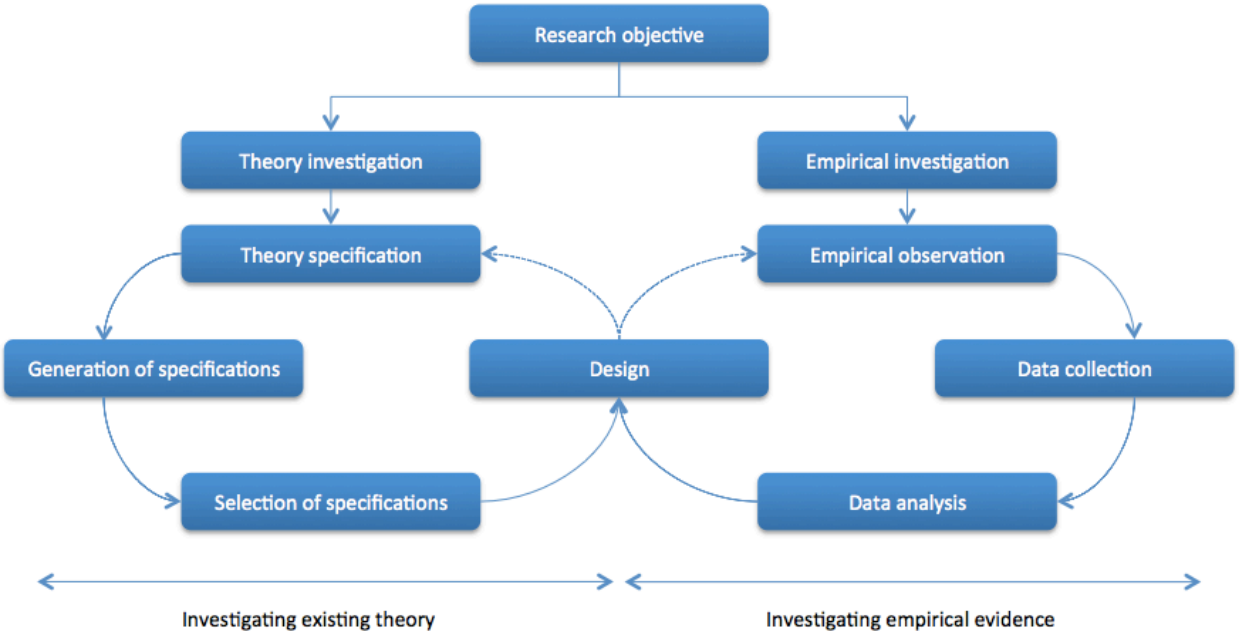

Figure 3: Design process.

As mentioned earlier, the design process will be based on academic theory and empirical evidence as well as observations at LQS and its customers. Figure 3 shows how the design will be based on both empirical observations (the remainder of this chapter and Chapter 3) and academic, theoretical specifications (Chapter 4).

2.4 DATA COLLECTION AND ANALYSIS METHODS

This section describes the data collection and analysis methods used. Furthermore, the reasons for sampling are explained and interview methods are described. Van Aken et al. (2012) state that if one wants to understand the perspective of someone else, one needs to first employ qualitative research methods. The specific selections made for these methods will be clarified in the following sections.

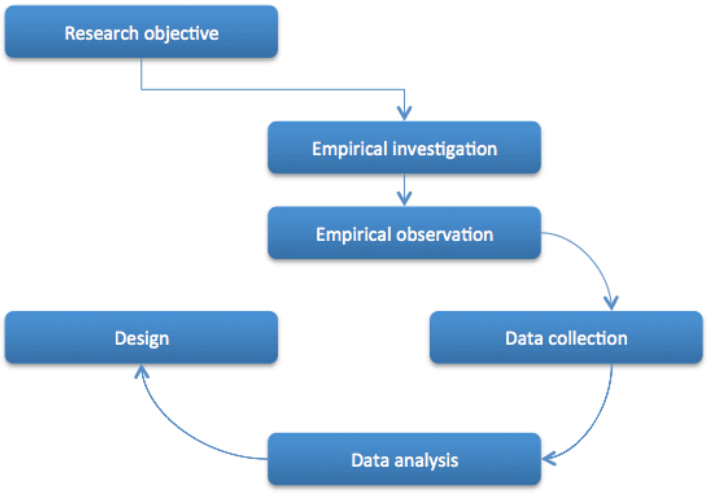

Figure 4: Empirical investigation.

2.4.1 SAMPLING

At the start of this research, little was known about the people that were affected in any way by the research problem. According to Babbie (2010), probability sampling is the primary method of selecting representative samples for social research. At the same time, probability sampling can be impossible to conduct or inappropriate to use in many research situations. In this research, samples were chosen on the basis of purposive sampling. According to Bryman and Bell (2011), the goal of purposive sampling is to sample participants in a strategic way, so that those samples are relevant to the research question being posed. At LQS, the respondents were selected either due to the fact that they were often contacted by customers or due to their (potential) input for the research because they were important to the completion of the research. The technique used for contacting the respondents was snowball sampling, used by Babbie (2010). This procedure is appropriate when the members of a special population are difficult to locate. Since at the early stage of this project it was not clear which persons were potential stakeholders, data was collected on the few members of the target population that were located at the start of this project. Thereafter, these individuals were asked to provide the information needed to locate the other members of the population that could be potential stakeholders or affected in any way by the research problem. Each person interviewed was asked to suggest additional people for interviewing. Section 2.4.2 will discuss the interview methods that were used to collect the empirical data.

2.4.2 INTERVIEWS

According to Cohen et al. (2011), interviews enable participants to discuss interpretations of the world in which they live, and to express how they regard situations from their own point of view. In general, a distinction between three types of interviews can be made, namely: (1) structured interviews, (2) semi-structured interviews and (3) unstructured or so-called in-depth interviews (Ghauri & Grønhaug, 2010). Each type of interview is used for different purposes. At the start of each interview method, the interviewer introduces the problem-solving project and its background, what the objectives of the interviews are and why the interview is important to the problem-solving project (Van Aken et al., 2012). At the beginning of each interview taken for this thesis, the participants were ensured that all information would be handled anonymously.

Three rounds of interviews were conducted for this research. The first interviews took place in the orientation phase of the research, whereby the purpose was exploratory in order to obtain an idea of the current processes in the department. The primary purpose of these interviews was to add other perspectives to the preliminary formulated problem, to be able to assess its scope and depth. A semi-structured interview was conducted with approximately 25 employees, in positions ranging from analysts to managers, to understand how the organization functions. Three main topics were addressed during the interviews: daily activities and responsibilities of the person involved; number and scope of customer contacts; and thoughts about how the person involved saw solutions, given the initial problem. Semi-structured interviews were chosen here, because these encompass predetermined questions, but the order could be modified based upon the interviewer's perception of what seemed most appropriate. Question wording could be changed and explanations given (Ghauri & Grønhaug, 2010). The interviews took approximately 30-45 minutes per person. A protocol of the semi-structured interview can be found in Appendix VII and a summary of the most important responses given is displayed in Appendix XI and Section 3.3.

The second round of interviews was conducted with the management team and the project supervisor from LQS (Ms. Kruise-de Vegt). These questions were not structured, whereby the purpose was to obtain a better understanding of the underlying problem. With unstructured interviews, the interviewer has a general area of interest and lets the conversation develop within this area (Ghauri & Grønhaug, 2010). The outcome of this interview was leading for the progress of this research, since also the goals, requirements and assumptions were made clear in these interviews. The advantage of unstructured interviews is that the discussion may lead in other directions, which the interviewer did not previously

consider. Such a discussion might be significant for the understanding of the problem context (Saunders et al., 2009). Interviews with these persons were also important because "those who carry out the solution should be involved in its development from the beginning. Involvement in making decisions about solutions and their implementation leads to acceptance and commitment" (Romme, 2003, p.563).

The third round of interviews was conducted with multiple customers of LQS to acquire a better understanding of the expectations they had regarding the solution design. Customers are important stakeholders when dealing with the research problem, as an important result of the design should be an increase in customer satisfaction. Customers of different production locations and at different levels in the organization were approached and interviewed using unstructured interviews. These interviews were conducted in order to discover what is important to the interviewees, what their understanding and experiences are, what meaning the phenomenon under study has to them, and their point of view. The most important responses and perspectives are discussed in Section 3.1 and Appendix IX.

With the agreement of the interviewees, the interviews were recorded and notes were made during the interview. The interview sessions were used as input for Steps 1, 2 and 3 of the design process displayed in Figure 2, and they will be discussed extensively in Chapter 3.

2.4.3 CODING

"Whether you have engaged in participant observation, in-depth interviewing, or some other form of qualitative research, you will now be in the possession of a growing mass of data – most typically in the form of textual materials" (Babbie, 2010, p.400). The key process in the analysis of qualitative research data is coding – classifying or categorizing individual pieces of data. During coding, data are broken down into discrete parts, closely examined, and compared for similarities and differences. How interview responses were coded and classified into different categories is explained in Appendix VIII and detailed in Chapter 3.

2.4.4 PARTICIPANT OBSERVATION

The next method that was used in the empirical analysis was participant observation. According to DeWalt and DeWalt (2011), participant observation has as its goal an understanding of the nature of phenomena. "It is a way to collect data in naturalistic settings by ethnographers who observe and/or take part in the common and uncommon activities of the people being studied" (DeWalt & DeWalt,

2011, p.2). Participant observation is both a data collection method and an analytical tool and provides several advantages to research. “An ethnographic approach implies intense researcher involvement in the day-to-day running of an organization, so that the researcher can understand it from an insider’s point of view” (Bryman & Bell, 2011, p.425). This method was first used in this research process to get a better understanding of the current processes of the Sample Logistics department. In many interviews, respondents indicated that a lot of questions enter the organization via this department. Also, two years ago it was agreed that this department should also serve as a Service Desk for customers. From previous experiences it appeared that this department was not able to cope with the extra task of being a Service Desk as well as coping with the regular flow of samples. During the participant observation, specific attention was paid to investigate why the current setting and work processes were not able to cope with the requested service performance. Field notes were recorded during a half-day observation of daily interactions and processes. The aim of this observation was not only to acquire a better insight and overview of interactions and processes, but also to gain an idea where opportunities could arise that could contribute to the analysis and recommendations of this research.

The participant observation method was also used at different Service Desks of FrieslandCampina departments. Firms can achieve the same dynamic capabilities of other firms either by imitating the best practices or by developing the same capabilities through different paths (Eisenhardt & Martin, 2000). During this research, different departments of FrieslandCampina (e.g. HR, ICT, Cheese) and one laboratory (Eurofins) were visited and work processes were observed to identify processes that can be applied at LQS. Also, a workshop was attended at the headquarters of FrieslandCampina to understand the Service Desk tool used by the different departments. ‘Best practice’ guidelines to deal with customer requests and problems were gathered, adjusted to the specific situation of LQS and bundled in a customer service manual (see Appendix XIV and Section 4.2). The people, processes, technology and information components of the Service Desk theory that will be described in Chapter 4 were observed in the field for usefulness at LQS in resolving the problems it faces, and they were used for constructing structural specifications for the solution design in this thesis. Furthermore, steps regarding how to appoint ownership to the different procedures were written and used in the course of this research and in the designing phase of the project.

2.4.5 FOCUS GROUPS

The final step in the empirical analysis is the use of focus groups. “In a focus group, typically 5 to 15 people are brought together in a private, comfortable environment to engage in a guided discussion of some topic” (Babbie, 2010). Focus groups can be used at several points in problem-solving projects. They can be valuable for a diagnosis, but also in redesign and evaluation (Krueger & Casey, 2000). A focus group was formed to gain insights into participants’ views, perceptions and attitudes on the given research problem. With the knowledge gained by the semi-structured interviews with LQS employees, a focus group was formed to discuss the causes of the problem and possible solution designs. Members of the focus group were people who were responsible for the (solution of the) problem and people who were confronted with the problem. Members of the middle management level were also involved. According to Woolridge and Floyd (1990), involving middle management contributes to higher performance. This outcome can be grounded in two special mechanisms. First, middle management can provide sound input to the decision-making process through its more immediate knowledge of the opportunities and threats facing the company. Second, it increases the level of consensus on and understanding of the new strategy, which facilitates implementation.

A focus group was formed twice during this research. First, a focus group was used to create a discussion to gain a better understanding of the underlying problem. In addition, the consequences of this problem to the department and its customers were discussed and a program of requirements was constructed to list criteria that the design must meet (see Section 3.5). The second time, a focus group was used in Step 4 of the design process cycle displayed in Figure 2, to discuss the future work processes and how LQS can change from its current state into the desired state using Strategy Mapping (see Chapter 5). An evaluation of the different solution designs took place and adjustments were discussed and agreed upon.

3. PROBLEM DEFINITION

Step 1 in the design process as described in Figure 2 is the identification of the problem and motivation. The preliminary problem, discussed in Section 1.5, was the starting point for further analysis. "Defining the problem starts with the problem as stated by the principal, but the problem eventually agreed is not necessarily equal to this initial statement" (Van Aken et al., 2012, p.13). Problem analysis may show that the initial problem is only a symptom of an underlying problem, and that the initial problem cannot be solved without resolving the underlying one. The approach used for further analysis of the problem is in line with the methods used by Van Aken et al. (2007). During the semi-structured and unstructured interview sessions described in Section 2.4.2, the root problem was ought to be exposed. It was discussed whether there really was a problem and, if so, why it exists and why it has not already been solved within the organization.

"In general, a problem can be defined as a state of affairs in the real world with which important stakeholders are dissatisfied, while they believe that things can be improved" (Van Aken et al., 2007, p.47). The setting of the problem definition is typically a problem mess – a combination of perceptions of reality, value judgments on the basis of those perceptions and powerful or less powerful people making those judgments (Ackoff, 1981). The actual problem to be solved is one choice within such a problem mess. In order to make a selection, the problem mess needs to be represented. Therefore, the information gained during the interviews with managers, employees and customers was considered leading for the further analysis in this thesis.

The next sections will describe the specification of the problem from respectively the customers', management and employees' perspectives. Section 3.4 will discuss the problem mess and describe the focus of further research. This chapter will conclude with the objectives, goals, and design specifications from an empirical perspective, which is Step 2 of the design process as displayed in Figure 2.

3.1 SPECIFICATION OF THE PROBLEM – CUSTOMERS' PERSPECTIVE

Before the problem can be specified, various service-related concepts need to be explained. When discussing service-related terms, Kendall (2006) identifies distinct differences in the concepts of customer service, service quality and customer satisfaction. The framework outlined in Table 2 moves from the discrete service experience (customer service) to a broader evaluation of services (service

quality). “Customer satisfaction is a broad attitude about the organization, taking into consideration service, but also products and available alternatives” (Kendall, 2006, p.3).

Definitions of Service-Related Terms	
Customer service	Transactions aimed at meeting the needs and expectations of the customer, as defined by the customer: It is the service encounter or series of encounters.
Service quality	A global judgment or attitude relating to a particular service; the customer’s overall impression of the relative inferiority or superiority of the organization and its services. Service quality is a cognitive judgment.
Customer satisfaction	Overall evaluation of an organization’s products and services versus the customer’s expectations. Customer satisfaction includes but is not limited to evaluations of service quality. Customer satisfaction is an attitude.

Table 2: Definitions of service-related terms (Kendall, 2006).

In this research, it is important to understand what we are trying to influence or improve. It is the customer’s experience, his/her perception of LQS and his/her behavior that is the focus of the research and initiatives. LQS is looking for ways to improve its service quality, but as can be seen in Table 2, the service quality is a cognitive judgment in the eyes of the customers. The starting point of the problem specification is to research the service quality perceived by the customers. Furthermore, Table 2 shows that customer satisfaction includes but is not limited to the evaluations of service quality. This relationship can also be found in the Customer Satisfaction Survey (CSS), where support is only one aspect of the satisfaction grade. The remainder of this research will elaborate on this relationship, but first the problems need to be specified.

In addition to the results from the CSS (see Section 1.6), interviews with LQS customers were held to classify the specifications of the problems LQS faces regarding the service support they are providing. To classify the response criteria in evaluating the service quality, the model of Parasuraman et al. (1988) is used. According to the authors, the criteria seem to fall into five key categories, which are labeled ‘service quality determinants’, or SERVQUAL. The SERVQUAL model has been overwhelmingly accepted and then applied in many service organizations such as banks, hotels, hospitals and insurance companies. The model attempts to demonstrate the relationships that exist among important variables in real service quality delivery and perception situations. Moreover, the SERVQUAL model helps service providers by giving direction for improving service quality and satisfying customers. It must be stated

that the SERVQUAL model is not used to quantitatively research how LQS is scoring on each of these criteria but rather to qualitatively categorize the responses into the criteria to investigate underlying problems and identify opportunities for improvement. Based on their expectations of what the service experience will be like, the customer will confirm or disconfirm his or her expectations. Service quality dimensions are measured in various ways. The descriptions of the SERVQUAL dimensions are given in Table 3.

Descriptions of SERVQUAL Dimensions	
Reliability	The ability of the organization to perform the promised service dependably and accurately. In its broadest sense, reliability means the service provider carrying out the service it has promised: promises about delivery, service provision, problem resolution, and pricing. Service customers want service providers to keep their promises about service outcomes and attributes.
Responsiveness	The organization's willingness to help customers and provide prompt service. It emphasizes attentiveness and promptness in dealing with customers' desires, questions, complaints and inconveniences. Responsiveness is achieved through flexibility and having the ability to modify services to meet customers' expectations and needs. Examples include waiting time, or the time it takes to complete a transaction.
Assurance	The knowledge and courtesy of the employees and their ability to inspire trust and confidence in the customers of the organization. Examples include greeting and thanking customers for their business or the knowledge level of employees. Although it is rated as less important than reliability, assurance is related to higher levels of customer commitment.
Empathy	The caring and individualized attention the organization provides to its customers. Examples include acknowledging the customer's needs or frustrations when resolving problems. Although it is rated as less important than reliability, empathy is also related to higher levels of customer commitment.
Tangibles	Tangibles are defined as the physical facilities, equipment and appearance of service employees, and written materials.

Table 3: Descriptions of SERVQUAL dimensions (Parasuraman et al., 1988).

Appendix VIII describes the coding process of how and why responses are categorized into the different SERVQUAL criteria. Many responses could fall into several dimensions and could be labeled by multiple

coding labels, but the most applicable dimension and coding labels are assigned. An overview of the coded responses can be found in Appendices IX-XI and the most important responses to investigate underlying problems and identify opportunities for improvement will be given in the remainder of this chapter.

As can be seen in the responses provided during the interviews with LQS customers in Appendix IX, customers feel LQS is very internally focused. Most customers are concerned about LQS' reliability and responded almost in the same way; Customers 1 and 2 best exemplify this:

> *Customer 1: "In my opinion, LQS is too much focused internally and not [concerned] about customer wishes. They are only focused on survival and processing samples."*
> *Customer 2: "Because of the tremendous growth LQS is facing, I think they are really focusing on operational problems and do not think about what the customers expect."*

Customers are not sure where to go when they have questions for LQS. They prefer a Single Point of Contact (SPOC) to address their requests and expect a Service Desk to proactively inform them about changes and delays:

> *Customer 1: "There is a clear difference between Micro and Chemistry. At Micro, there is a central email address for my questions and requests are adequately handled. At Chemistry there is much [that is] unclear and we do not know whom to contact for specific questions."*
> *Customer 4: "When SLAs are probably exceeded, I would like to be informed. This can mean out-of-specs or re-analysis. Thus far, this is not happening properly."*

Furthermore, customers mention the lack of individualized attention they perceive from LQS. They feel LQS employees do not have a proper understanding of what its customers are doing and what impact proper and timely results have on the release of products:

> *Customer 1: "I expect from LQS to deeply understand the customer, what is important for them, and critical issues they face."*
> *Customer 4: "I do not think a lot of employees working at LQS know what we are exactly doing and how important adequate and timely results are to us."*

In summary, LQS customers feel that LQS is internally focused and they expect more individualized attention. A SPOC, to which all issues and problems can be directed, could provide a solution for most of these problems. So far, customers do not know whom to address at LQS so they address multiple

persons. They see a lack of ownership of the issues and problem at LQS. Furthermore, a single point of contact (SPOC) could act as a proactive communication channel that informs customers about changes and delays.

3.2 SPECIFICATION OF THE PROBLEM –MANAGEMENT PERSPECTIVE

In the research of Parasuraman et al. (1985), the authors conclude that many of the executive perceptions of what customers expect in quality service are congruent with the customer expectations. However, discrepancies between executive perceptions and customer expectations existed. To research the differences and congruencies between LQS management and its customers, the SERVQUAL model is applied to the interviews with managers and displayed in Appendix X. The most important problems and opportunities for improvement in the different SERVQUAL dimensions are discussed below.

Communication is an important factor when discussing problems with low service performance, both internally and externally. In particular, the impression of the outside world is an important factor. From the management point of view, there is a tendency within LQS to look internally and investigate whether internal processes can be optimized instead of asking what the customer wants. There is a perceived lack of being a point of contact for customers. The cause of this problem is the growth of FrieslandCampina in the last five years (detailed figures can be found in Appendices I and III). Five years ago, managers were still heads of departments and were able to serve all customers and travel to those customers. Together with the growth of FrieslandCampina and the growth of LQS, the customer base of LQS increased substantially and was not manageable with the number of employees present. In the early part of this growth phase, a project called Customer Interface was established. This project was meant to increase customer contacts at a lower level in the organization to get a better idea what the customer wants. During this project, groups of six LQS employees from various levels of the organization visited customers on a regular basis and talked about operational and strategic topics. During the next stage of LQS' growth, this project was terminated because the people involved were busy with the internal survival of the department. The management team of LQS agreed to focus on internal survival, but lately it has encountered the problem of missing contact links with customers. The management team is in search of a new course of action to restore contact with customers, but it does not want to reintroduce the Customer Interface project due to the bad experiences and feedback from customers. Resulting from this need to increase LQS' service performance, the view of management is to focus more on the needs of the customers and FrieslandCampina in general.

Manager 1: "I have the feeling that the outside world thinks LQS is more concerned with itself; think there are a lot of operational problems. Customers are completely disconnected [with] whom to approach at LQS and where to drop questions."

There is a need to focus on customer support services. Because the organization has grown substantially, a number of undesirable situations have appeared. Customers can enter at every level in the organization. Manager 1 thinks approachability is in itself good, but when customers can enter at all levels of the organization it means that they don't get a consistent answer: what is assured in one department or area cannot be fulfilled by another department or area. This is the point at which LQS loses overview; by giving customers the opportunity to enter the organization at different levels, this results in inconsistent answers being provided (reliability dimension). In the eyes of the managers, LQS does not have an overview of what customers want and it is not connecting with them on an operational and strategic level. On the management-strategic level, efforts are made to restore these connections and LQS is still in search of a solution on the operational level to streamline customer contacts.

Manager 1: "LQS has to get rid of the model where every team leader can be approached. Some team leaders respond quickly and others wait some time before responding. Some team leaders give appropriate responses and others fail to do this. Team leaders should not be the interface with the customers anymore and should focus on achieving operational excellence within analytics services."

According to the managers, there is a need for more structure in channeling customer questions so that these enter the organization at a required level and are also dealt with at a required level. In their opinion, the new model should channel customer questions and not be a bureaucratic process with a lot of mailbox functions but be quick and effective. The goal of customer support is to capture (daily) operational questions and to deal with these questions in the most effective way possible without internal mess and frustration. Within the management of LQS, there is a vision where the analytical services and business support are designed with unique work processes: the focus within analytical services is on operational excellence, where quick and cheap delivery of services is central; the focus within the business support is on customer intimacy, where quick and short personal links to the customers are required. The manner of approaching customers is significantly different between these parts of LQS.

Manager 2: "I would like to introduce a central mail and telephone box. Now everything enters the organization at five team leaders and it is not clear who should handle issues, who is around and who is not around. What a possible step further would be is that the system provides an automatic answer within one hour to the customer with information about the steps to be taken."

In line with LQS customers, managers see responsiveness as a significant problem in providing good service to customers. Managers have thought about possible tangible solutions, which will be taken into account in the designing phase of this thesis.

3.3 SPECIFICATION OF THE PROBLEM – EMPLOYEES' PERSPECTIVE

In addition to input on a strategic (management) level, operational problems from the perspective of LQS employees are also subjected to the SERVQUAL model and are summarized in Appendix XI. When researching the employees' perspective on the specification of the problem, a similarity can be seen in responses regarding the different SERVQUAL criteria. For example, the following response speaks to reliability:

Employee 2: "Often people assume that their co-workers will take responsibility for certain questions/issues. Communication is an important factor here."

LQS employees agree that the responsiveness to customers is low, often because the employees lack clear guidelines and customers contact multiple employees with their requests:

Team leader 1: "Often questions are addressed to more persons because customers do not know whom to contact. Especially if you have to direct a lot of team members, this is pretty distracting."

Team leader 1: "A lot of questions enter the organization and [are] different in nature. All team leaders have a very busy schedule and questions are continuously addressed, even when you are off from work. There is always a risk that you miss a question but you do your best to respond. Often it is not possible to respond right away, you have to do some research and contact people. During that process you sometimes forget what you have to do because issues arise on the work floor. This is very frustrating for the customer; you can say we miss structure to cope with these issues."

In summary, LQS employees agree that there is a lack of ownership and a lack of uniform work processes in providing service to customers. This results in low responsiveness and reliability. According to the employees, a SPOC and clear guidelines would remove many of the problems that are currently being encountered.

3.4 THE PROBLEM MESS

As already discussed at the beginning of this chapter, in order to identify the problem, the problem mess needs to be represented. Therefore, the information gained during the intake and orientation must be structured and conveniently presented (Van Aken et al., 2012). The format used to structure and present the problem mess is the cause and effect diagram. A cause and effect tree provides freedom to relate causes and effects and is able to display their chronology (Van Aken et al., 2012). Based on the interpretation of data and the perspectives of stakeholders, a cause and effect diagram is constructed and represented in Figure 5. According to Van Aken et al. (2012), the main function of the diagram is to select a problem from the problem mess that will be considered as a business problem in the following phases of the regulative cycle.

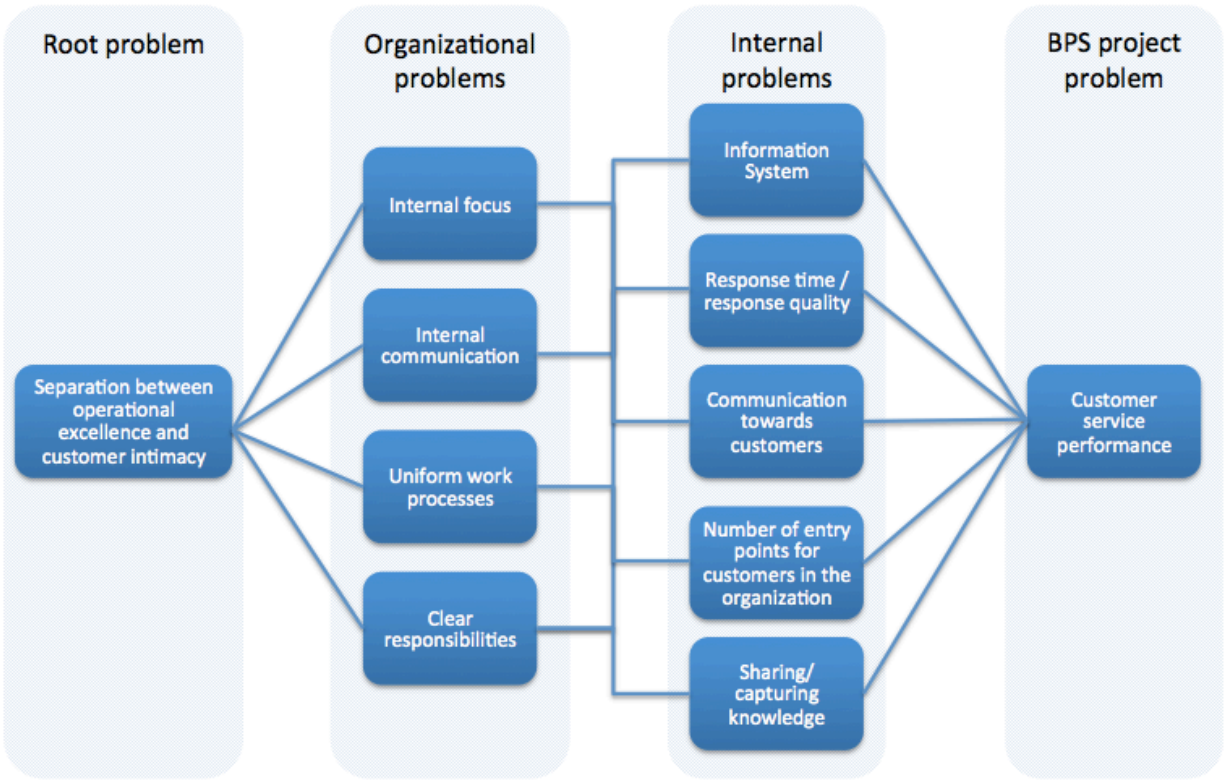

Figure 5: Cause and effect diagram related to the root problem at LQS.

The problems that are identified during the interview sessions with LQS employees, management and customers can be classified among several types of problems, such as the root problem, organizational problems, internal problems and the Business Problem Solving (BPS) project problem.

Root problem

One of the first issues which arose during the interviews was the lack of separation between the focus on operational excellence and customer intimacy. The core business activities of many team leaders are to lead their teams and focus on operational excellence and their daily operations. But instead, teamleaders are responsible for many customer contacts and are very often the interface between the customers and LQS. In addition, other LQS employees are continually dealing with customer issues, while their main focus is supposed to be on solving internal problems. The organizational climate stresses the importance of survival and resolution of internal problems. Thus, employees are not aware of how the service they are providing affects the customers and they are not aware that customers are dependent on high quality, timely results of analyses and the resolution of their requests/issues.

Organizational problems

The lack of separation between operational excellence and customer intimacy results in a strong internal focus. Many customers feel that LQS employees are more concerned with their internal problems and do not focus on customer problems. Within LQS, there is a lack of ownership of customer problems when customers address their questions to LQS. It is not clear who is responsible for which type of questions or for which step in the resolution process. Communication among the employees is insufficient and processes are not constructed to systematically and uniformly tackle customer problems.

Internal problems

The organizational problems lead to many internal problems. One of them is the number of entry points at LQS. Because of unsatisfactory communication, responsibilities and processes, customers are completely unaware of whom to approach at LQS with questions. The lack of clear responsibilities and the presence of bad communication lead to long response and resolution times. The lack of ownership leads to insufficient capturing and sharing of knowledge, and there is no central system that serves as an (online) knowledge base. Many of the organizational and internal problems lead to a low quality of communication with customers; some employees respond quickly while others wait some time before

responding, and some team leaders give appropriate responses while others do not. The root problem and the resulting organizational and internal problems lead to the Business Problem Solving (BPS) project.

BPS project problem

The result of the root, organizational and internal problems is an unsatisfactory service performance. Apart from the relationships previously described, there are many more direct and indirect relationships in the root problem regarding organizational and internal problems. Chapter 4 will include a theoretical investigation of which critical components organizations should focus on to increase the customer service performance that meets the objectives, goals, and specifications that will be described in Section 3.5.

The next step in designing a solution for the problems is to identify objectives, goals and design specifications that can help LQS tackle the problems they face and optimize the SERVQUAL dimensions.

3.5 OBJECTIVES, GOALS AND SPECIFICATIONS OF THE SOLUTION

The main objective of this research is to create an interface between LQS and its customers that will lead to increased service quality and customer satisfaction. The main goal is to release team leaders of many customer contacts, so they can focus on leading their teams and daily operations. Uniform work processes need to be constructed for employees who deal with customer issues, so they know what is expected of them and also what is not expected. For each of the steps in dealing with customer issues and problems, responsibilities and ownership must be clear. This can be achieved by starting with literature research of customer service management and by guiding internal and external processes to improve LQS' customer service performance. The analysis will be based on theoretical insights from the academic literature, adjusted to the specific situation by involving LQS employees and customers in the designing process. One goal is to provide clear guidelines and an infrastructure that lays the foundation for increasing the service quality at LQS. Guidelines will be discussed with employees and, based on these discussions; ownership and responsibilities will be appointed in the various steps. Literature will be analyzed for guidance on how LQS can transform from its current state to a future state with an increased service quality.

Roozenburg and Eekels (1998) state that a design project often contains indications of the intended functions, the intended users and the usage environment. In the course of the design process, these

indications should be worked out into a program of requirements, which is a list of criteria that the design must meet. The program of requirements usually includes several kinds of criteria, which play a role in the assessment and selection of design proposals. The program of requirements thus limits the range of possible solutions, and it is the basis for the assessment of the degree to which a design meets its purpose. Table 3 indicates the program of requirements for the solution design at LQS.

Requirements
• The solution should decrease the number of entry points at LQS
• One entry point is preferred over two, two over three, etc.
• The design should decrease average response time
• The solution should increase LQS' availability to customers
• The design should contribute to establishing clear processes
• The design should contribute to establishing clear responsibilities
• The operation should facilitate internal and external communication
• The outcome should lead to an increase in service performance
• The design needs to be able to support the capture and sharing of knowledge
• QA employees should be able to monitor processes in the solution
• The solution should clearly communicate its function and possibilities
• In the solution, possibilities to appoint ownership of problems should be present

Table 4: Program of requirements.

Given the specifications of the design and the BPS project problem, in the next chapter a theoretical investigation will follow to research the academic literature on Service Desk theory to identify if and how setting up a Service Desk at LQS can meet the objectives, goals and specifications that are set in this chapter. During the interviews, focus group sessions and participant observations in various departments at FrieslandCampina, strong indicators were identified that setting up a Service Desk would fulfill the objectives, goals and specifications of the design. Normal design studies elaborate on potential solutions to the problem but this study focused on one solution in Step 3 of the design process.

Van Aken (2012) states that problem-solving in organizations is often carried out in a craftsman-like way, on the basis of business experience and common sense. The theory described by Van Aken (2012) should be used critically, as far as is appropriate for the business problem in question. The theory should be used as the basis for the design of the specific setting. Business problems are strongly dependent on

the value judgments of various stakeholders, and they are connected with the material and immaterial interests of theses stakeholders. These value judgments of the stakeholders influenced this study in a sense that it is chosen to deviate from the steps described by Van Aken (2012) in such a way that instead of elaborating on potential solutions, one specific solution (the Service Desk) is chosen for further analysis. This decision-making strategy is described by Simon (1956) as 'satisficing'. Satisficing is a decision-making strategy or cognitive heuristic that entails searching through the available alternatives until an acceptability threshold is met. The various stakeholders see setting up a Service Desk as the best solution for the described problems.

The empirical investigation provides the input for the theoretical investigation for the next steps in the design process In Figure 2. In Chapter 4, a detailed discussion of the Service Desk as a solution for the problem, as described in Step 3 of the design process in Figure 2, will be given.

4. IMPROVING CUSTOMER SERVICE

The empirical problem analysis has been discussed in the previous chapter. This chapter encompasses the theoretical analysis. According to Van Aken et al. (2007), the empirical and theoretical analyses are related to each other and should strengthen each other. Based on the root problem, resulting from the cause and effect tree (Section 3.4), the objectives of the solution (Section 3.5) and the preliminary idea of LQS to establish a Service Desk, one can list the theoretical discipline to be analyzed or solved. First, Service Desk literature will be researched and specifications will be compared with the objectives, goals and specifications of the design described in Section 3.5.

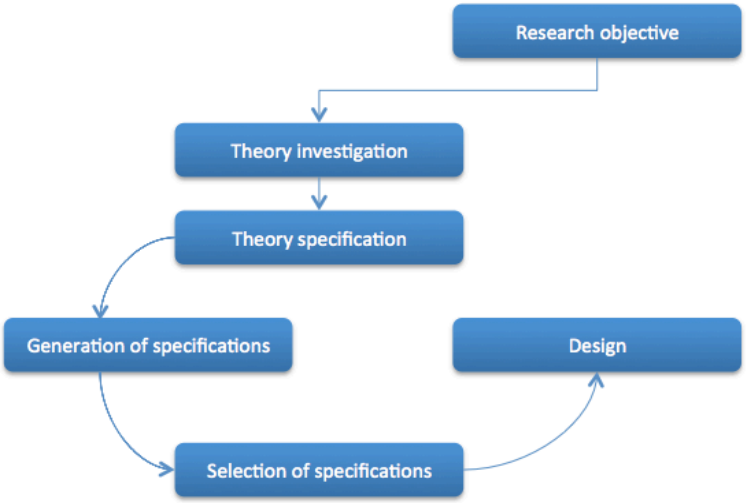

Figure 6: Theoretical investigation.

The definition of a Service Desk is provided by Knapp (2014), who based her theories on 20 years of research, Service Desk-related consulting and training. A Service Desk is "a single point of contact within the company for managing customer incidents and service requests" (Knapp, 2014, p.2). Companies that attain high levels of customer satisfaction have learned that many factors influence how customers perceive their experiences with the Service Desk. These companies have also learned that they must continually monitor and manage their level of service because customer expectations are continuously changing and increasing. According to Knapp (2014), companies must pay attention to four critical components - people, processes, technology and information - that determine a Service Desk's success.

Figure 7: Service Desk components (Knapp, 2014).

People

The first and most important component of the Service Desk is people. The people component consists of the staff and structure put in place within a company or department to support its customers by performing processes. Although clearly defined processes and technology enable people to be more efficient and effective at a Service Desk, often satisfying customers requires human qualities such as empathy, patience and persistence. Successful Service Desks hire and train people who have good soft skills, who sincerely enjoy working with customers and who like helping others solve problems (Knapp, 2014).

Processes

The processes performed by people are the next important component of a successful Service Desk. Processes determine the procedures people follow, relative to their specific area of the business. A process is a collection of interrelated work activities that take a set of specific inputs and produce a set of specific outputs that are of value to a customer. A procedure is a step-by-step, detailed set of instructions that describes how to perform the tasks in a process (Knapp, 2014). The directions that show how to record information about an incident or how to determine a resolution are examples of procedures. In other words, processes define the tasks to be performed and procedures describe how to perform the tasks. The rigorous, consistent use of processes leads to customer confidence, employee satisfaction and, ultimately, process improvement.

Technology

The third integrated component of a successful Service Desk is technology. Technology represents the tools and systems people use to do their work (Knapp, 2014). Service Desk technology includes the data collection and management systems, monitoring systems and reporting mechanisms that employees and managers use to perform processes. Successful Service Desks use technology to capture, store and deliver the information needed to satisfy the needs of both its customers and the company.

Information

The final component of a successful Service Desk is information, or data that is organized in a meaningful way. People need information to do their work. People working at a Service Desk must understand that the data they collect on a daily basis becomes information. This information is not only used to track outstanding incidents and service requests, but it is also used to measure the overall

performance of the Service Desk and customer satisfaction with the department and the company. Forward-thinking companies use the data they capture at the Service Desk to spot trends and discover causes of incidents. By doing so, companies can increase customer satisfaction, enhance productivity, improve the quality of products and services, increase the efficiency and effectiveness with which services are delivered and create new products and services.

The objectives, goals, specifications, participant observation notes and the preliminary research on Service Desk theory were discussed during a focus group session. During the discussions between the members of the focus group, it was agreed that setting up a Service Desk, as a potential solution for the problems, was the most likely alternative for increasing service performance. It was agreed to discontinue the search for alternative solutions and also that the design and further investigation should focus on the four critical components described above. The next sections of this chapter will provide a thorough academic literature research of the four critical components and will provide a detailed solution design (Step 4 of the design process in Figure 2).

4.1 PEOPLE: THE KEY TO EFFECTIVE SERVICE ENCOUNTERS

Catanzaro and Salas (2006) state that while many factors are important in improving service quality, customer perceptions of the quality of service are strongly influenced by the social interactions they experience with employees. These service encounters are transient, emergent events that are challenging for organizations to manage and control but vital to organizational effectiveness, customer satisfaction and employee job satisfaction. “The interpersonal transaction between a customer and an employee in transmission of a service is known as the service encounter” (Catanzaro & Salas, 2006, p.197). The customer may see the employee as the organization and form an image of the organization based on the employee’s behavior. The service encounter plays an extremely important role in customer evaluations of service quality. Customers’ opinions about the quality of service are largely based on their experiences interacting with service employees.

Heskett et al. (1997) found a high correlation between employee satisfaction and many other measures, such as growth and profitability, and customer satisfaction and customer loyalty. The most important factor affecting employee satisfaction was found to be capability: employees are happiest when they feel effective and capable in their jobs. A sense of autonomy, choice and control on the part of employees is associated with feelings of responsibility and is correlated with higher intrinsic motivation and job satisfaction, according to Champoux (1991). Fogli (2006) identified eleven customer service

competencies by integrating job analysis, literature and focus group research (see Appendix XII). Combining the customer service competencies described by Fogli (2006), capabilities of LQS employees as observed and opportunities identified during the interview sessions, LQS should focus on Service Desk employees that score high on the empathy and assertiveness competencies (see Table 5).

ServiceFirst: Customer Service Competencies	
Empathy The ability to think and feel as the customer does in order to better identify and fulfill customer needs and better handle customer complaints	• Listens to and understands the customer's problems; does not become defensive in complaint situations • Is able to respond to both the content and feeling of a customer's message • Is able to see situations from the perspectives of both the customer and management • Expresses sympathy and concern for customer problems
Assertiveness/Dominance The tendency to take the initiative and exercise leadership in customer-oriented situations	• Is self-confident in dealing with customers • Actively offers assistance to customers rather than waiting for them to ask for help • Takes the lead when working on group projects

Table 5: ServiceFirst: customer service competencies (Fogli, 2006).

During the participant observations at other Service Desks, it was concluded that one can focus on two different important aspects concerning Service Desk employees. A focus can be on (1) the one person that has profound knowledge about both microbiological and chemical topics to deal with most of the questions that enter the organization. However, because such a person is very difficult to find and can be used for other important tasks at LQS, a focus should be on (2) employees that know where to get the information and can influence others to get things done. Other components of a successful Service Desk (i.e. processes and technology) can facilitate the Service Desk employee, but a start should be made by focusing on two competencies: empathy and assertiveness/dominance. Empathy is the ability to think and feel as the customer does and is related to the individualized attention customers expect

from LQS (see Section 3.1). More details about how to identify and train these employees will be provided in Chapter 5. The second important competency is assertiveness, with a focus on exercising leadership in customer-oriented situations. When a customer addresses a question to the Service Desk, the Service Desk employee will try to resolve the issue using his or her knowledge and skills and provide the customer with a resolution of the question. When the Service Desk employee is not able to tackle the issue of the customer, he or she will act as a problem coordinator (dispatcher) and forward the problem to the problem manager, specialist or escalation manager. His or her responsibility is to act as a dispatcher, logging customer contacts and routing the contacts to the appropriate level of problem manager, specialist manager or escalation manager. When acting as a dispatcher, the employee must efficiently follow clearly defined procedures and must enjoy helping other people. A detailed description of the tasks and responsibilities of the Service Desk employee (or coordinator), problem manager, specialist and escalation manager can be found in the Service Desk manual in Appendix XIV that has been developed for LQS.

4.2 PROCESSES

The processes that people perform are the next important component of a successful Service Desk. A process is a collection of interrelated work activities that take a set of specific inputs and produce a set of specific outputs that are of value to the customer (Knapp, 2014). Understanding the overall process enables the employees of LQS to see where their jobs fit into the process. With processes (Knapp, 2014):

- Roles and responsibilities are clearly defined;
- People understand what they are expected to achieve; and
- Required information is captured in a meaningful and useful way.

Processes can be visualized by using flowcharts. With the information captured during the participant observations at other Service Desks, flowcharts were constructed to show the sequence of tasks that occur in a process. The flowcharts are constructed for the issue, problem, specialist and escalation management process to ensure uniform work processes and establish clear responsibilities, which are one of the problems facing LQS, as is outlined in Section 3.5. A comprehensive overview of the processes and the responsibilities that make up a large part of the solution design can be found in Appendix XIV (the Service Desk manual). One example, the issue management process that is applicable to the Service Desk employee, is shown in Figure 8, and the steps in the flowchart are subsequently described.

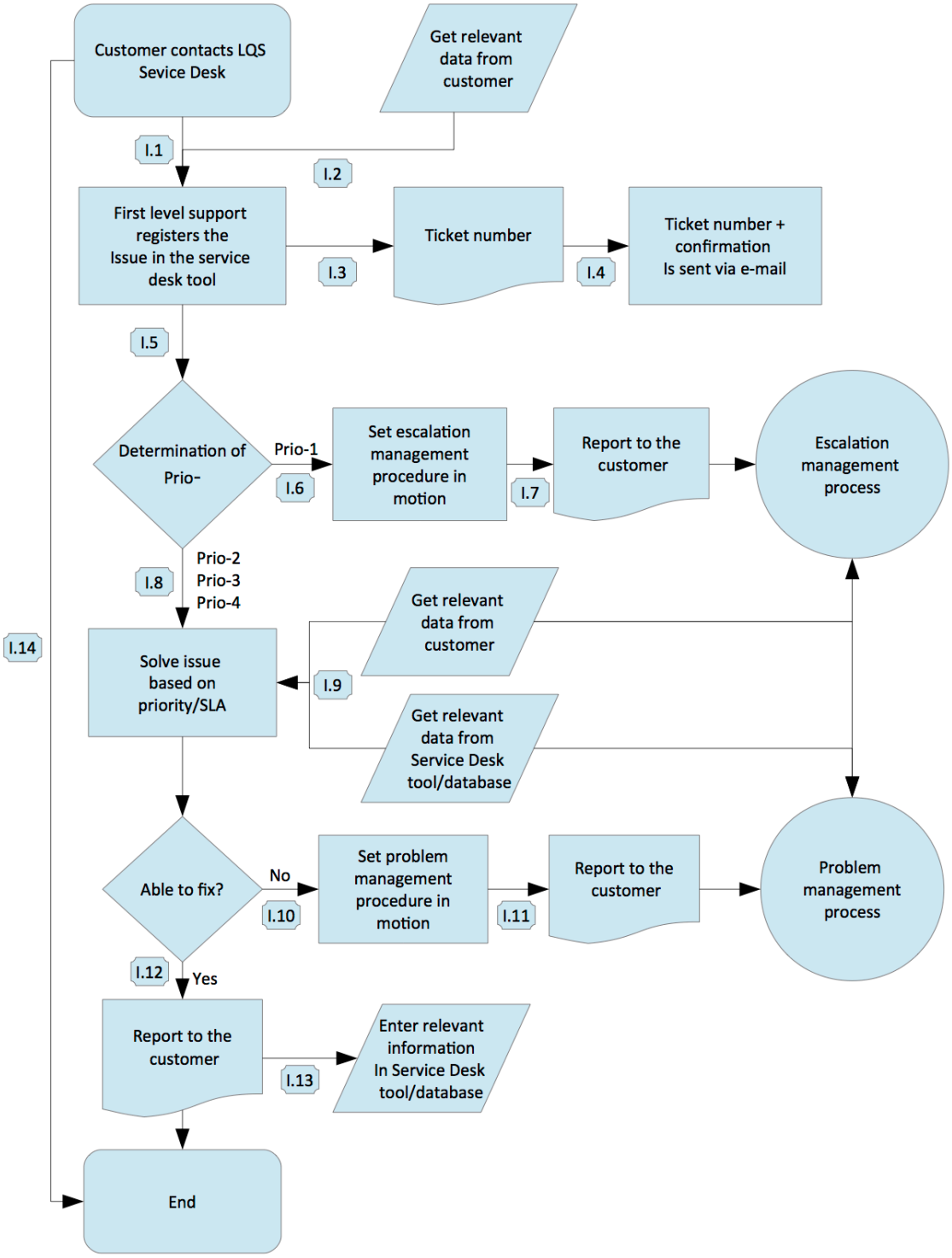

Figure 8: Issue management process.

I.1 The customer contacts the Service Desk, providing all relevant information available. The customer can contact the LQS Service Desk via telephone (with voicemail) and email. Service Level Agreements (SLAs) have already been constructed to determine the availability and response time of the Service Desk.

I.2 The Service Desk determines whether additional information is needed.

I.3 The Service Desk will register the issue in the Service Desk support tool, and the tool will return an incident number. An email will automatically be registered in the Service Desk tool and a ticket number will be generated. Incoming calls or voicemail messages will be manually entered in the Service Desk tool by the Service Desk employee.

I.4 The Service Desk tool will automatically sent a confirmation to the customer with the ticket number that states that the issue is in progress and within which timeframe a response can be expected.

I.5 The Service Desk determines the type and priority of question/issue based on knowledge, experience and information provided by the customer.

I.6 When the Service Desk employee sets Prio-1, based on all relevant information, the escalation management procedure is set in motion.

I.7 The customer will be informed that the issue has been escalated and the customer will be given an updated response and resolution time. During the escalation management process, the customer is updated frequently.

I.8 Based on the priority and waiting times of issues and based on SLAs, a consideration must be made of which issue should be processed.

I.9 The first level support of LQS will try to solve the issue using his/her knowledge and skills as well as the knowledge database found in the Service Desk tool and additional information from the customer.

I.10 If the issue is solved, first level support will close the issue in the Service Desk tool. If it is not solved, the issue is assigned to the second level support/problem manager. Ownership of problems is assigned to a problem manager based on the classification of the problem. Assigning the issue is based on the following classifications: impact, functional area, priority, and type of issue.

I.11 The customer will be informed that the issue has been escalated and the customer will be given an updated response and resolution time. During the problem management process, the number of times the customer is updated depends on the priority classification.

I.12 The Service Desk support should devise a solution within the boundaries of the SLA and report to the customer.

I.13 First-level support registers the solution information regarding the resolution of the issue in the Service Desk tool and sets the status to ‘closed’.

I. 14 Trend analysis is applied by the Service Desk employee to see if SLAs are met. Evaluation of trends will determine readjustments of procedures or readjustments of the SLAs.

The processes are clearly described, so they can be executed uniformly. As already stated, the problem, specialist and escalation management procedures can be found in Appendix XIV.

4.3 TECHNOLOGY

A Service Desk can use technology to gather, organize and use information about its customers, issues and problems (Knapp, 2014). As stated in Section 2.4.4, a workshop was attended at the headquarters of FrieslandCampina in order to understand the Service Desk tool that the different departments (ICT, HR and Finance) were working with. This tool (Assyst software) facilitates the needs of LQS in increasing its service performance, and it has been decided to describe this tool with several screenshots that were made during the workshop. More screenshots and specifications of the tool can be found in Appendix XV.

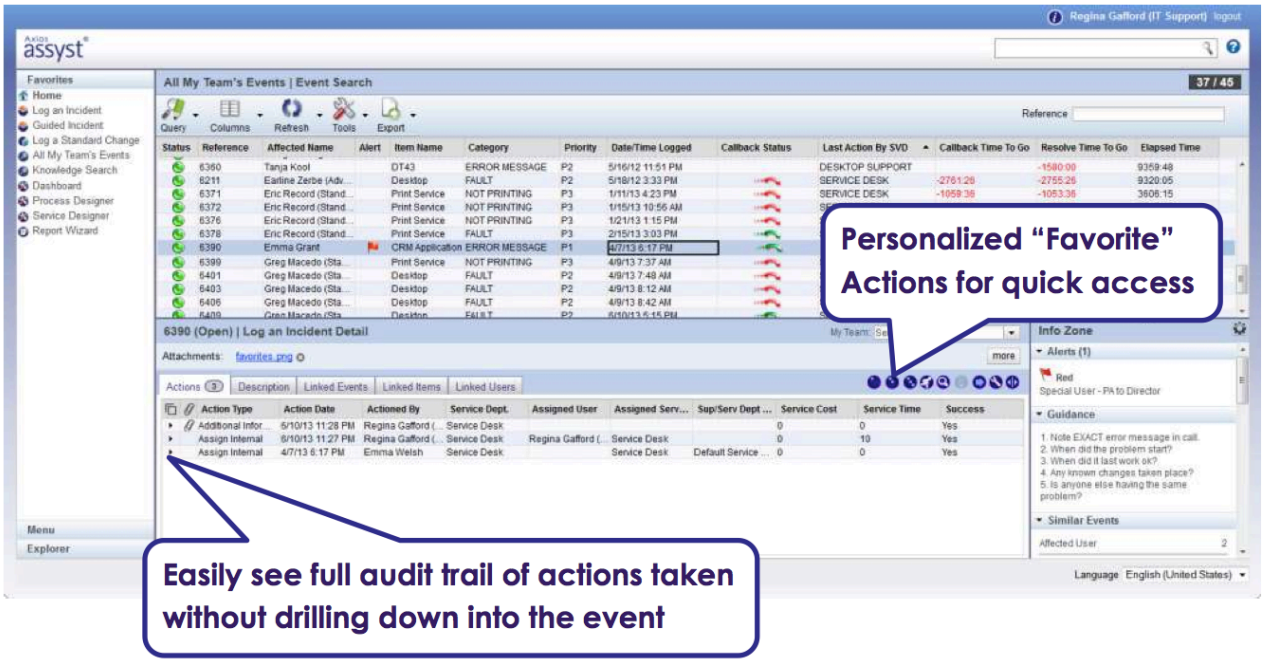

Figure 9: Screenshot #1 of the Assyst tool.

Figure 9 shows how the outstanding customer requests, with their resulting ticket numbers, are displayed in the tool. The filters and columns are configurable, so the Service Desk employee can enter

all relevant information in the tool, such as status, ticket number, last update, summary, registration date, urgency, ownership, etc. When the Service Desk employee selects one of the tickets, he or she can automatically check all the actions that have been taken for that specific request. The Service Desk employees can easily see which of the tickets have been forwarded to the problem, specialist or escalation managers and he or she can track the status of resolution. Tickets are ordered according to their priority, so Service Desk employees know which ticket to deal with first. Furthermore, information about the SLAs are displayed, so the Service Desk employees understand the urgency and time-to-resolution before SLAs will be breached.

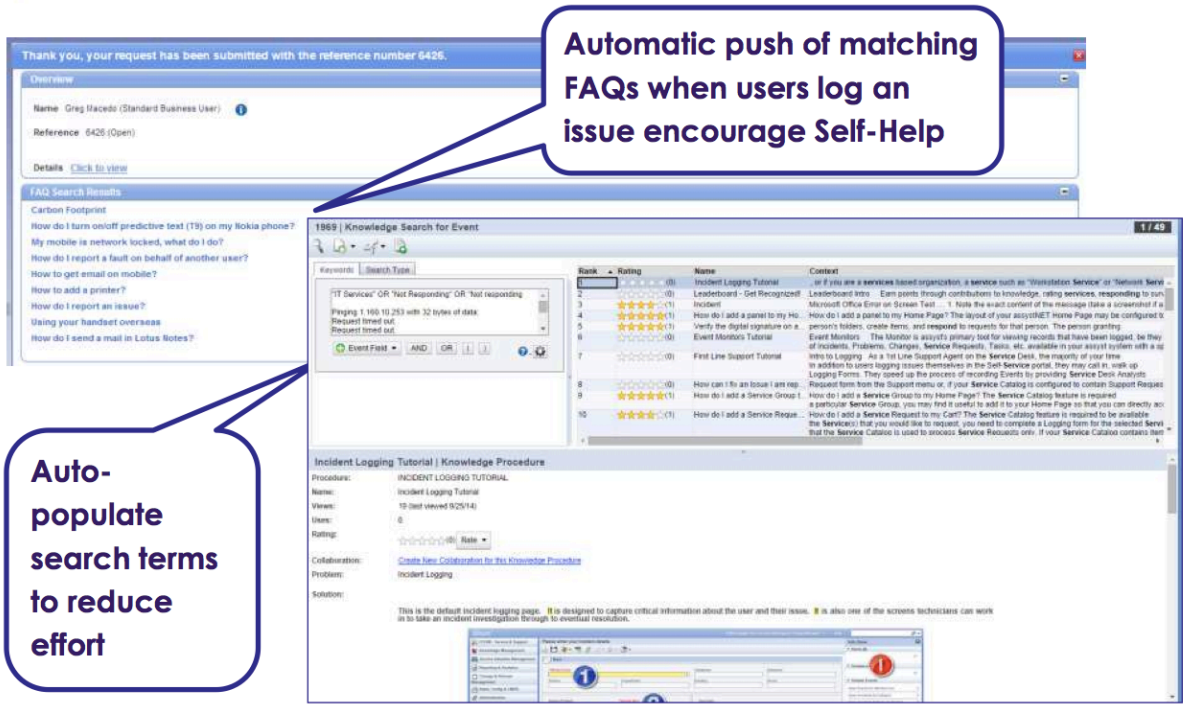

Figure 10: Screenshot #2 of the Assyst tool.

The tool opens incoming emails and it can identify (a combination of) words and automatically push to the screen previous similar requests and their resolutions, so the Service Desk employee can easily identify the type of request and the resolutions of prior, similar requests. Figure 10 shows that the tool automatically pushes FAQs and other resolutions related to the request, to help the Service Desk employee with the first-line resolution of the issue. When customers address their questions to LQS via telephone, the Service Desk employee has to gather all the relevant information from the customer and manually enter the information into the tool. The tool will serve as an (online) knowledge base to increase the knowledge available for the Service Desk and decrease the response and resolution time.

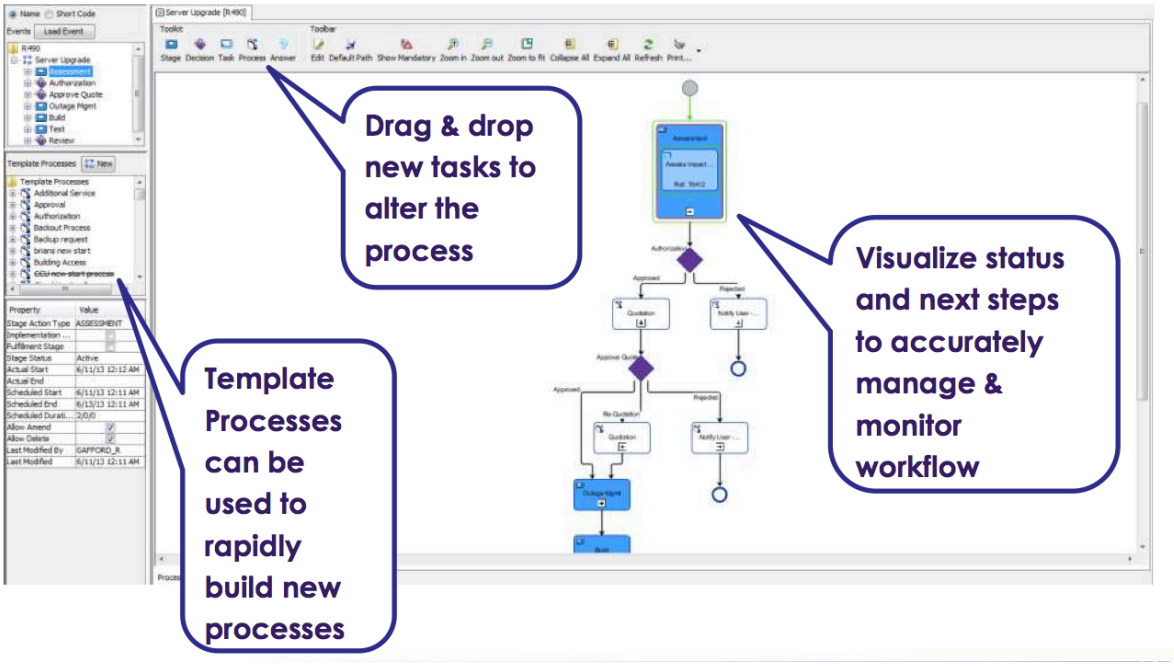

Figure 11: Screenshot #3 of the Assyst tool.

Figure 11 displays how a Service Desk employee can easily enter the processes described in Section 4.2 into the tool, so the problem can be easily forwarded to the next level with a single click of a button. It must be stated that the Service Desk employee can see all the outstanding tickets, and only if he or she forwards a ticket to the next level will receive a notification of the issue/problem forwarded.

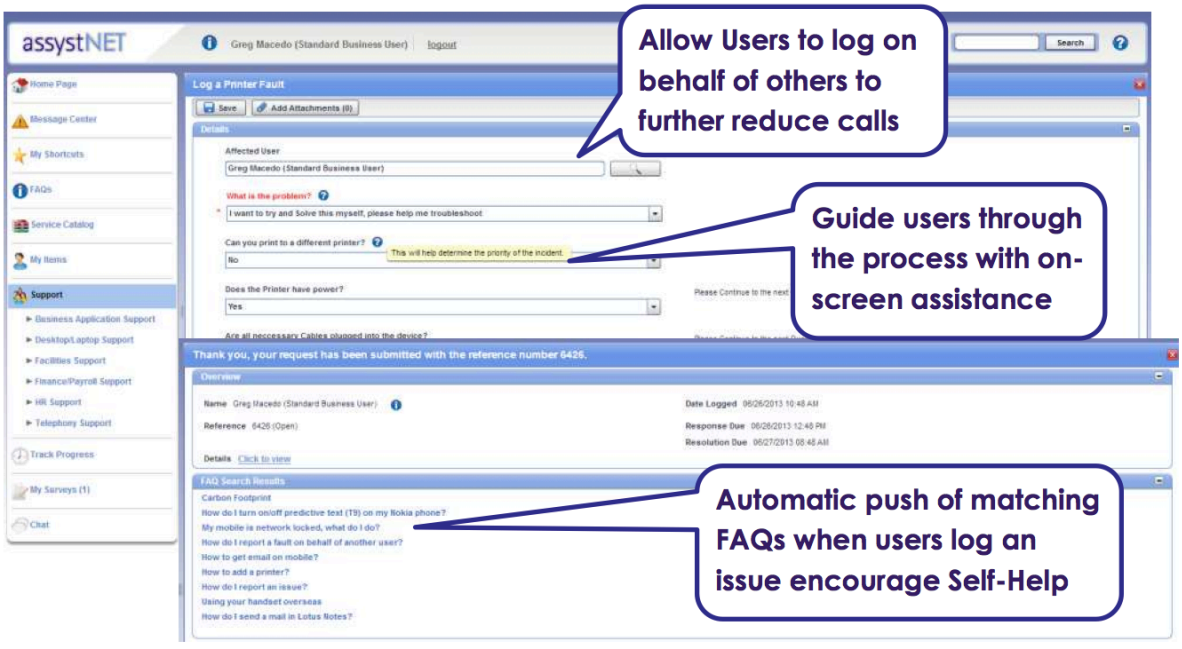

Figure 12: Screenshot #4 of the Assyst tool.

Another feature of the Assyst software tool is the fact that customers can use the tool as an end-user portal. When they have questions, customers can login to the tool and be directed towards the information they need. Drop-down menus can be constructed and documents can be added so most of the information that the customer needs can be found without requiring them to contact LQS. This way, many of customers' questions are handled within this tool. The tool serves as an (online) knowledge base and Frequently Asked Questions (FAQs) related to the customer's question are pushed to the screen to encourage self-help. The fact that other Service Desks at FrieslandCampina (ICT, HR and Finance) already use this tool means that customers already know how to use the tool and have login credentials. FrieslandCampina employees use the tool for ICT, HR and Finance related requests so employees from FrieslandCampina will be able to work with the tool, providing a great advantage in dealing with customers who already know how to use the tool.

The next section will describe the information component as the last important ingredient for a successful Service Desk.

4.4 INFORMATION

According to Knapp (2014), data and information are resources, as are well-trained employees, well-defined processes and a well-implemented technology. Service Desks use information to anticipate and prevent incidents. Anticipation can be based on information gathered from complaints, surveys or data captured in the Service Desk tool. "An organization that makes internal changes based on feedback from its external environment is likely to remain attuned to customers' wants and expectations, thus contributing to its long-term effectiveness and survival" (Vance, 2006, p.49). Lemon (2006) states that many successful companies today are learning to view customer complaints as valuable opportunities for quality improvement. Customers who make the effort to complain may be difficult to deal with at times, but they are likely to feel more connection with the company than ambivalent customers, and they can offer valuable insights and data that other customer groups would not. "Improved and more embedded customer feedback loops can improve products and service delivery" (Lemon, 2006, p.128). According to Vance (2006), surveys can be of great value in receiving feedback from customers. In designing surveys of any type, it is important to consider survey contents, the administration process and the population to be sampled.

Knapp (2014) states that technology can extend the Service Desk's ability to gather, organize and use information. Data can be used to perform trend analysis to avoid incidents and to enhance the organization's productivity and its customers' productivity and satisfaction.

Figure 13: Screenshot #5 of the Assyst tool.

Figure 13 displays several dashboards that can be easily constructed in the Assyst tool to create performance measures or indicators that reflect characteristics such as efficiency, effectiveness and quality. LQS can create many reports related to the source of requests – for example, when Service Desk employees see a recurring request from a specific customer related to a specific topic – so they can research possible underlying problems. Data and information are used to continuously improve processes and optimize service quality.

4.5 CLIMATE FOR SERVICE

The organizational and internal problems can be resolved by introducing a well-structured Service Desk at LQS, but additional research must be conducted with regard to the root problem at LQS, namely that the organizational climate stresses the importance of internal survival and internal focus rather than providing optimal service to customers.

There is evidence that both employee satisfaction and the climate for service are related to customer satisfaction. Employee satisfaction and engagement are related to meaningful business outcomes. The absence of service delivery that is truly responsive to customer needs can be seen in part as the result of undue concentration of power, absentee ownership and an overriding concern for profit over people (Lemon, 2006, p.128). Brooks et al. (2006) state that when understanding how to maximize the employee-customer-performance link, the proper starting point is the climate for service. Schneider et al. (1994) define 'climate for service' as employees' shared perceptions of the policies, practices and procedures and the behaviors concerning customer service that are rewarded, supported and expected. Schneider & White (2004) continue:

"Basically, a service climate represents the degree to which the internal functioning of an organization is experienced as one focused on service quality. So, when employees perceive that they are rewarded for delivering quality service and when employees perceive that management devotes time, energy, and resources to service quality and when employees receive the training they require to effectively deal with customers, then a positive service climate is more likely to be the theme or meaning attached to these experiences" (Schneider & White, 2004, p.100).

Schneider and Bowen (1985) state that if management creates a climate in which employees do not feel valued or in which employees believe that management does not really care about service to customers, then employees may develop negative attitudes that customers can detect during the service encounter. If employees feel valued and respected by management and management cares both about employees and about providing customers with excellent service, then the employee is likely to care about providing good service. This may be due to a positive mood, organizational commitment or a desire to represent the company's values positively. Customers are likely to detect this attitude. Ample and consistent research evidence supports the idea that employees' feelings and attitudes about the job and the organizational climate have an impact on customers' perceptions of service quality, and this occurs as a result of verbal and nonverbal communication during the service encounter process. Because these interpersonal transactions between employees and customers play a major role in customer perceptions of service quality, the organization's human resource and management practices need to be aligned with this objective (Schneider & Bowen, 1985).

Service climate is further defined as employees' perceptions that (a) practices and procedures are in place to facilitate the delivery of excellent service, and (b) management rewards, supports and expects excellent service. According to Schneider and Bowen (1993), the firm's climate or culture must stress

service quality throughout the entire organization. A total emphasis on quality would involve not only a focus on customers but a focus on service quality-oriented HRM throughout the organization.

Service climate dimensions throughout the organization are, according to Schneider and Bowen (1993):

- Managerial Behavior – branch manager behaviors concerning planning, organizing and managing service;
- Systems Support – marketing, personnel and operations/systems support of service;
- Customer Attention/Retention – behaviors in the branch demonstrating the importance of customers to the branch; and
- Logistics Support – the availability of necessary tools/equipment/supplies to deliver service.

In their research, Schneider and Bowen support the belief that when an organization promotes a quality atmosphere for service and for its employees, these efforts will also be reflected in positive customer experiences. In other words, when service is promoted through practices and procedures like those assessed here, and when HRM is more positive regarding the kinds of issues assessed here, then customers are likely to report they have encountered positive service experiences (Schneider & Bowen, 1993).

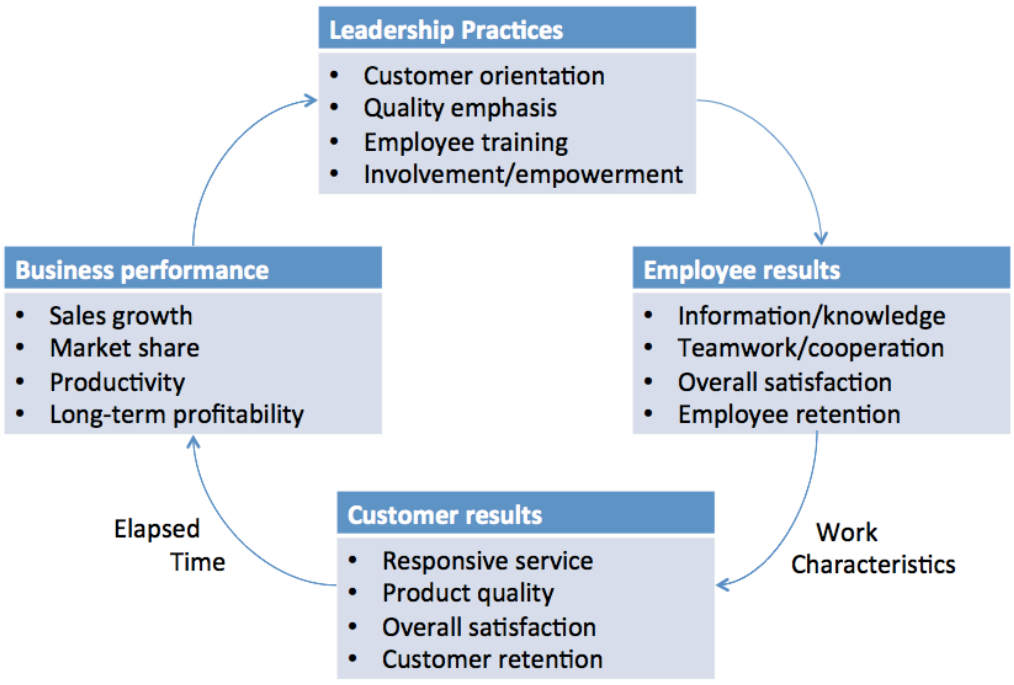

Figure 14: The High-Performance Model (Wiley, 1996).

From the entire body of research on the employee-customer-performance link, Wiley and Brooks (2000) derived a taxonomy of the high-performance organizational climate, which describes with greater clarity the characteristics of high-performance organizations in the service environment (see Figure 14 and Appendix XIII). Wiley (1996) introduced the High Performance Model, where he suggests that where certain organizational and leadership practices are observed in a given work environment, the workforce becomes more energized and productive. In turn, the energized workforce builds greater satisfaction and loyalty among customers, which over time translates to a stronger business performance of the organization.

It can be concluded that LQS should focus on a climate for service to increase its service quality and customer satisfaction. The climate for service should make employees aware of how the service they are providing affects the customers and aware that the customers are dependent upon high quality, timely results of analyses and resolutions of their requests/issues. The climate for service results in an increased service quality and can separate the employees dealing with customer issues/problems, so that other employees can focus on internal problems and daily operations. As can be seen in Figure 14, leadership practices are tremendously important in a high-performance climate for service. This aspect is seen as being crucial to the change step of the design cycle, and creating a climate for service is seen as one of the greatest challenges LQS must overcome when implementing a Service Desk.

In addition to an analysis and a design component, a business problem solving project consists of the actual change of organizational structures and/or work processes, and the subsequent management of the new situation, in order to produce the intended performance improvement (Van Aken et al., 2007). “The performance improvement involves organizational change, a change in organizational roles and routines, often with accompanying changes in perceptions and attitudes” (Van Aken et al., 2007, p.18). As previously mentioned, this chapter provides the theoretical foundation for the organizational change towards an improvement in the service quality LQS provides (Step 4 of the design process in Figure 2). The actual organizational change steps for LQS will be discussed in Chapter 5.

5. THE BALANCED SCORECARD AND STRATEGY MAPPING

This chapter describes the model that is used to incorporate the literature research with the problems formulated in Section 3.4. The model will structure all aspects in the change plan of the designing phase and provide a clear overview of the links among the research of the previous chapters.

In the problem-solving cycle, the analysis and diagnosis step is followed by the step in which a plan of action is made, which involves solution design and the design of the change plan (Van Strien, 1997). Using the theoretical foundation to increase service performance is not easy due to the intangibility of the criteria, employee skills and attitudes, and climate towards service. In the late 1980s, many scholars expressed concern about traditional performance measures that focused solely on financial metrics (Hoque, 2014). Scholars promoted the idea that, in addition to financial measures of performance, non-financial measures would benefit an organization in the long term. To thoroughly understand how LQS can transform itself from its current state to the desired future state with an increased service performance, the Strategy Maps model by Kaplan and Norton (2004) is used. The Strategy Maps model is an extension of the Balanced Scorecard, introduced by Kaplan and Norton, which will be described first.

The Balanced Scorecard (BSC) is a holistic model of organizational performance that starts with the end result in mind. The typical scorecard incorporates four perspectives, each of which must be successfully managed: (1) financial, (2) customer, (3) internal business process and (4) learning and growth. Kaplan and Norton (1996) explain that the BSC is fundamentally a method for translating management strategy into action. Within a given scorecard, managers distinguish between leading indicators that predict success and lagging indicators that reflect the actual performance achieved. The integrating concept is that every measure selected for the scorecard is part of a system of cause and effect relationships, including work environment, business processes and customer value, that culminate in the achievement of financial goals (Lundby & Rasinowich, 2003). Kaplan and Norton introduced the Balanced Scorecard to provide a framework for describing value-creating strategies that link intangible and tangible assets (Kaplan & Norton, 2001). The scorecard does not attempt to value an organization's intangible assets, but it does measure these assets in units other than currency. The BSC describes how intangible assets get mobilized and combined with tangible assets to create differentiating customer-value propositions and superior financial outcomes.

The BSC framework would help the organization translate their strategic objectives into a coherent set of performance measures (Lueg & Julner, 2014). These strategic objectives stem from the Strategy Map, which derives all strategic objectives directly from the organization's strategy and links them via cause and effect relationships. Built on the organization's vision and strategy, the Strategy Map illustrates what needs to be done to achieve strategic goals. The strategic goals for LQS will be described in Section 5.6. Strategy is not a stand-alone management process; it is one step in a logical continuum that moves within an organization from a high-level mission statement to the work performed by frontline and back office employees.

A Strategy Map provides a visual representation of the strategy. It provides a single-page view of how objectives in the four perspectives (financial, customer, internal business process, learning and growth) integrate and combine to describe the strategy. Typically, the objectives in the four perspectives of a Strategy Map lead to about 20 to 30 measures being required in the associated Balanced Scorecard (Kaplan & Norton, 2004). The aim of a Strategy Map is to make the contribution of soft factors and intangible assets and their transformation into long-term financial success explicit and thus controllable.

Kaplan and Norton (2004) summarize a Strategy Map as follows:

"The strategy map template, customized to the organization's particular strategy, describes how intangible assets drive performance enhancements to the organization's internal processes that have the maximum leverage for delivering value to customers, shareholders, and communities" (Kaplan & Norton, 2004, p.14).

The Strategy Map will be used to link the root, organizational, and internal problems at LQS to the different perspectives and to construct objectives and initiatives to change from its current state into the desired state to increase its service quality and customer satisfaction.

5.1 CONSTRUCTING A STRATEGY MAP

Organizations build Strategy Maps from the top down, starting with the destination and then charting the routes that lead there (Hoque, 2014). The destination is the solution designed (a well-constructed Service Desk for LQS), and the routes that lead there will be created using the Strategy Maps model. In their subsequent work, Kaplan and Norton (2004) emphasized the link between scorecard measures and an organizational Strategy Map. They outlined how an organization can establish strong links from strategy to operations so that employees' everyday operational activities will support organizational

strategic objectives. Organizational performance was always measured with financial indicators. Financial reporting systems provided no foundation for measuring and managing the value created by enhancing the capabilities of an organization's intangible assets. Consequently, executives' attention and effort were overly focused on influencing short-term financial measures, and insufficiently on investing in and managing the intangible assets that provided the foundation for future success.

The Strategy Map exhibits four perspectives (financial, customer, internal processes, learning and growth/innovation). These perspectives list and explain how the strategic objectives of an organization can be attained. The Strategy Map provides employees with action plans for how to achieve the set objectives. These plans could be detailed work descriptions at one extreme or full empowerment at the other extreme (Lueg & Julner, 2014). With only a few objectives and initiatives for each perspective, the Strategy Map helps managers to narrow and specify their focus on that which must be done to achieve a competitive advantage.

The Strategy Map allows managers to look at their business from the four important perspectives; it provides answers to four basic questions (Kaplan & Norton, 2004):

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

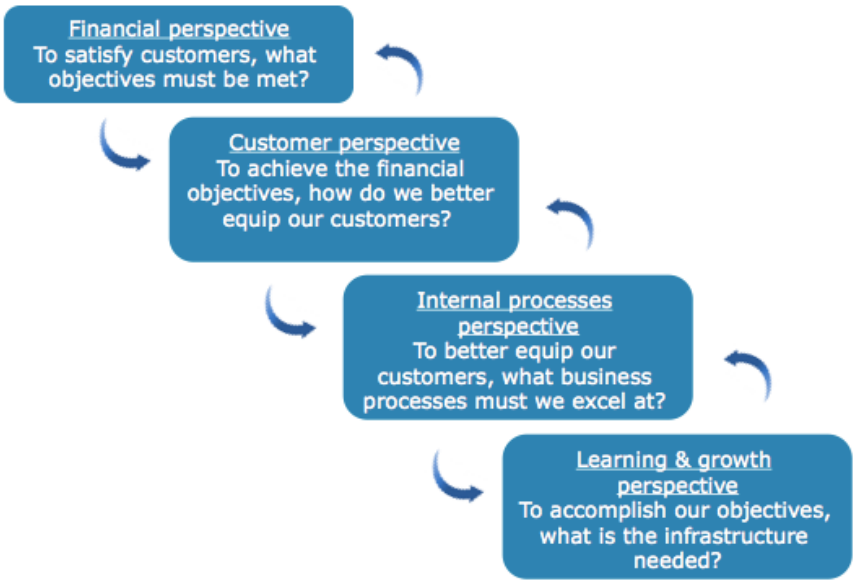

Figure 15: The perspectives of the Balanced Scorecard and Strategy Maps (Kaplan & Norton, 2004).

5.2 FINANCIAL PERSPECTIVE

Traditional performance rankings rely on simple and consistent financial data, such as Return on Equity (ROE) and Return on Assets (ROA) data. However, these performance rankings may not highlight strategies that lead to top performance. Nonfinancial criteria such as customer satisfaction can be vital to a service provider's winning strategy (Wu, 2012). Given that achieving financial success is not always the primary objective for organizations, many rearrange the scorecard to place customers or constituents at the top of the hierarchy. The financial measures are not the relevant indicators of whether the organization is delivering on its mission (Kaplan & Norton, 2004). The financial perspective describes the tangible outcomes of the strategy most often in traditional financial terms. In the case of LQS, measures such as customer satisfaction and service quality are the lag indicators that indicate whether the organization is succeeding or failing. The ultimate definition of success for LQS is their performance in achieving their mission. The mission for LQS is achieved through meeting the needs of targeted customers. The organization creates success through internal process performance that is supported by their intangible assets (learning and growth).

5.3 CUSTOMER PERSPECTIVE

The customer perspective defines the value proposition for targeted customers. The proposition provides the context for the intangible assets to create value. Consistent alignment of actions and capabilities with the customer value proposition is the core of strategy execution (Kaplan & Norton, 2004). Customer-based measures are important, but they must be translated into measures of what the company must do internally to meet its customers' expectations. After all, excellent customer performance derives from processes, decisions and actions occurring throughout the organization. Managers need to focus on those critical internal operations that enable them to satisfy customer needs (Kaplan & Norton, 2004).

The customer perspective at LQS focuses on meeting the needs of the customers, retaining existing customers and gaining customer satisfaction. What do customers expect or demand from Service Desks? Dimensions of customers' experiences include time, quality and price. Who do we define as our customers? How do customers see us? How do businesses create value for their customers? As already mentioned in Section 3.1, the SERVQUAL criteria are leading in the customer perspective. Identifying opportunities for improvement will result in an increased service quality and customer satisfaction.

5.4 INTERNAL PERSPECTIVE

How does the organization create these desired outcomes? The internal perspective identifies the few critical processes that are expected to have the greatest impact on the strategy (Kaplan & Norton, 2004). The Internal business process perspective aims to measure performance that enables businesses to be aware of the quality of their products and services. Does it conform to the mission of the firm? Do the internal business processes meet their customer requirements? There are two types of processes under strategic management. The first is a mission-oriented process, which focuses on the strategic goals of businesses, and the second type reflects the support processes that are used more repetitively in their daily operations, which in turn enforces benchmarking. The Strategy Map provides diagnostic feedback of the various internal processes, thereby guiding and improving the business processes on a continuous basis. What must businesses do well internally in order to achieve the objectives they set forth in the customer perspective?

If the internal processes are not directed at the customer value proposition or financial improvements, then the potential value of employee capabilities, and intangible assets in general, will not be realized. The value from the intangible assets arises when they are combined effectively with other assets. Maximum value is created when all of the organization's intangible assets are aligned with each other, with the organization's tangible assets and with the strategy. The internal process perspective identifies the few critical processes that are expected to have the greatest impact on the strategy.

5.5 LEARNING & GROWTH

Linking downward from internal processes to learning and growth objectives, the competencies, technologies and organizational climates that foster excellence in managing operations can be identified. The learning and growth perspective identifies the intangible assets most important to the strategy. The objectives in this perspective identify which jobs (human capital), which systems (information capital) and what kind of climate (organizational capital) is required to support the value-creating internal processes (Kaplan & Norton, 2004). The learning and growth objectives describe how the organization's intangible assets must be enhanced for performing and continually improving the critical internal processes. Human capital includes the skills, knowledge, expertise, extent of training provided to employees and the business cultural attitudes. Do employees have the skills/competencies to operate their internal business processes effectively and meet their customers' objectives? Informational capital aims to measure effective communication and information sharing. Do employees

possess the information required to achieve objectives? Organizational capital aims to monitor the soft areas of the employees, such as learning and growth, culture, leadership, knowledge sharing and teamwork. Do businesses have the ability to sustain growth and change?

As mentioned previously, the learning and growth perspective consists of three important pillars:

- Human capital: strategic competencies – the availability of skills, talent, and know-how to perform activities required by the strategy. Employee competencies in process improvements are foundational for improving operations. The ability to know the customer environment, understand customer needs, craft a value proposition and close the service request are fundamental in customer service excellence. Service excellence requires two-way communication and rapid resolution of questions and problems.
- Information capital: strategic information – the availability of information systems and knowledge applications and infrastructure to support the strategy. Technology plays a crucial role in improving operational performance. Employees need rapid feedback, including detailed, accurate measurements on the services they produce and the processes they control. Timely and understandable display of product and process information provides the foundation for more extensive data analysis, root cause analysis and a whole range of other quality tools that lead to ongoing improvements in cost, quality and process time. Kaplan & Norton (2004) state that "measures on the availability of information for frontline employees about processes, products, services, and customer will be critical for an organization wishing to continuously improve cost, quality, lead time, and customer service" (Kaplan & Norton, 2004, p.83).
- Organization capital: culture – awareness and internalization of the shared mission, vision and values needed to execute the strategy; leadership – the availability of qualified leaders at all levels to mobilize the organizations toward their strategies; alignment – alignment of goals and incentives with the strategy at all organization levels; teamwork – the sharing of knowledge and staff assets with strategic potential.

One of the main reasons behind failed strategy execution is top managers' communication of the strategy throughout the organization. Without this information, employees at lower levels will have a hard time realizing the strategy because it is unclear what is expected of them. The strategy map deals with this issue through clear formulations available to employees charged with executing the strategy

(Lueg & Julner, 2014). Before constructing the actual Strategy Map for LQS, a clear strategy must be formulated and will be outlined in Section 5.6.

5.6 THE STRATEGY

Before constructing the actual Strategy Map for LQS, a clear strategy must be formulated. Strategy develops and evolves over time to meet the changing conditions posed by the external environment and internal capabilities. In developing the internal perspective of their strategy map, managers identify the processes that are the most important for their strategies (Kaplan & Norton, 2004). Companies following a product leadership strategy would stress excellence in their innovation processes; companies following a low total-cost strategy must excel at operating processes; and companies following a customer solutions strategy will emphasize their customer management processes. This research follows a customer solutions strategy by trying to increase the service quality and customer satisfaction.

There are literally hundreds of processes taking place simultaneously in an organization, each creating value in some way. *The art of strategy is to identify and excel al the few critical processes that are the most important to the customer value proposition.* All processes should be managed well, but the few strategic processes must receive special attention and focus since these create the differentiation of the strategy (Kaplan & Norton, 2004). In this research it is important to understand what is to be influenced or improved. It is the customer's experience, his/her perception of LQS and his orher behavior that is the focus of the research and initiatives. By increasing customer satisfaction, customer expectations must be clear (see Section 3.1) and initiatives should meet these expectations.

5.7 CAUSE AND EFFECT RELATIONSHIPS

The objectives in the four perspectives are linked together by cause and effect relationships. Aligning objectives in these four perspectives is the key to value creation and, hence, to a focused and internally consistent strategy (Kaplan & Norton, 2004). Kaplan and Norton (2004) suggest that this period of organizational change must be accompanied by the use of a Strategy Map that shows the cause and effect relationships of the BSC and gives stability to the eventual reorganization. As they state: "Strategy Maps and BSCs help organizations translate, communicate and measure their strategies" (Kaplan & Norton, 2004, p.9). The four-perspective model for describing an organization's value-creating strategy provides a language that executive teams can use to discuss the direction and priorities of their enterprise. They can view their strategic objectives and initiatives, not as performance indicators in four

independent perspectives, but as a series of cause and effect links among objectives in the four BSC perspectives. A Strategy Map is used to facilitate the discussion among executives by creating a general representation of these links.

By using cause and effect diagrams, a strategy can be depicted in such a way that it is clear not just to those formulating the strategy, but to the majority of employees charged with executing the strategy (Scholey, 2005).

5.8 OBJECTIVES AND INITIATIVES

The Strategy Map describes the logic of the strategy, showing clearly the objectives for the critical internal processes that create value and the intangible assets required to support them. Objectives will not be achieved simply because they have been identified; the organization must launch a set of action programs to enable the targets for all the objectives to be achieved (Kaplan & Norton, 2004). All initiatives are necessary for the strategy to succeed. If one is deleted, a critical objective will be missed and the chain of cause and effect relationships will be broken. The objectives and measures for a particular value proposition define an organization's strategy. By developing objectives and measures that are specific to its value proposition, the organization translates its strategy into tangible measures that all employees can understand and work toward improving.

Objectives in the customer perspective describe the strategy – the targeted customers and value proposition – and the objectives in the financial perspective describe the goal from a successful strategy. The internal objectives and learning and growth perspectives describe how the strategy will be accomplished. The organization manages its internal processes and its development of human, information and organizational capital to deliver the differentiating value proposition of the strategy. The art of strategy is to identify and excel at the few critical processes that are most important to customer value proposition. All processes should be managed well, but the few strategic processes must receive special attention and focus since these processes should also be drawn from all four clusters (Kaplan & Norton, 2004).

5.9 THE STRATEGY MAP

By using the theoretical building blocks from Chapters 3, 4 and 5, and the problem mess discussed in Section 3.4, a Strategy Map can be constructed for LQS focusing on the financial, customer, internal and learning and growth perspectives.

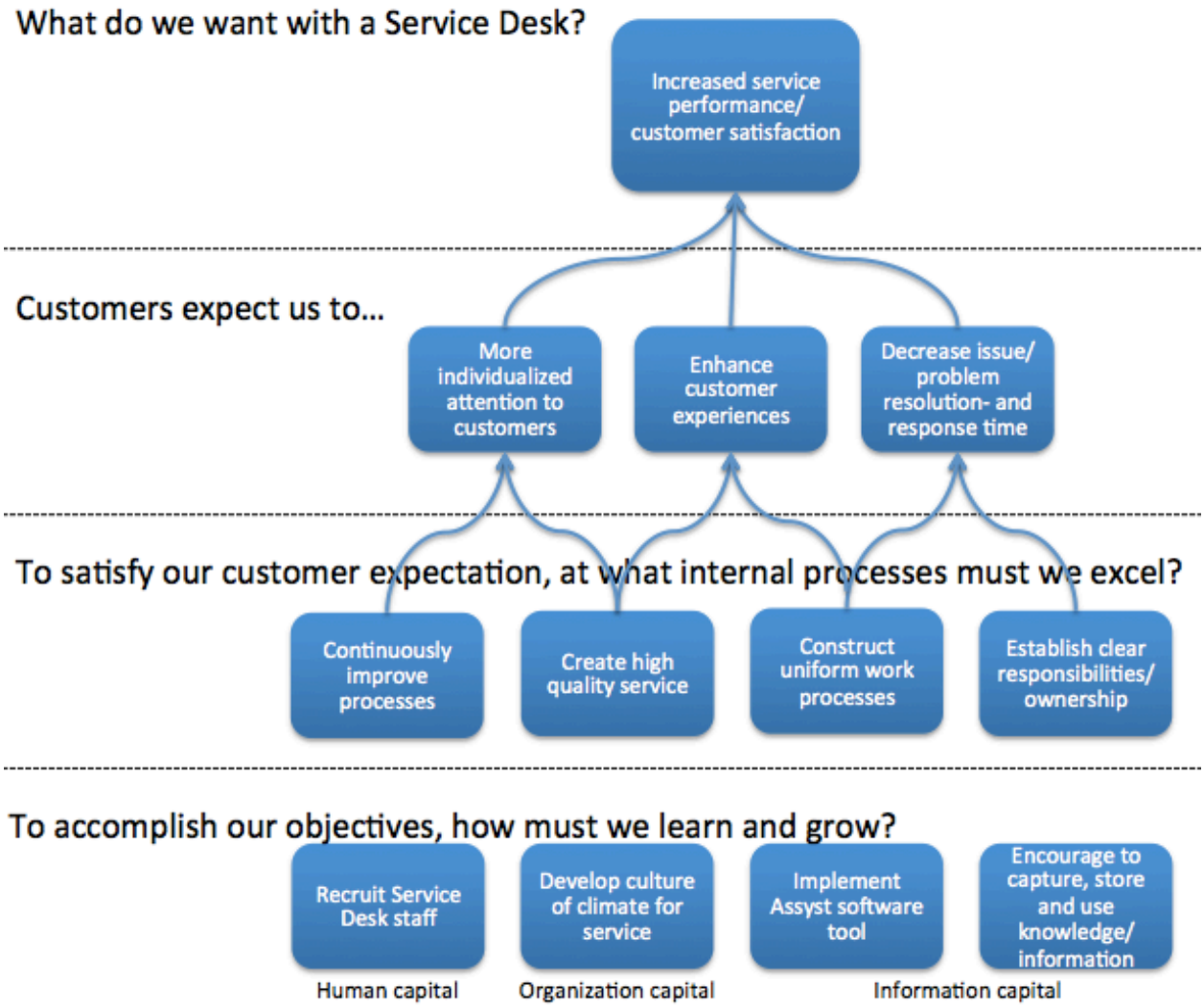

Figure 16: Strategy Map for LQS.

As discussed in Section 5.8, the organization must launch a set of action programs to enable the objectives for all the measures to be achieved. During focus group sessions, objectives and initiatives were identified to guide LQS from its current position towards a position of increased service performance. The objectives and initiatives in each of the four perspectives will be discussed in this chapter.

Learning & growth perspective

The foundation for a Service Desk and a resulting increased level of customer satisfaction and service quality begins with the infrastructure in the human, organizational and information capital at the enterprise. Implementing a strategy begins by educating and involving the people who must execute it (Kaplan & Norton, 1996). As a result of the focus group sessions, objectives and initiatives in the learning and growth perspective were identified (see Table 6).

Strategic objectives	Initiatives
Recruit Service Desk staff	– Software training – Questioning training – Train employees how to better handle dissatisfied customers who complain or behave inappropriately
Develop culture of climate for service	– Increase employee involvement and participation – Create an environment in which employees feel valued, are treated fairly, and are supported by management
Implement software tool	– Improve technical service quality to meet or exceed customer expectations for performance
Encourage the capture, storage and use of knowledge/information	– Perform trend analyses – Create a mindset that data and information are resources

Table 6: Objectives and initiatives in the learning & growth perspective.

Human capital – recruit the Service Desk staff

The Service Desk staff is a critical component of a successful Service Desk. LQS should start by identifying and selecting employees that possess the competencies of 'empathy' and 'assertiveness' to fulfill the role of a Service Desk employee. As described in Section 4.1, selection must focus on employees that understand where to get the information for a high quality resolution of customer issues/problems and those that can influence others to get things done when acting as a coordinator. These employees

should be provided with extensive training in order to deal with customers in different situations and to understand their needs. When acting as a problem coordinator, all relevant information should be extracted from the customer; the LQS training department already possesses some training methods related to extensive questioning for the obtainment of all relevant information about the (underlying) problem. Finally, proper use of the tool is essential for a streamlined and uniform process of dealing with customer issues and problems. As described in Section 2.4.4, a workshop at the headquarters of FrieslandCampina was attended during this research in order to understand the Service Desk tool. Additional workshops will be given in the near future and it is highly recommended that the Service Desk employees attend these workshops.

Organizational capital – develop culture of climate for service

In addition to managing the service encounter, an understanding of the larger organizational context is critical to improving the service encounter. Research by Schneider and Bowen has shown a clear relationship between employee perceptions of organizational climate and customer perceptions of service quality (Schneider & Bowen, 1993). Employees cannot be coerced to consistently create good service encounter experiences for customers through external rewards and punishments. It is far more effective if employees are intrinsically motivated to provide good service.

By increasing employee participation in problem identification and solution generation, employees are more likely to experience a sense of ownership of service quality problems, perceive that management considers them important partners in providing services and think of themselves as empowered to address and solve service quality problems (Whetzel & McDaniel, 2006). Involving service employees as partners in building a strong service culture helps to create the types of attitudes that make it more likely that employees will care about providing good service to customers. Employees who are close to the customer and bear the brunt of customer dissatisfaction often have valuable ideas about how to improve service quality (Whetzel & McDaniel, 2006). In addition, communicating this process to employees – that their input, knowledge and ideas are valued – creates a sense of ownership and empowerment in resolving service quality issues.

The theoretical research in the customer service literature shows a clear emphasis on the service employee as a critical factor in customers' perceptions of service quality, and the organizational climate as the foundation for providing good service. The following list is a summary of key strategies for improving the service encounter:

- Organizations should create an environment where employees feel valued, are treated fairly, and are supported by management – one that creates employees who want to provide good service to customers and positively represent the organization.
- Human resources and management need practices in place that create an atmosphere in which employees feel positive and pass those feelings on to customers – practices which can involve employees in decision-making and problem-solving.
- Employees have more customer contact than managers, and their opinions can be valuable for improving service quality, which results in empowering employees who will provide good service.
- Organizations can use the initiatives mentioned in this section to close the gap between customer expectations and their perceived quality of service.

Creating a climate for service is a critical step in increasing the service quality at LQS and it is seen as one of the greatest challenges facing LQS. The root problem, as described in Section 3.4, deals with a lack of separation between focus on operational excellence and customer intimacy. The organizational climate stresses the importance of survival and resolution of internal problems. Hence, employees dealing with customers are not aware of how the service they are providing affects the customers and that the customers are dependent on high quality, timely results of analyses and resolution of their requests/issues. The climate for service results in an increased service quality and can separate the employees dealing with customer issues/problems, so other employees can focus on internal problems and daily operations.

Information capital – implement Assyst software tool – encourage the capture, storage and use information/knowledge

One observed problem is the lack of an overview of FAQs, problems and trends. The sharing and capturing of knowledge is not at the preferred level, and there is no information system available that facilitates the capturing and sharing of knowledge. Having an overview of trends and problems could lead to early warnings and fewer complaints.

During observations discussed in Sections 2.4.4 and 4.3, a Service Desk tool has been chosen to exemplify how a Service Desk tool can facilitate the guidelines in the internal processes perspective. A workshop at the FrieslandCampina headquarters was attended during this the course of this research to get a better understanding of the Service Desk tool Assyst. Results from this workshop can help to show

to LQS management how Assyst could help LQS in making their work processes more uniform and directing responsibilities and ownership in specific situations.

Resulting from the theoretical research, discussions with customers and observations at other Service Desks, it can be concluded that feedback plays an important role in continuous improvement of the Strategy Map. Customer feedback can be used to perform trend analysis on the range and scope of requests, improve guidelines and work processes and test how LQS is scoring on the different criteria of the SERVQUAL standard and overall customer satisfaction. Good interpretation of feedback and actions taken as a result of them will result in improvements in all perspectives of the Strategy Map (Kaplan & Norton, 2004).

LQS can now focus on their human capital investments and, more generally, their investments in all intangible assets to create distinctive and sustainable value. LQS can create sustainable value from leveraging their intangible assets – human capital, databases and information systems, customer relationships and culture.

Within LQS, management must create a mindset that data and information are resources and ensure that employees capture, store and use the information in the Service Desk tool. Having all information in one place will result in an increasing (online) knowledge base that will help Service Desk employees resolve issues much more quickly in the future. Information and data can be used to analyze trends, and proactive action should be taken when trends are identified.

Internal perspective

The internal processes are directed at the customer value proposition and financial improvements. The processes should result in increased responsiveness and reliability in the customer perspective and eventually lead to increased customer satisfaction and service quality. In the absence of an appropriate information system and focus on internal processes, LQS lacks uniform working processes to provide good service to customers. The lack of uniform work processes for customer service is emphasized by the large number of entry points for customers in the organization. When dealing with customer questions/issues, responsibilities are not clearly stated in the work processes, which leads to a lack of ownership on these questions/issues. Objectives and initiatives are constructed in the internal processes perspective and can be found in Table 7.

Strategic objectives	Initiatives
Continuously improve processes	– Change, improve or eliminate the policies, procedures or practices that lead to customer dissatisfaction when feasible
Create high quality service	– Educate customers prior to the service encounter so that their expectations will be more realistic and fit the organization's service delivery system
Construct uniform work processes	–
Establish clear responsibilities/ownership	– Appoint problem, specialist and escalation managers – Empower Service Desk employees to appoint problem, specialist and escalation managers

Table 7: Objectives and initiatives in the internal perspective.

Continuously improve processes

Organizations that are interested in improving service quality need to stay close to the customer in terms of gathering relevant information about customer expectations, preferences and judgments of the quality of service encounter transactions (Parasuraman et al., 1985). Service encounter quality is in the eye of the beholder. Therefore, customer views of service quality should be assessed and used as a basis for decision-making for service quality issues. According to Whetzel and McDaniel (2006), one strategy that could both improve complaint management and have a collateral effect on improving service encounters is to involve service employees in systematically recording all customer complaints and suggestions related to policies, practices or service quality. LQS should continuously involve Service Desk employees and customers to improve processes that will increase efficiency, effectiveness and service quality.

Create high quality service

The quality of the service can only be improved when the customer uses the Service Desk as a single point of entry and refrains from contacting team leaders directly. LQS should therefore educate customers so that their expectations will be more realistic and will fit the organization's service delivery

system. Customers should be directed to the tool, where most information is available for them to handle many of the questions they want to address to LQS.

Construct uniform work processes

As previously mentioned in Sections 2.4.4 and 4.2, best practices regarding a Service Desk within other departments of FrieslandCampina (HR, IT, Cheese) and another laboratory in the industry (Eurofins) were studied. During conversations and observations, guidelines that were applicable to the handling of customer requests at LQS were gathered and translated into a 'Service Desk manual' (see Appendix XIV). The manual is constructed to serve as a basic guideline that must be followed when dealing with customer requests and problems. The manual discusses guidelines and work processes, and it clearly defines responsibilities and ownerships in specific cases.

Establish clear responsibilities/ownership

The final objective in setting up the Service Desk at LQS is to establish clear responsibilities for dealing with customer issues/problems and to ensure that employees take ownership of the problem. LQS should appoint employees that act as a problem, specialist or escalation manager in specific cases and empower the Service Desk employee to appoint these managers when necessary (see Appendix XIV). An example will be given in Section 5.10 of how this would take form in the pilot stage.

Customer perspective

The criteria that are most important for customers when it concerns service quality and customer satisfaction come from the SERVQUAL model described in Section 3.1. Objectives must be set and initiatives must be taken to achieve better performance in each of these dimensions. Resulting from extensive discussion during focus group sessions, the following objectives and initiatives have been set.

Strategic objectives	**Initiatives**
More individualized attention to customers	– Visit customers - To understand their needs - So they can associate a face with whom they deal with
Decrease issue/problem resolution and response time	– Trend analysis – Monitoring
Enhance customer experiences	– Single Point of Contact (SPOC)

	–	End-user portal
Meet SLAs	–	Construct SLAs (with customers)

Table 8: Objectives and initiatives in the customer perspective.

More individualized attention to customers

Given the specification of the problem from the customers' perspective as described in Section 3.1, one can state that customers expect individualized attention from Service Desk employees at LQS and also expect them to deeply understand the customer. In the early phase of setting up the Service Desk, it is recommended that Service Desk employees visit the five largest customers of LQS (Beilen, Veghel, Bedum, Leeuwarden and Lochem) to understand what these production locations produce, who works there and what LQS means to them. It is also important for them to know who they will be dealing with in the near future and associate a face with this person.

Decrease issue/problem resolution and response time

Setting up a Service Desk, with its SPOC, clear responsibilities, well-structured processes, knowledge base and many other features, will result in a decrease in resolution and response time. Providing the customer with an automatic confirmation of the receipt of his or her question and the associated ticket number will decrease the response time and assure the customer that his or her request is being handled. Using uniform work processes and the knowledge base will also increase the resolution of issues/problems, and ensuring that employees capture and store knowledge will result in a growing base of knowledge that helps employees solve many issues and problems in the near future.

Enhance customer experiences

The single point of entry will enhance customer experiences and the software will resolve many questions when customers use it as an end-user portal, when all information is clearly visible and available. The Assyst tool is easily accessible, has dropdown menus to guide the customer towards the information needed, provides the status of outstanding tickets, has an overview of FAQs and serves as a documentation library and online knowledge base. The software tool also has an online chat function that could be used in the future and it should be considered by LQS for such use.

Meet SLAs

Service Level Agreements (SLAs) should be constructed in consultation with customers, and actions should be taken to meet these SLAs. These agreements should be constructed for the different

processes and priorities. The general objective of an SLA between customers and LQS will be that LQS will deliver demonstrably reliable analytical results on a timely basis, either executed in its own laboratories or outsourced to third parties. These results will be delivered within timeframes and at costs agreed upon up front. Examples of how SLAs could be constructed are displayed in Tables 9 and 10, but specific SLAs still need to be constructed in the near future. The goal of such an SLA is to capture the rules and agreements for the Customer Service Desk activities at the request of the customer. Appendix XV contains a description of the Assyst software's function to alert staff with visual cues and notifications before SLAs are breached.

Service Desk responsiveness	Service measure	Performance target	SLA performance
Speed to answer by employee	Phone response time	≤30 seconds	80%
Speed to answer by employee	Phone response time	≤5 minutes	99%
Call abandonment rate		≤5%	
Email response rate	Online response time	≤1 hour	99%
Voicemail response rate	Voicemail response time	≤30 minutes	98%

Table 9: Example of SLA Service Desk responsiveness.

Category	Priority	Reaction time	(Re)solution time	SLA clock
Incident	4 = Low	1 hour / 95% < 7 BD	16 hours / 95% < 30 BD	Working hours
Incident	3 = Medium	30 min. / 95% < 1 BD	8 hours / 95% < 3 BD	Working hours
Incident	2 = High	15 min. / 95% < 2 hours	4 hours / 95% < 24 hours	Clock hours
Incident	1 = Critical	15 min. / 95% < 15 min.	2 hours / 95% < 6 hours	Clock hours

Table 10: Example of SLA incident resolution; *BD= Business Days.

Financial perspective

The financial perspective describes the overall goal of the Service Desk, and objectives and initiatives can be found in table 11.

Strategic objectives	Initiatives
Increase service performance	– Set up Service Desk
Increase customer satisfaction	– Meet objectives in the Strategy Map

Table 11: Objectives and initiatives in the financial perspective.

Increase service performance

One of the main objectives of this research was to increase service performance, and the research showed that setting up a Service Desk would resolve many of the problems LQS faces and will result in an increase of service performance.

Increase customer satisfaction

Executing all initiatives described in the Strategy Map will result in an increased score in many of the SERVQUAL dimensions. Scoring higher in these dimensions will result in an increase in customer satisfaction. It must be stated that, as described in Section 3.1, customer satisfaction includes but is not limited to the evaluations of service quality. Thus, overall customer satisfaction can be partially influenced by an increase in service quality.

This research has identified many initiatives – each affecting one or two objectives – and all initiatives are necessary for the strategy to succeed.

5.10 THE PILOT PHASE

During the final presentation of this research to LQS, feedback was gathered and it was agreed upon to initiate a pilot. This section provides some recommendations for starting a pilot (see Figure 17). In the first phase of setting up a Service Desk, one Service Desk employee that has full access to the LIMS software should be appointed to provide customers with the necessary information about the status of their samples.

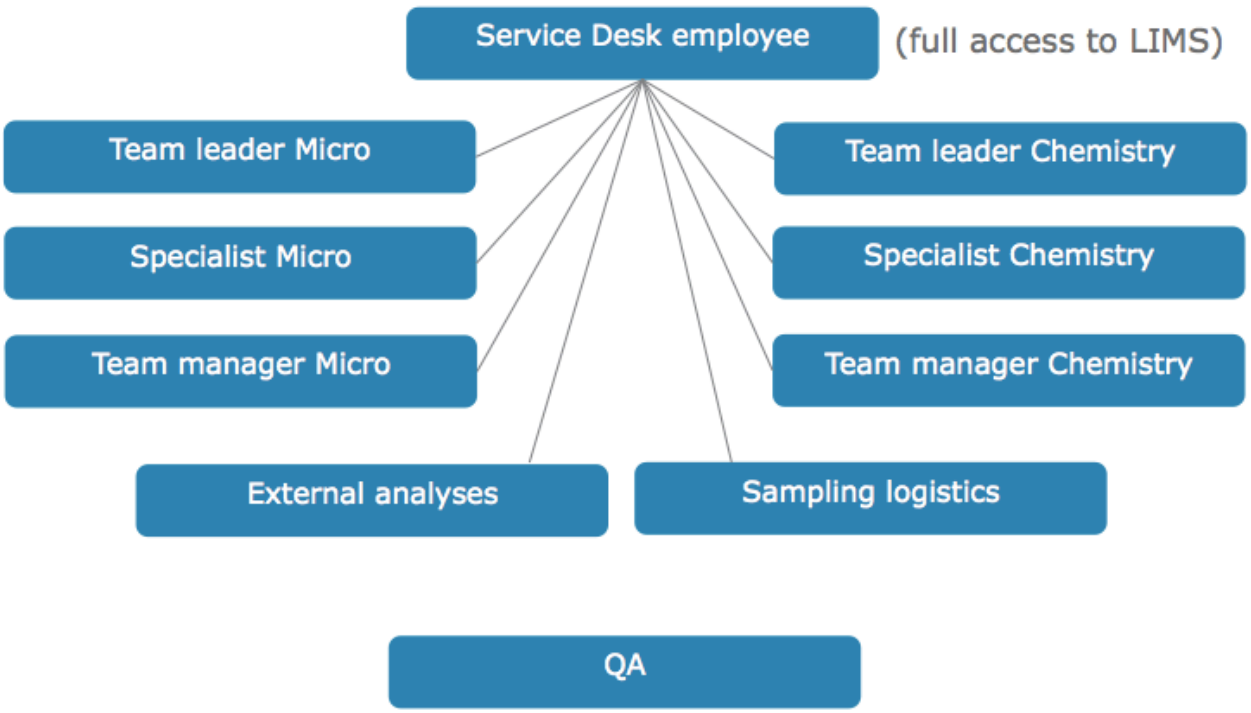

Figure 17: Responsibilities in the pilot phase.

One team leader should be appointed at the Microbiology department as a problem manager for when the Service Desk employee escalates problems. The purpose of setting up a Service Desk was to release team leaders of many customer contacts, but questions about the results of analyses should still be directed towards a team leader. Only one team leader should be available for these types of problems, so the others can focus on their daily operations. In the Microbiology department, one team leader is already scheduled each day to deal with other issues than daily operations and team-leading. This team leader could serve perfectly as a problem manager and could also deal with problems escalated by the Service Desk employee. The Chemistry department does not appoint one specific team leader each day to deal with other issues than the daily operations, but it is recommended to do so.

Furthermore, a specialist in each department should be appointed to act as a problem or specialist manager, when problems are escalated. The team manager of each department should serve as an escalation manager when priority is high or when the Service Desk employee, problem manager or specialist does not have sufficient knowledge to handle the problem. When the organization receives questions regarding analyses that LQS does not perform itself, an external analysis expert should be appointed to deal with these issues. Many questions are also addressed to the sampling logistics department and one employee there should be appointed to deal with these questions. Finally, a QA manager should monitor the progress of issue/problem resolution during the escalation management process, when the Service Desk employee identifies a trend or when a change has to be made in the processes, policies, procedures, etc.

In consultation with the supplier of the Assyst software, an estimation was made of the costs of licensing the software. For the ten users in the pilot phase, LQS must pay € 5,000 per year in licensing fees.

5.11 EVALUATION

As mentioned in Section 2.3, Hevner (2007) states that the results of the field-testing will determine whether additional iterations of the cycle are needed in this project. In addition, feedback from the environment of the field-testing and a restatement of the research requirements as learned from actual experience can cause an iteration of the cycles. Formative evaluation, i.e. the evaluation and improvement of the design during the process, is internalized in the pragmatic approach. In summative evaluation (Visscher & Visscher-Voerman, 2010), after the process, the design should be evaluated as an integral part of the accomplished change. Has the organization actually changed and does it now work better?

Peffers et al. (2008) state that in the evaluation phase, researchers should observe and measure how well the design supports a solution to the problem. This activity involves comparing the objectives of a solution to actual observed results from the use of the designed solution. In Stage 4, the designer must assure that the structural specifications (program of requirements, see Table 3) are actually preserved in the prototype. This will be discussed in the conclusion of this thesis.

In the final evaluation of the solution design, the researcher must learn to what extent the solution design leads to a preferred new situation and what the benefits of the new situation are (Peffers et al., 2008). Because this step is not within the scope of this research, LQS must determine if the implementation of a Service Desk will lead to an increase in customer satisfaction and service quality. This measurement can be obtained by conducting surveys after the conclusion of the pilot phase and measuring to what extent the Service Desk increased the customer satisfaction related to the support activities for the routine analyses of samples.

6. CONCLUSIONS

The aim of this thesis was to conduct additional research for LQS in its quest for quality improvements in its services. In this chapter, the conclusion, recommendations and limitations are drawn based on the results of this study. Suggestions for future research will be discussed in the last section of this chapter.

The specific outcome of this research is the design of a Service Desk as an interface between LQS and its customers. The main research question was defined as: "*How can LQS improve its customer service performance and, with that, its customer satisfaction level?"* and can be answered by implementing the Service Desk as described in this thesis. Here, specific components of a successful Service Desk; people, processes, technology and information are described and can be applied to the organization, together with a Strategy Map, to move from the original state to the desired state.

A practical approach, which followed the regulative cycle, has been used to develop the solution design. During this cycle, current processes and underlying problems have been identified, together with expectations from the management, customers', and employees' perspectives related to the solution of the problem. Based on specifications of the processes, problems, expectations and participant observations, the specific components of a successful Service Desk; people, processes, technology and information were designed.

It can be concluded that the designed solution (Service Desk) meets the program of specifications as described in Section 3.5. By setting up a Service Desk according to the specifications and processes described in this research, LQS can increase the quality of services it provides and thereby increase customer satisfaction. It also releases team leaders of many customer contacts, so they can focus on leading their teams and on daily operations. Following the initiatives described in the Strategy Map will help LQS to transform from its current situation into the desired situation, and objectives specified can then be accomplished.

6.1 RECOMMENDATIONS

For LQS

LQS can improve its customer service performance and its customer satisfaction level by implementing the Service Desk as designed in this research. Current processes at LQS for dealing with customer issues were observed and uniform work processes are constructed for employees dealing with customer issues, so they know what is and is not expected of them. For each of the steps of dealing with customer issues and problems, responsibilities and ownership are described. The analysis is based on theoretical insights from the academic literature and is adjusted to the specific situation by involving LQS employees and customers in the designing process. Guidelines have been collected, constructed and discussed with employees and, based on these discussions; ownership and responsibilities will be appointed in the various steps.

All interviewees concluded that customers enter the organization at all levels in the organization and there is a tangle of internal and external communication channels. The Service Desk as a Single Point of Contact, to which all issues and problems can be directed, and clear guidelines could provide a solution to most of LQS' current problems. Customers could enter the organization at different levels, which meant that customers did not get a consistent answer and agreements could be made on one side but not fulfilled on the other side. A single entry point and clear responsibilities improve the consistency in resolution of customer questions.

At first, LQS should identify the employees that should be involved in the Service Desk according to the described competencies. Processes have been made clear and these should be followed for different types of issues and problems. Responsibilities have been described and the use of the Assyst software facilitates the needs of LQS in increasing service performance. Creating a climate for service is a critical step in increasing the service quality at LQS and it is seen as one of the greatest challenges facing LQS. The climate for service should make employees aware of how the service they are providing affects the customers and aware that the customers are dependent upon high quality, timely results of analyses and resolutions of their requests/issues. The climate for service results in an increased service quality and can separate the employees dealing with customer issues/problems, so that other employees can focus on internal problems and daily operations

Finally, the Strategy Map describes the steps LQS must take to move from the current situation into the desired situation. Executing all initiatives described in the Strategy Map will result in an increased score for many of the SERVQUAL dimensions. Scoring higher in these dimensions will result in an increase in customer satisfaction. The findings reveal that setting up a Service Desk at LQS is very appropriate because the few critical processes, that are most important to the customer value proposition in which LQS must excel, have been identified.

Scientific relevance

Though much of the Strategy Maps literature is primary focused on financial outcomes, this design's main goal was to increase the service performance and customer satisfaction. Consequently, few academics focus on customer satisfaction as a lagging indicator in the financial perspective of the balanced scorecard. This thesis can be seen as one of the few researches that take customer satisfaction as the main goal and lagging indicator in the Strategy Map, instead of financial outcomes.

The use of Strategy Maps for the change plan in Step 4 of design-oriented research has not yet been observed in the literature. Literature on design-oriented research and Strategy Maps has been reviewed, but none of the reviewed academic papers provided arguments in favor or against using Strategy Maps as a change plan in Step 4 of design-oriented research. Kaplan and Norton (2004) suggest that the period of organizational change must be accompanied by the use of a Strategy Map that shows the cause and effect relationships of the BSC and gives stability to the eventual reorganization. The use of Strategy Maps was found to be extremely useful and fit the needs of the researcher in constructing a change plan. The four-perspective model for describing an organization's value-creating strategy provides a language that executive teams can use to discuss the direction and priorities of their enterprise. They can view their strategic objectives and initiatives not as performance indicators in four independent perspectives, but as a series of cause and effect links among objectives in the four BSC perspectives. A Strategy Map is used to facilitate the discussion among executives by creating a general representation of these links.

6.2 LIMITATIONS

Scope

The scope of this research, as described in Section 1.7, did not include the treatment of complaints. LQS is currently running a pilot on the treatment of complaints, but a recommendation can be made to

include the treatment of complaints as one of the tasks of the Service Desk. Complaints can contain valuable information and many successful companies today are learning to view customer complaints as valuable opportunities for quality improvement. In addition, the scope of this research did not include the sensory grading department. Although very few questions are related to the sensory grading department, it can be concluded that it is wise to include the questions addressed to the sensory grading department in the Service Desk to ensure uniform work processes, a single entry point for customers and data and information stored in the knowledge base.

Internal validity

Vos (2009) points out that the qualitative researcher in participant observations has become immersed in the setting and may well adopt the perspective of key informants. The qualitative observer runs a special risk of becoming biased by the feelings, loyalties or antagonisms generated by the setting and the actors in it. This research deviates from other design studies in that strong indicators that setting up a Service Desk would fulfill the objectives, goals and specifications of the design were identified. Normal design studies elaborate on potential solutions to the problem but this study focused on one solution in Step 3 of the design process. Since from the start of this research project, management has focused on the solution design of setting up a Service Desk , the possibility that the researcher was biased and directed towards this specific solution can not been excluded.

External validity

"External validity consists of the extent to which research findings generalize to other populations, other times, and other settings" (Vos, 2009, p.197). As stated in Section 1.7, the objective of this research project was not to develop general knowledge contributing to the state-of-the-art academic literature, but to generate specific knowledge in this specific business context. Thus, the purpose of the project is to solve the problem with unsatisfactory customer contacts of the LQS department by providing a theory-based and practical-oriented solution that will lead to actual change and improvement of the current situation in the organization. This means that the solution is appropriate for the specific business context and that the level of external validity is low. The goal of this research, as can be concluded from the research questions, was not to produce findings that are generalizable to other populations and therefore the external validity has to be taken into account. This research can contribute to a wider view on design-oriented and Service Desk research, by using this research as a case study.

Design-oriented research

There is considerable room for further development and evaluation of the Service Desk. Due to the limits of time and resources, the author cannot participate in the implementation phase of the designed solution. The implementation is an important step in the design process and evaluation metrics are discussed for the implementation phase. An overview and specifications for the pilot phase are provided to enable a correct implementation of the designed solution.

Customer satisfaction

It must be stated that, as described in Section 3.1, customer satisfaction includes but is not limited to the evaluations of service quality. Thus, overall customer satisfaction can be partly influenced by an increase in service quality. Measures in the evaluation step should be directed towards customer satisfaction of the service quality and not the overall customer satisfaction. The overall customer satisfaction is an attitude and is an overall evaluation of an organization's products and services versus the customer's expectations.

6.3 FUTURE RESEARCH

As mentioned above, none of the reviewed academic papers provided arguments in favor or against using Strategy Maps as a change plan in Step 4 of the design-oriented research. Additional research could be conducted to test the applicability of using Strategy Maps for the change plan in design-oriented research.

Future research could also continue this current study in the implementation phase and evaluate the research after the pilot stage. Changes in customer satisfaction can be observed and adjustments can be made to the design. One important aspect is that SLAs still must be constructed in consultation with customers. Meeting the SLAs will also influence the customer satisfaction and evaluation criteria of this research. Furthermore, Section 3.1 described customer wishes that the SPOC could act as a proactive communication channel that informs customers of changes and delays. The Service Desk could also serve as a single point of exit, but this needs to be further investigated.

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APPENDICES

APPENDIX I – Analyses executed by LQS

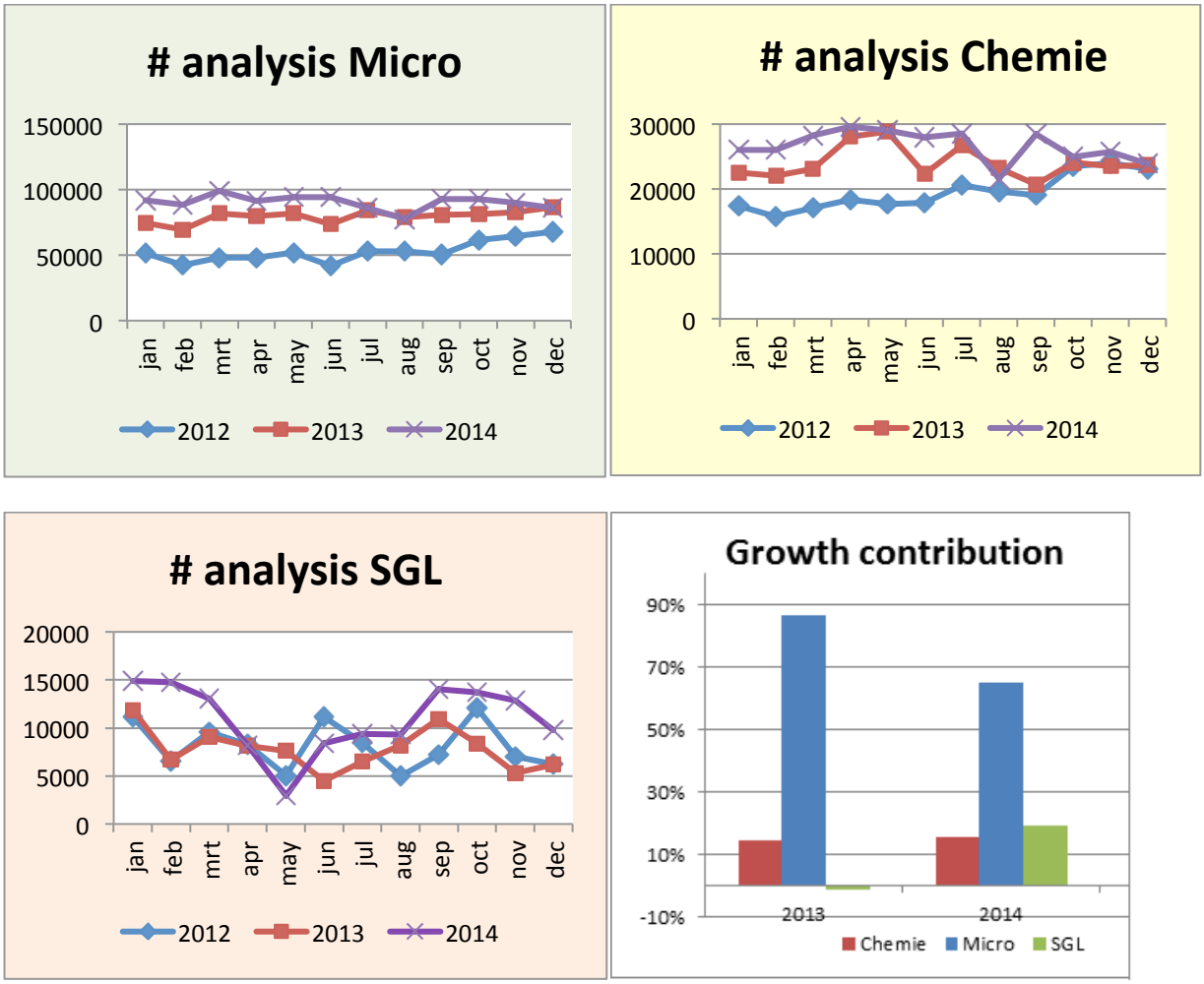

Figure 18: Analysis executed by LQS & growth contribution (LQS, 2014).

APPENDIX II – Cooperative structure

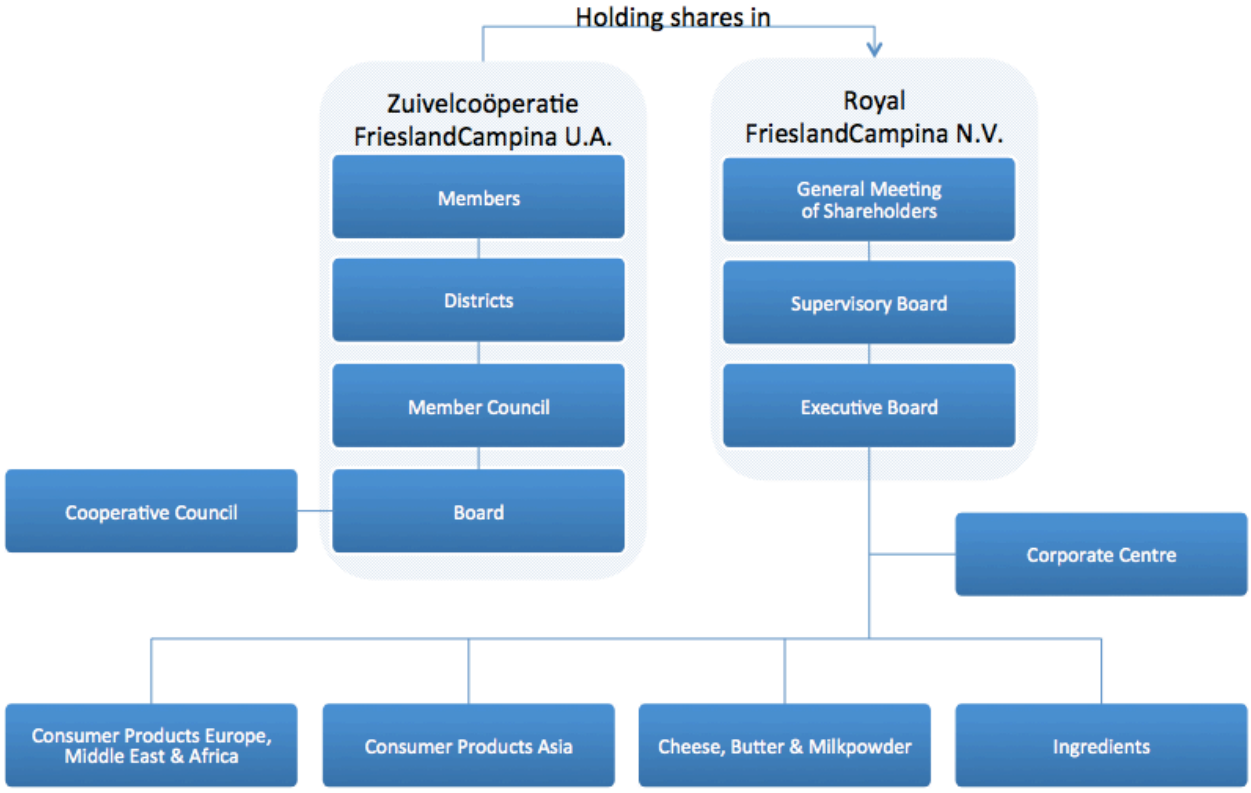

Figure 19: Cooperative structure FrieslandCampina (Royal FrieslandCampina, 2014a).

Via Zuivelcoöperatie FrieslandCampina U.A. the member dairy farmers in the Netherlands, Germany and Belgium own 100 percent of Royal FrieslandCampina N.V. All the member dairy farmers are independent entrepreneurs. The 19.487 member dairy farmers (14.132 member dairy farms) jointly form the Cooperative.

FrieslandCampina has offices in 28 countries and employs a total of 21,186 people. FrieslandCampina's products find their way to more than 100 countries and the central office is located in Amersfoort (NL). FrieslandCampina's activities are divided into four market oriented business groups:

1. Consumer Products Europe, Middle East & Africa
2. Consumer Products Asia
3. Cheese, Butter & Milkpowder
4. Ingredients

APPENDIX III – Key figures FrieslandCampina and key facts LQS

Key numbers FrieslandCampina	2013[1]	2014[2]	Key Facts LQS	2013[3]
Revenue	€11,281M	€11,348M	**Revenue**	€20M
Revenue increase	10.8%	0.6%	**Revenue increase**	N/A
Profit	€157M	€303M	**Profit**	N/A
Employees (average # FTEs)	21,186	22,168	**Employees (average # FTEs)**	175
# Dairy farms	13,887	13,696	**# Laboratory services**	>1.500.000 analysis annually
# Dairy farmers	19,244	19,054	**Microbiology**	>1.000.000 analyses, 80 types
Total milk processed	10,659M kg	10,716M kg	**Analytical chemistry**	>400.000 analyses, 200 types
Facilities/Offices	28 countries	32 countries	**Sensory grading**	>100.000 analyses, 20 types
Export	Over 100 countries	Over 100 countries	**Sample analyses (customers)**	The Netherlands, Belgium, Germany
Investments	€559M	€656M	**Business support (customers)**	Worldwide
Milk price for member farmers (per 100 kilos)	€42.90	€42.70	**# Small issues & big troubles solved**	> 400
Distribution revenue America/ Europe/Africa/Asia	350M 6,965M 1,165M 2,938M	361M 6,768M 1,241M 2,978M	**# Larger support & research projects**	> 20

Table 11: Key figures FrieslandCampina and key facts LQS ([1]Royal FrieslandCampina, 2013; [2]Royal FrieslandCampina, 2014; [3]LQS, 2014).

APPENDIX IV – Organizational structure LQS

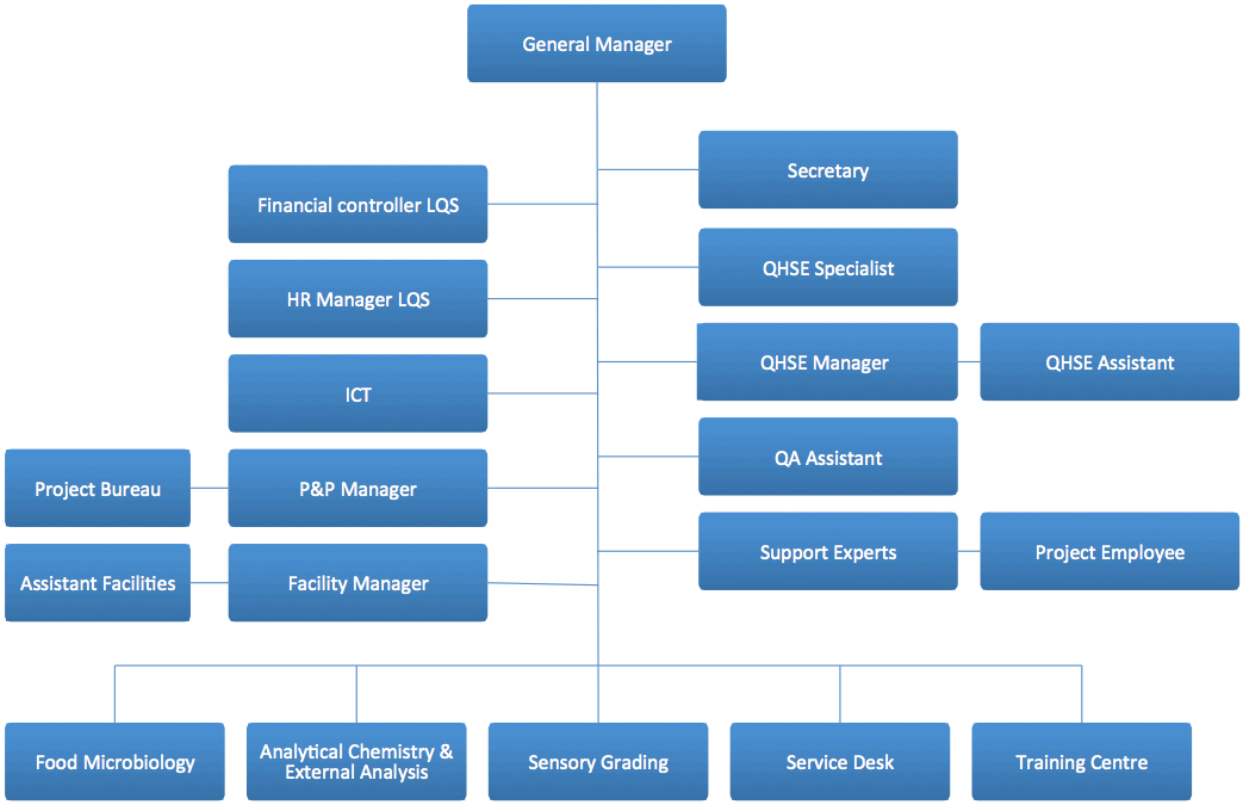

Figure 20: Organizational structure LQS (Royal FrieslandCampina, 2014b).

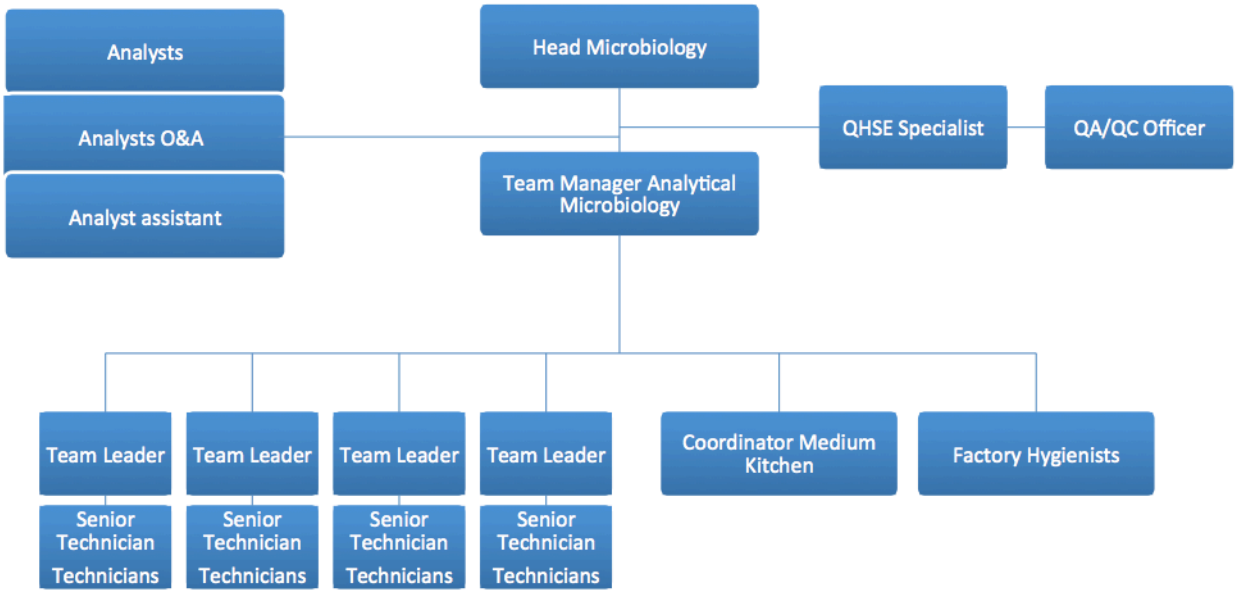

Figure 21: Organizational structure Analytical Microbiology (Royal FrieslandCampina, 2014b).

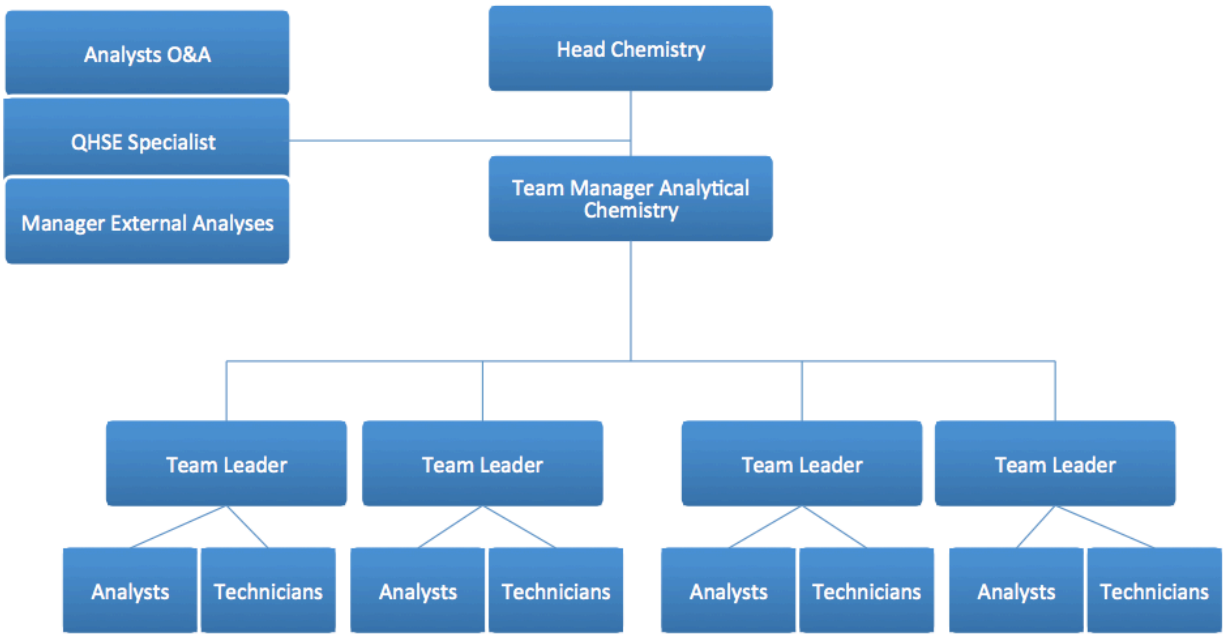

Figure 22: Organizational structure Analytical Chemistry (Royal FrieslandCampina, 2014b).

APPENDIX V – ISSUES SENSORY GRADING LABORATORY

Number of questions/issues a year	75
Number of questions/issues a week	1.5
Number of hours spent per question/issue	0.5
Average	1.5 times a week 0.5 hours per question/issue

Table 12: Number of questions/issues and time spent on these questions/issues.

The questions c.q. issues can be of different nature and importance. Broadly they can be divided into the following three groups in order of most common:

n	Source	Description
1	Customer	Unclear or undesignated OAF, resulting in a wrong analysis or too few analyses in the LIMS system.
2	Sample Logistics	The sequence of the sample series is not good; not a logical batch or product-wise to the SGL. Much hassle in regard to the proper order of reference and batch testing.
3	Customer and/or Sample Logistics	Wrong SAP or LIMS stickers (paste/exchange). Wrong registration of analysis causing wrong results.

Table 13: Three groups of questions/issues.

APPENDIX VI – CUSTOMER SATISFACTION SURVEY (CSS)

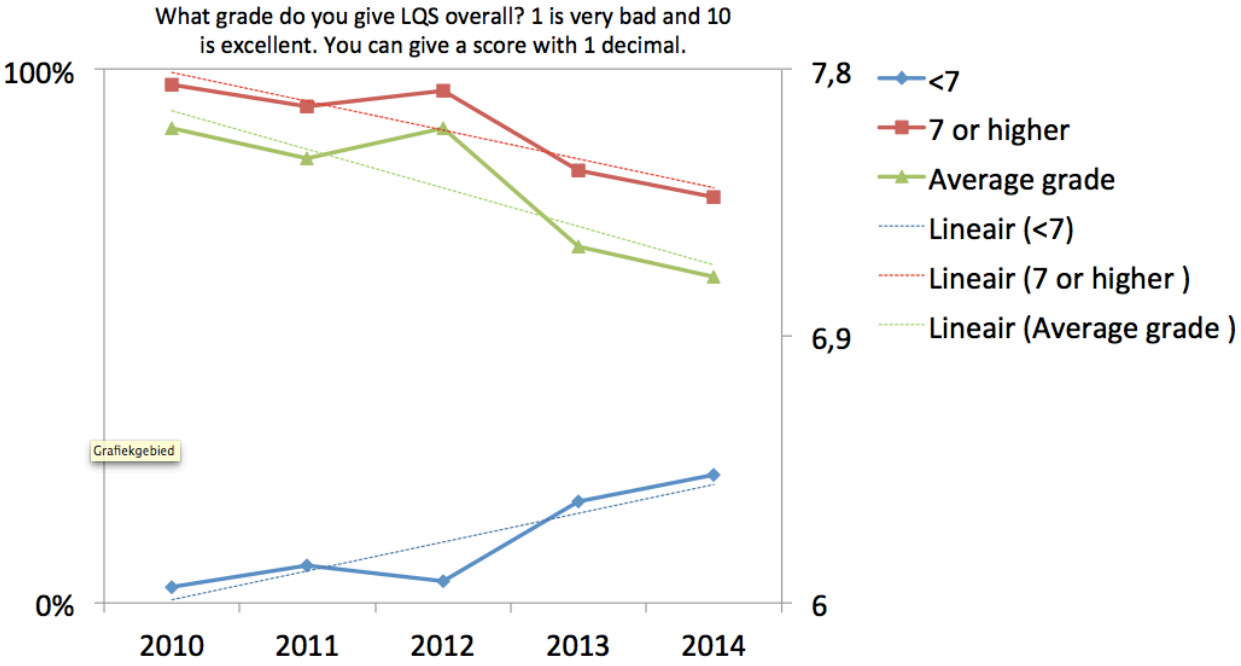

Figure 23: Customer Satisfaction Survey (The Choice, 2014).

APPENDIX VII – Interview protocol of the exploratory interviews

Theme 1: Daily activities and responsibilities of the person involved

1. Can you tell me something about yourself? What is your role within the organization?
2. What are your daily tasks/activities?

Theme 2: Number and scope of customer contacts

3. With whom are you in contact with within LQS/FrieslandCampina?
4. What is the basis of these contacts?
5. In what ways are these contacts created?
6. What kinds of questions/issues arise from these contacts?
7. Via what channels do these contacts run?
8. How are questions/issues dealt with? What are the current processes/steps to be taken?
9. How do you respond to questions/issues? Can you show me an example? Can you estimate how much time you have to spend dealing with customer questions/issues?
10. Can you tell/show me how often you are contacted by customers?
11. What exactly is your role when dealing with customer questions/issues?
12. How do you feel about the fact that you are responsible for these customer contacts? Can you express your feelings about this topic?

    Team leaders:

13. What kind of questions do you get from customers? Can you give some examples?
14. A typical question is: where is my sample? How much time does it take you to answer this question?
15. How often does the phone ring? What do you think this is too much?

    Analysts:

16. Can you sketch an overview of you tasks the next 2 months?
17. Via which channels do these questions come to you and how do you decide if you do it yourself or not?
18. Which steps do you take when you cannot deal with a question/issue?

Theme 3: Thoughts about how the person involved saw solutions given the initial problem

19. What are your insights/views on possible solutions for the research problem? [Elaborate on the answers given]

Extra: Feedback

20. Do you have some remarks/additions/feedback regarding this interview? Can you suggest possible topics that are of importance when dealing with this research problem?
21. Can you give me names/roles within the organization that are important to talk to?

APPENDIX VIII – Coding responses into the SERVQUAL dimensions

Dimensions	Coding labels
Reliability	Focus – internal focus – external focus – company trust – organization's ability – accurately – promises – problem resolution – keep promises - processes
Responsiveness	Willingness to help – flexibility – response time – resolution time – completion – availability – proactivity – status
Assurance	Employee knowledge – employee trust – employee courtesy
Empathy	Caring – individualized attention – acknowledging customer needs/frustrations - customer knowledge
Tangibles	Physical facilities – equipment – appearance – technology – entry point(s)

Table 14: Coding labels.

APPENDIX IX – Customers' perspective

Area	Statement	Coding label
Reliability	*Customer 1: "In my opinion, LQS is too much focused internally and not concerning about customer wishes. They are only focused on survival and processing samples."*	Internal focus
	Customer 1: "When LQS designed their LIMS system, they did not look at how this would work for their customers, only what their benefits were."	Internal focus
	Customer 1: "I think LQS need some new managers from outside the company with a fresh look. Managers who can make breakthrough changes that focus more on customers. That would make it more easeful."	Focus
	Customer 1: "This is not the first time someone is asking me for input for service improvements at LQS, now I would like to see some progress and results."	Company trust
	Customer 2: "Because of the tremendous growth LQS is facing, I think they are really focusing on operational problems and do not think about what the customers expect."	Focus
	Customer 4: "LQS' Service Desk should indicate which points of the SLA are secured and how."	Promises
	Customer 5: "I expect LQS to measure trends and when signaled, direct it to a higher level."	Company trust
	Customer 5: "I do not have confidence in specialized knowledge at LQS, they have to think about outsourcing some activities."	Company trust
	Customer 6: "I think LQS does it well, but you notice the growing pains."	Organization's ability
Responsiveness	*Customer 1: "There is a clear difference between microbiology and Chemistry. At micro, there is a central e-mail address for my questions and requests are adequately handled. At chemistry there is much unclear and we do not know whom to contact for specific questions."*	Willingness to help

	Customer 1: "When samples are out-of-spec the microbiology department pro-actively informs us about the results. At chemistry I always have to ask about the results. I expect from LQS to act proactively when samples are out-of-spec."	Willingness to help
	Customer 2: "I would like LQS to be available 24/7 for service support."	Availability
	Customer 2: "We have an agreement that when methods are newly validated, we would be informed one month in advance. Sometimes this is happening only a day in advance or even not at all. I would like the Service Desk to take this responsibility and proactively inform customers."	Proactivity
	Customer 4: "This month I had to call LQS on a daily basis to ask for the status of my analysis."	Status
	Customer 4: "When SLA's are probably exceeded, I would like to be informed. This can mean out-of-specs or re-analysis. Thus far this is not happening properly."	Proactivity
	Customer 4: "For example last week, I was told that we did not used the sample form properly, but did not receive information what we did wrong. Please tell what went wrong, so we can do it better next time."	Willingness to help
	Customer 4: "LQS is for us release steering, so timely information is very important."	Proactivity
	Customer 5: "When we have a crisis, I would like to contact the Service Desk, which forms a crisis team to cope with our problems immediately."	Availability
	Customer 6: "I expect more early warnings, when LQS notices defects or delays."	Proactivity
Assurance	*Customer 1: "Customers must feel themselves heard by LQS, communication has to improve. I want to be informed about improvement actions."*	Employee courtesy
	Customer 3: "I expect that the Service Desk will direct me to the proper employee that can help me with my issue. Now I often do	Employee knowledge

	not know whom to contact at LQS."	
	Customer 3: "In spite of all the difficulties LQS is facing, I do have the confidence LQS possesses the required knowledge and expertise to provide the information I need."	Employee trust
	Customer 6: "It is unclear who takes ownership of my issues and problems."	Employee trust
Empathy	*Customer 1: "I expect from LQS to deeply understand the customer, what is important for them, and critical issues they face."*	Customer knowledge
	Customer 2: "Not only priority is important, but especially the impact of certain issues for the customer is important. I don't know if LQS is aware of the impact of some things to the customers."	Caring
	Customer 2: "I expect LQS to consider what would happen to the customer in certain cases. When an analysis takes longer for example."	Acknowledging customer needs/frustrations
	Customer 4: "I do not think a lot of employees working at LQS know what we are exactly doing and how important adequate and timely results are to us."	Customer knowledge
	Customer 5: "Individual attention with proper knowledge about what we are doing is something I miss at LQS."	Individualized attention
Tangibles	*Customer 1: "I would prefer a SPOC, where I only have to address one point via e-mail or telephone."*	Entry point(s)
	Customer 3: "One contact for all my questions would take away much headache I have."	Entry point(s)
	Customer 4: "A software that provides tickets to track the progress of the handling of my request would help a lot."	Technology
	Customer 5: "The Service Desk can help to prove a up-to-date overview of validated methods."	Technology

Table 15: Summary of statements made by customers of LQS.

APPENDIX X – Managers' perspective

Area	Statement	Coding label
Reliability	*Manager 1: "I have the feeling that the outside world thinks LQS is more concerned with itself; think there are a lot of operational problems. Customers are completely disconnected whom to approach at LQS and where to drop questions."*	Focus
	Manager 1: "You don't fix the problem by drawing an extra box in the organizational chart without organizing the work processes and stating clear responsibilities. The solution is not fixed to naming 1 or 2 people for the customer support role."	Organization's ability
	Manager 1: "In my opinion we have to apply strict separation between the routine part of our department and the business support."	Organization's ability
	Manager 1: "It would be wonderful if we channeled the internal work processes and team leaders are relieved from most customer contacts and at the end of the day customers are satisfied and the customer support division is not seen as a threshold for these customers."	Processes
	Manager 3: "What happens is that big issues enter the organization fragmented. There is no overview. Fragmented input results in fragmented output in our organization which leads often to complaints."	Processes
	Manager 3: "My suggestion would be to divide all the questions into primary, secondary and tertiary questions and construct work processes according to the type of questions."	Processes
Responsiveness	*Manager 1: "LQS has to get rid of the model where every team leader can be approached. Some team leaders respond quickly and others wait some time before responding. Some team leaders give appropriate responses and others fail to do this. Team leaders should not be the interface with the customers anymore and should focus on achieving operational excellence within analytics services. "*	Processes

	Manager 1: "Eventually, if you look at the cause-and-effect relations, you can name customer service performance on the most right side. This service performance has gone down recent years and has to improve. The idea of customer support is giving the people who we serve the idea that they are central to LQS."	Willingness to help
	Manager 2: "You should take a look in the room where the team leaders of microbiology are, that is pretty intense. The phone is constantly ringing and people are walking in and out, that gives a very chaotic picture."	Processes
	Manager 2: "This even got worse because we are in a change of business hours. We have a lot of benefits to structure these processes."	Processes
Assurance	*Manager 1: "When organizing work processes the emphasis should be on the questions if it adds something for the customers, does it increases time and level of responses, does is add to their feeling of being important and can customers be helped more efficient and effective. That is the core of the support role, all goals relate to the increase of customer satisfaction."*	Employee courtesy
Empathy	*Manager 3: "I hope by introducing a SPOC, customers feel that they are given attention again."*	Caring
Tangibles	*Manager 2: "I would like to introduce a central mail- and telephone box. Now everything enters the organization at 5 team leaders and it is not clear who should handle issues, who is around, and who is not around. What a possible step further would be is that the system provides an automatic answer within one hour to the customer with information about the steps to be taken."*	Technology
	Manager 3: "I think that we, as a management team, do not know where and how many questions/issues enter the organization."	Entry point(s)

Table 16: Summary of statements made by managers at LQS.

APPENDIX XI – Employees' perspective

Area	Statement	Coding label
Reliability	*Team leader 1: "During my performance interviews my supervisors say that I am not a proper contact for my team members. That is because I have to do so many side issues that I am not around that often."*	Organization's ability
	Team leader 2: "I think you have to hire new persons for the customer support. The level has to go up. We started with the single-point-of-contact one and a half years ago and still I do not see progress."	Company trust
	Team leader 3: "You can categorize questions to different groups. Those questions can be bundled and then you have to ask yourself who should be responsible for these questions. The function group that is responsible for the questions/issues should cope with these questions internally within the agreed upon time."	Problem resolution
	Employee 1: We have grown enormous, last 2 years 3 new departments were formed. It is desirable to know from each other what the functions are and responsibilities within these functions. It is not clear who reports to whom."	Processes
	Employee 2: "In my opinion the two main factors that result in problems are communication and knowledge."	Organization's ability
	Expert 3: "The customer is different for routine and experts, but they are treated often in the same manner."	Organization's ability
Responsiveness	*Team leader 1: "Often questions are addressed to more persons because customers do not know whom to contact. Especially if you have to direct a lot of team members, this is pretty distracting."*	Availability
	Team leader 1: "A lot of questions enter the organization and different in nature. All team leaders have a very busy schedule and questions are continuously addressed, even when you are off from work. There is always a risk that you miss a question but you do your best to respond. Often it is not possible to respond right away, your have to do some research and contact people. During that process	Availability

	you sometimes forget what you have to do because issues arise on the work floor. This is very frustrating for the customer; you can say we miss structure to cope with these issues."	
	Team leader 2: "I try to make a clear cut between questions about the regular sample flow and the business support. Questions that should be addressed to analysts are not my responsibility. Not that I cannot answer those questions, but it is nonsense that the customer has to explain his issue multiple times. At the beginning there must be made a clear cut. In my opinion, a kind of Service Desk or single entry."	Willingness to help
	Team leader 3: It often happens that all team leaders are in the 'cc'. That means we al. spend time on it and read it, while only 1 person acts on it. Not everyone is on the same level when it comes to response quality. Discussing these issues was used to be possible, but because of the different working times this is happening less often. That is why I think that if you manage to create a single entry and clearly agree on responsibilities, this would improve service performance. Imagine different shifts where the first shift clearly directs finished issues to the 'finished issues folder', in that way the next shift knows what is still open."	Processes
	Employee 2: "It is important to know who does what and what the status quo of the questions are. What is happening with the question right now and what kind of response is sent to the customer?"	Processes
	Employee 2: "Often people assume that their co-workers will take responsibility for certain questions/issues. Communication is an important factor here."	Willingness to help
	Expert 1: "I heard from multiple customers that the availability of persons in LQS is very low. Customers used to know exactly whom to contact, but now they do not know whom to address and phone and e-mails are not answered."	Availability
	Expert 1: "You already see a split between routine and other questions. Because if someone asks if he could send 100 samples the	Processes

	next day, he should address another person when he wants someone to help and find root problems in his factory. I do feel that it is quite separated already, the routine and the experts. It is often for the customer clear whom they should address.	
Assurance	*Team leader 1: "This is a signal that you need someone that coordinates these issues. That person knows the organization and knows whom to contact for information."*	Employee trust
	Team leader 3: "In our case we work with first laboratory employees. They can validate and have an overview of results. A lot of questions can be answered by those laboratory employees."	Employee knowledge
	Employee 2: "Often contacts are historically originated. Many times I am contacted because people know I respond quick and adequate."	Employee trust
Empathy	*Expert 1: "Maybe experts have to visit the production location once a month. We are very reactive and should become more proactive*	Caring
	Expert 1: I often thought about the fact that we should have a contact point for the different production locations. The experts should fulfill some kind of account manager role.	Individualized attention
Tangibles	*Team leader 3: "I do not think you have to assign the types of questions to different persons, but to a special service point. If that service point cannot cope with a question it has to be directed further in the chain. It has to be agreed upon where questions have to enter the organization. An important factor is to instruct the customers in a very early stage. They have to change their contact addresses and if they do not do that, you have to redirect them to the single entry point."*	Entry point(s)
	Employee 1: "In the ideal situation LQS has only one phone number and e-mail box. The customer is greeted friendly by a person with some specific knowledge. A simple question can be answered right away and more difficult questions are redirected in the organization. We have to track and secure these processes."	Technology

Table 17: Summary of statements made by employees of LQS.

APPENDIX XII – Employee attributes

ServiceFirst: Customer Service Competencies

1. Empathy The ability to think and feel as the customer does in order to better identify and fulfill customer needs and better handle customer complaints	• Listens to and understands the customer problems; does not become defensive in complaint situations • Is able to respond to both the content and feeling of a customer's message • Is able to see situations from the perspectives of both the customer and management • Expresses sympathy and concern for customer problems
2. Behavior flexibility The ability to modify or alter one's expressive behavior to fit different situations	• Alters behavior to better show the customer feelings of concern, wanting to help, etc. • Gauges how to behave by observing the behavior of the customer • Acts differently at different times, with behavior appropriate to the situation at hand
3. Activity level/Energy The ability to maintain a high energy level throughout the day and perform numerous activities without tiring	• Performs tasks quickly and productively • Works with liveliness and vitality • Can work on more than one thing at a time
4. Assertiveness/Dominance The tendency to take the initiative and exercise leadership in customer-oriented situations	• Is self-confident in dealing with customers • Actively offers assistance to customers rather than waiting for them to ask for help • Takes the lead when working on group projects

5. Sociability The inclination to seek our and enjoy social interaction that fosters a friendly working environment	• Is friendly to customers • Enjoys talking with customers • Participates in group activities • Works well with others
6. Personalized The ability to make the interaction experience more personalized	• Gets to know customers' names • Addresses customers by name when known • Takes an interest in customers' specific requests/needs
7. Politeness The ability to be courteous to customers in all times, using consideration and correct manners in dealing with others	• Appropriately uses phrases such as please, thank you, excuse me • Is courteous to customers even when they are rude
8. Helpfulness The readiness to offer assistance to customers and serve them willingly	• Offers extra assistance to customers as needed
9. People orientation The tendency to enjoy being with people rather than being alone; to be active rather than passive; and to be extroverted rather than introverted	• Prefers working in a group to working alone • Likes people • Enjoys helping customers
10. Discretion/Judgment The capacity to distinguish between alternatives and make reasonable decisions	• Can tell the difference between appropriate and inappropriate job behaviors Chooses appropriate job behaviors
11. Customer/Management/Self-Orientation The extent to which the employee places his or her own, the customer's, or management's interests as top priority	• Customer orientation: Places the customer's interests above all others • Management orientation: Places management's interests above all others • Self-orientation: Places his or her own interests above all others

Table 18: ServiceFirst: Customer Service Competencies (Fogli, 2006).

APPENDIX XIII – Characteristics of high-performance organizations

Characteristics of High-Performance Organizations: The Employee Perspective

Leadership practices

Customer orientation

- Employees see a strong emphasis on customer service, and in fact believe their organization does a good job of satisfying customers.
- Customer needs are attended to quickly, whether in initial delivery of products and services or in the resolution of problems.

Quality emphasis

- Senior management is committed to quality and demonstrates this priority in day-to-day decisions. These values are effectively translated and implemented by lower-level managers.
- Employees can see that quality is a priority versus cost containment, and especially versus meeting deadlines.
- Employees believe their work groups do quality work, as judged by clear quality standards, and are able to improve continuously.

Involvement/empowerment

- Employees have the authority and support they need to serve their customers.
- Employees are encouraged to participate in decisions affecting their work and, perhaps more important, to innovate.
- Management solicits and uses opinions of employees in such a way that employees can see the connection

Employee training

- Employees have written development plans to take advantage of the formal and informal skill-improvement opportunities that exist within the company.
- Whether on-the-job or formal, employees see they have the training to perform their current jobs well. This can include specific training on products and services or explicitly on customer service.
- New employees are oriented and able to come up to speed quickly, without undue burden on existing staff.

Employee results

Information/knowledge

• Management creates and communicates a compelling vision and direction for the company. • Employees understand their role in the organization – how their goals fit into overall company objectives. • Employees report having enough information to do their jobs, including company information, advance warning of changes, and information from other departments
Teamwork/cooperation • Employees both within and across departments cooperate to serve customers and to get the work done. • This teamwork is actively supported by management. • Workload is managed effectively within a given work group – the lead is divided fairly and short staffing is not a significant barrier.
Overall satisfaction • Employees derive intrinsic satisfaction from their work, see a good match among their jobs, interests, and their skills and abilities. • Employees are satisfied with and proud of their organization • There is confidence in the company's ability to succeed, leading to long-term stability for the employee.
Employee retention • Employees value their relationship with the organization and have no short-term interest in leaving. • Longer-tenured employees are more efficient and create more value for the organization and its customers.

Table 19: Characteristics of High-Performance Organizations (Wiley & Brooks, 2000).

APPENDIX XIV – Guidelines Service Desk

FrieslandCampina

Laboratory & Quality Services

SERVICE DESK MANUAL

This Manual contains:

1. Procedures: documents that describe the various processes when dealing with customer requests, including flow charts.
2. Work instructions: documents that should be used while executing the procedures.

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Document classification: Restricted

Service Desk overview

This Service Desk Manual describes the procedures and processes to be executed by the LQS Service Desk and sets forth the roles and responsibilities of the actors involved in the Customer Service activities within LQS Leeuwarden. Service Desk procedures are the services and activities required to coordinate and respond to calls and e-mails (like issues and questions) made by FrieslandCampina production locations. The Service Desk is responsible for providing a single point of contact (SPOC) and for providing ownership (e.g. logging, tracking, resolution, communicating, escalating and reporting) of calls and e-mails. Issues and questions can be resolved by the Service Desk staff or may need to be referred/escalated to more-specialized entities for resolution, such as second line support, FrieslandCampina/LQS staff, a supplier or other third parties.

The Service Desk strives to record 100% of all information and service request received. Each issue will be logged in a Service Desk database system for reporting and analysis purposes. An issue tracking number or ticket information will be immediately sent to the requestor via email, given the ticket number and the name of the responded person. For all requests that are not resolved completely, the issue will be logged for continue troubleshooting. Depending on the severity or cause of the issue, the issue may be escalated to other specialists or expertise for resolution. The time frame for resolving the issues/problems would be indicated SLAs that need to be constructed (see section 5.9).

At times, there are some issues and other escalated issues that may cause heavy call/email volumes and may prevent staffs from getting back to someone within the standard timeframe. Therefore, the Service Desk retains responsibility to follow up on the issue until its resolution is solved completely. Hence, the timeframe would be modified to reflect the current condition, alerting requestors to potentially have a longer wait times.

For those issues beyond the skill or knowledge of the Service Desk employee to resolve, the Service Desk contacts a problem manager. The problem manager will initiate the time needed to work on the issue and the Service Desk will contact the customer accordingly.

Service objectives

The following are the key service objectives LQS expects to achieve by setting up a Service Desk and setting up SLA's with customers:

- Continuously improve customer satisfaction
- Logging, tracking, resolution, communication, escalation and reporting of customer issues and questions.
- Monitor, improve and restate SLA performance
- Improve service and resolution speed through optimal service hours, self-service abilities and skilled Service Desk staff.
- Improve efficiency and effectiveness by increasing information and knowledge stored in the Service Desk tool/software/database and best practices in areas of customer reporting, logging, tracking, and resolving of customer issues/questions/problems.

- Improve efficiency and effectiveness by early identification of trends and root causes.
- Monthly review performance targets.

General roles and responsibilities Service Desk

- Identify, escalate, manage issues, problems, and closure process including those escalated to third parties
- Resolve issues if possible; otherwise escalate to appropriate level resource as required.
- Coordinate the Root Cause Analysis process on recurring and priority 1 issues.
- Proactive and timely inform the customer with information about new validated methods.
- If lead times are likely to be exceeded LQS will inform the customer pro-actively (working together with responsible result-release person).
- Ownership responsibility during the lifecycle of a call/e-mail till closure, acceptance by the requestor.
- Develop, document and maintain procedures according to the prescribed requirements.
- Record and redirect out-of-scope issues, problems, and questions. SPOC redirects ownership of the call/e-mail and is not responsible for the content of the closure itself, but sees to it that the issue or problem is closed.

The purpose of this manual is to have one document containing all Service Desk processes active within the LQS Service Desk. This document describes the content of the services that are offered. Per service, a brief summary is given in the next paragraphs.

Adequate use of this manual will lead to uniformity in documents with version numbers, date of last changes and owners of the document. It will lead to an up-to-date knowledge base. The goal is to describe processes and instructions to deal with customers in a structured way, so a proper handling of issues and problems can be given where possible measures can be taken to prevent re-occurrence of the issue or problem. The flowcharts are constructed by classifying contacts between customers and the Service Desk into three categories:

1. Issues/Questions: Issues and questions can be raised by the customer towards the Service Desk of LQS. Complaints are in the first instance not part of this manual but can be included in a later stage. Most issues and questions are concerned with the content and scope of LQS' services and sample related questions. For frequently asked questions procedures, work instructions and forms are constructed and "RASCI's" are appointed to provide optimal and uniform service to LQS's customers.
2. Problems: Problems are the issues and questions that cannot be answered/dealt with by the first level Service Desk employees. Again procedures and RASCI's are constructed and ownership of processes is appointed.
3. Escalations: Escalations are issues and questions that are escalated by the Service Desk employee or the Service Desk tool. Escalations are those issues and questions that are estimated as very important (e.g. based on impact, functional area, priority for customers, number of

customers affected, type of issue, the number of times the problem has recurred, etc.). Issues and problems can be escalated throughout the process.

The impact of an issue or problem is a composite of many factors. Constantly, a consideration has to be made about the priority of the issues or problems. The priority defines the relative importance of an issue; based on impact (the effect an issue is having on the business) and urgency (a measure of how long it will be until an issue has a significant impact on the business). Priority determines the order in which incidents are handled. Criteria for determining impact, urgency, priority, and target resolution time are typically defined in SLAs and will be discussed in section 9.

Depending on the specific process (e.g. issue management, problem management, etc.), different responsibilities are assigned to LQS' employees. The different processes will now be described using flowcharts and responsibilities of the different actors will be given. When processes mention the Service Desk tool, it is referred to the tool that is described in section 4.3.

Issue management

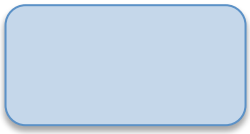
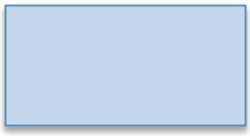
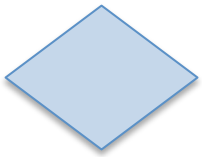
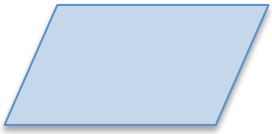
An issue is defined as "any event in which a customer sends a request to the Service Desk with low to medium priority and can be solved by the Service Desk employee." Issues and questions are handled according to their priority. In the SLA section of this manual the priorities and their reaction and resolution times are described.

Function	Responsibilities
The Service Desk	The Service Desk employee monitors progress of the issues and questions against the defined action plan. The Service Desk tool is used by the Service Desk for monitoring and tracking of all issues and problems. The Service Desk identifies the issue and makes sure all necessary information is acquired to resolve the issue. All open issues are clearly visible to the Service Desk employees to enable them the checking of incoming issues against existing issues. To ensure a consistent approach is taken in managing problems affecting customers, procedures for a Service Desk employee as an issue coordinator are constructed. This to improve uniform work processes, effectiveness, efficiency and customer satisfaction. <u>Issue recording</u> • Ensure all issues are reported and recorded. • Validate the issue. • Ensure appropriate information is gathered from the customer or other sources to enable issue investigation. • Ensure that the customer provides all relevant information regarding the issue, impact and priority. • Confirm these details in writing with the customer and document you have done so. • Ensure regular process updates are being given to the customer. <u>Issue definition</u> • Clearly define the issue/question. • Check against the knowledgebase to identify if this is a known issue

	with an available fix or an issue that requires to be assigned to the next level for investigation and resolution. • Ensure the knowledgebase is updated, as each issue is resolved, thus enabling Service Desk employees to undertake initial assessment of known issues. <u>Issue assessment</u> • Assess the issue to identify: category of the issue – priority – impact – authority required to carry out the work – how to monitor and close. • Check, investigate and analyze any related calls/emails regarding the problem for historical trends. <u>Issue assignment</u> • First level resolution of the issue. • Agree action plan for subsequent investigation and resolution with the customer. <u>Issue monitoring</u> • Check progress against agreed action plan on a regular basis. • Communicate progress to all interested parties. • If progress is being impeded establish what constraints/issues are causing delay. <u>Issue resolution</u> • Ensure resolution proposed is agreed with all relevant parties. <u>Issue closure</u> • Confirm with the customer that the resolution provided has satisfactorily solved the issue reported and document with whom and when this was agreed. • Complete issue closure report. <u>Trend analysis</u> • Undertake trend analysis of issue reported and maintain records of the issue types and frequency reported. • Frequently review any common trends and agree any corrective action to eliminate reoccurrence. <u>Customer relationship</u> • Place the customer at the heart of the business. • Maintain a professional approach to interaction with the customer and demonstrate empathy with the customer's situation. • Undertake customer surveys to establish effectiveness of the solution • Improve communication with the customer and discuss the best practice in managing issues.
The Problem Manager	-
The Escalation Manager	-
The specialist	-
Third parties	-
LQS management	Make sure frequent issues are reported and trends analyzed.

Procedure

To give an overview of the procedures that have to be taken when dealing with customer issues/problems at the Service Desk, a process flow chart is designed to give a representative overview of the steps to be taken. The symbols in the flow chart represent:

Symbol	Represents	Example
	Start/end	Receive request
	Activity/process	Solve issue first level
	Decision	Is it within first level scope? Can result in multiple outputs
	Input/output of data	Database checked for answers
	Document/report	Confirmation of the registration and ticket number to the customer
	Connector	Go to another page or another part of the flow chart
	Process flow	A flow of logic/process steps to be taken

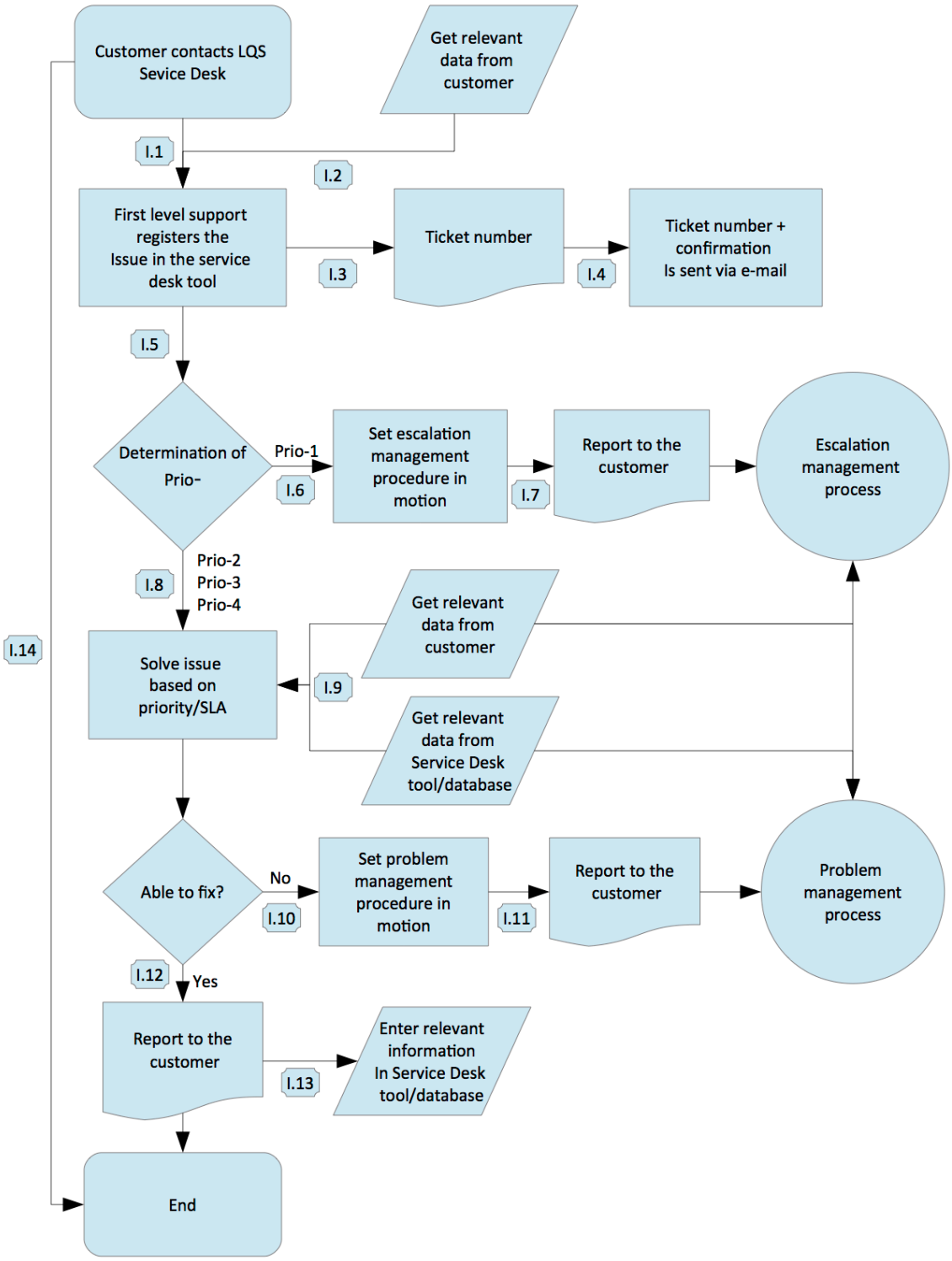


Figure 24: Issue management process.

I.1 The customer contacts the Service Desk, giving all relevant information available. The customer can contact LQS Service desk via telephone (also voice mail) and e-mail. SLA's are already constructed to determine the availability and response time of the Service Desk

I.2 The Service Desk determines if additional information is needed.

I.3 The Service Desk will register the issue in the Service Desk support tool, the tool will return an incident number. An e-mail will automatically be registered in the Service Desk tool and a ticket number will be generated. Incoming calls or voicemail messages will be manually entered in the Service Desk tool by the Service Desk employee.

I.4 The Service Desk tool will automatically sent a confirmation to the customer with the ticket number that states that the issue is in progress and within which timeframe a response can be expected.

I.5 The Service Desk determines here type and priority of question/issue based on knowledge, experience and information provided by the customer.

I.6 When the Service Desk employee sets Prio-1, based on all relevant information, the escalation management procedure is set in motion.

I.7 The customer will be informed that the issue is escalated and will be provided with an updated response and resolution time. During the escalation management process, the customer is updated frequently.

I.8 Based on priority of issues, waiting times of issues and SLA's, a consideration must be made which issue should be processed.

I.9 The first level support of LQS will try to solve the issue using his/her knowledge and skills as well as the knowledge database in Service Desk tool and additional information from the customer.

I.10 If the issue is solved, first level support will close the issue in the Service Desk tool. If not solved, assign the issue to second level support/Problem Manager. Ownership of the problems is assigned to a Problem Manager based on classifications of the problem. An overview of Problem Managers for specific problems can be found in this document. Assigning the issue is based on the following classifications:

- Impact
- Functional area
- Priority
- Type of issue

I.11 The customer will be informed that the issue is escalated and will be provided with an updated response and resolution time. During the problem management process, the number of times the customer is updated depends on the priority.

I.12 The Service Desk support should come up with a solution within the boundaries of the SLA and report to the customer.

I.13 First level support registers the solution information regarding the resolution of the issue in the Service Desk tool and sets the status to "closed".

I. 14 Trend analysis is applied by the Service Desk employee to see if SLA's are met. Evaluation of trends will determine readjustments of procedures or readjustments of the SLA's.

Problem management

The problem management process identifies and manages the issues that cannot be solved by the Customer Service Desk. A problem is a (recurring) issue of which the underlying cause is unknown. A problem is solved when a solution for the cause is provided and has been approved by the customer.

Function	Responsibilities
The Service Desk	The Service Desk employee monitors progress of the problem against the defined action plan. The Service Desk tool is used by the Service Desk for monitoring and tracking of all issues and problems. The Service Desk raises problem records and tracks them through the resolution. All open problems are clearly visible to the Service Desk employees to enable them the checking of incoming issues against existing problems. The Service Desk is also responsible for keeping the Problem Managers and relevant employees regularly informed of the progress of problems. To ensure a consistent approach is taken in managing problems affecting customers, procedures for a Service Desk employee as a problem coordinator need to be constructed. This to improve uniform work processes, effectiveness, efficiency and customer satisfaction. <u>Problem recording</u> • Validate the problem. • Ensure all problems are reported and recorded. • Ensure that the customer provides all relevant information regarding the problem, impact and priority. • Confirm these details in writing with the customer and document you have done so. • Ensure regular process updates are being given to the customer. <u>Problem definition</u> • Clearly define the problem. • Check against the knowledgebase to identify if this is a known problem with an available fix or a problem that requires to be assigned to the next level for investigation and resolution. <u>Problem assessment</u> • Assess the problem to identify: category of the problem – priority – impact – authority required to carry out the work – which Problem Manager to assign to – how to monitor and close. • Check, investigate and analyze any related calls/emails regarding the problem for historical trends.

	Problem assignment • Assign problem to identified Problem Manager. • Agree action plan for subsequent investigation and resolution with the Problem Manager. Problem monitoring • Check progress against agreed action plan on a regular basis. • Communicate progress to all interested parties. • If progress is being impeded establish what constraints/issues are causing delay. Problem resolution • Ensure resolution proposed is agreed with all relevant parties. Problem closure • Confirm with Problem Manager that the success criteria agreed with the customer has been achieved and documented. • Confirm with the customer that the resolution provided has satisfactorily solved the problem reported and document with whom and when this was agreed. • Complete problem closure report. Trend analysis • Undertake trend analysis of problems reported and maintain records of the problem types and frequency reported. • Engage with Problem Managers to review any common trends and agree any corrective action to eliminate reoccurrence. Customer relationship • Place the customer at the heart of the business. • Maintain a professional approach to interaction with the customer and demonstrate empathy with the customer's situation. • Undertake customer surveys to establish effectiveness of the solution. • Improve communication with the customer and discuss the best practice in managing problems/issues.
The Problem Manager	Problem recording • Ensure appropriate information is gathered from the customer, the Service Desk tool or other sources to enable problem investigation. Problem definition • Ensure the knowledgebase is updated, as each problem is resolved, thus enabling Service Desk employees to undertake initial assessment of known problems. Problem assessment Review the problem to: • Confirm you have the capability to resolve the problem. • Ensure that the information gathered is sufficient. • Identify resources required to investigate and resolve the problem. • Confirm acceptance of ownership of the problem. • Compile and own an action plan. Problem assignment • Validate availability and assign the problem to an identified resource within LQS. Ensure assigned resource is conversant with the action

	plan for subsequent investigation and resolution. • When the problem spans multiple disciplines, or when escalated to third parties by a specialist, act as a problem coordinator and act as a problem owner. <u>Problem monitoring</u> • Check progress against agreed action plans on a regular basis. • Communicate progress with the Service Desk employee. • If progress is being impeded establish what constraints/issues are causing the delay. <u>Problem resolution</u> • Ensure the proposed resolution has been tested and validated. <u>Problem closure</u> • Contribute to the problem closure report. <u>Working with others to serve customers</u> • Establish and maintain contact with other Problem Managers, solution owners, Service Desk employees as appropriate. • Agree lines of frequency of communication for each problem being managed.
The Escalation Manager	-
The specialist	-
Third parties	-
LQS management	Make sure frequent problems are reported and trends analyzed.

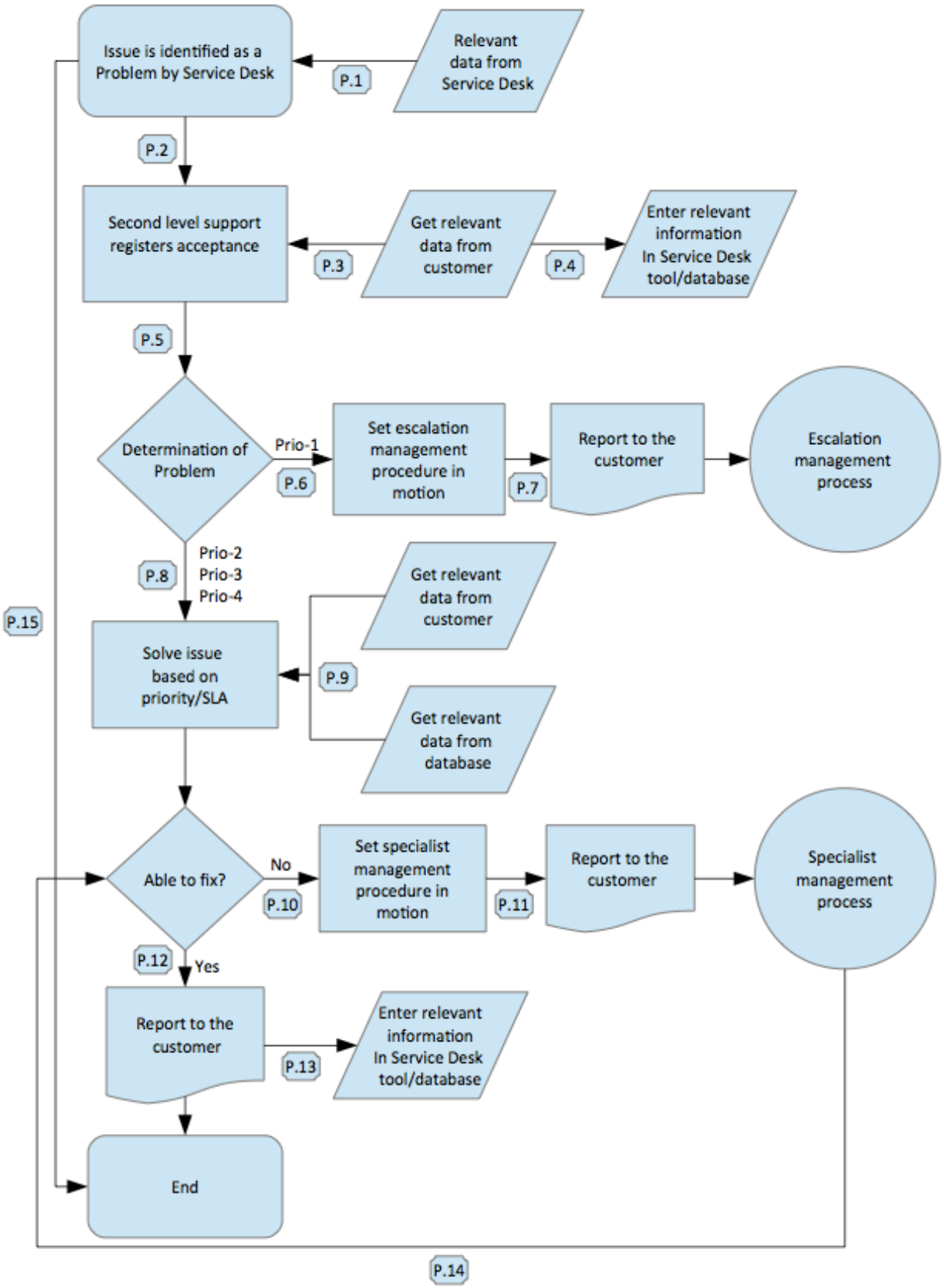


Figure 25: Problem management process.

P.1 When assigning the issue to the second level support, the first level will add as much information concerning the issue as they have.

P.2 When the issue is identified as a problem, the Service Desk will assign a Problem Manager to the issue. When an issue is assigned to the second level this person will automatically get a notification on the screen. The next classifications are available for issues:

- Impact
- Functional area
- Priority
- Type of issue

P.3 When additional information is needed from the customer, the Problem Manager should contact the customer.

P.4 Additional information is gathered and put into the Service Desk tool.

P.5 The second level support person will analyze the problem based on priority and SLA's, and classifies it.

P.6 If the problem has the priority "Critical" or exceeding the timelines of the SLA then second level support will escalate. On escalation the procedure escalation management is applicable.

P.7 The customer will be informed that the issue is escalated and will be provided with an updated response time. During the escalation management process, the customer is updated frequently.

P.8 Based on priority of the problem, waiting times of issues and SLA's, a consideration must be made which problem should be processed.

P.9 The second level support/Problem Manager should come up with a solution within the boundaries of the SLA and possibly additional information should be collected at the customer or knowledge databases.

P.10 If the second level support cannot solve the problem, the problem will be directed towards a specialist. The Problem Manager stays responsible for the closure of the problem.

P.11 The customer must be notified via e-mail with updated resolution time and is asked for approval.

P.12 The Problem Manager should come up with a solution within the boundaries of the SLA and report to the customer.

P.13 The Problem Manager registers the solution information regarding the resolution of the issue in the Service Desk tool and sets the status to "closed". The Service Desk employee will monitor the resolution according to the SLA.

P.14 Specialists provide their expert view and account to the Problem Manager

P.15 Trend analysis is applied by the Service Desk employee to see if SLA's are met. Evaluation of trends will determine readjustments of procedures or readjustments of the SLA's.

Specialist Management

Specialists are only consulted in case the problem manager doesn't have the knowledge for appropriate resolution of the problem.

Function	Responsibilities
The Service Desk	Problem recording • Ensure all problems are reported and recorded. • Ensure that the customer provides all relevant information regarding the problem, impact and priority. • Ensure regular process updates are being given to the customer. Problem assignment • Agree action plan for subsequent investigation and resolution with the Problem Manager. Problem monitoring • Check progress against agreed action plan on a regular basis. • Communicate progress to all interested parties. • If progress is being impeded establish what constraints/issues are causing delay. Problem closure • Confirm with Problem Manager that the success criteria agreed with the customer has been achieved and documented. • Confirm with the customer that the resolution provided has satisfactorily solved the problem reported and document with whom and when this was agreed. • Complete problem closure report. Trend analysis • Undertake trend analysis of problems reported and maintain records of the problem types and frequency reported. • Engage with Problem Managers to review any common trends and agree any corrective action to eliminate reoccurrence. Customer relationship • Place the customer at the heart of the business. • Maintain a professional approach to interaction with the customer and demonstrate empathy with the customer's situation. • Undertake customer surveys to establish effectiveness of the solution. • Improve communication with the customer and discuss the best practice in managing problems/issues.
The Problem Manager	Problem recording • Ensure appropriate information is gathered from the customer, the Service Desk tool or other sources to enable problem investigation.

	Problem definition • Ensure the knowledgebase is updated, as each problem is resolved, thus enabling Service Desk employees to undertake initial assessment of known problems. Problem assessment Review the problem to: • Ensure that the information gathered is sufficient. • Identify resources required to investigate and resolve the problem. • Confirm acceptance of ownership of the problem. • Compile and own an action plan. Problem assignment • Validate availability and assign the problem to an identified resource within LQS. Ensure assigned resource is conversant with the action plan for subsequent investigation and resolution. • When the problem spans multiple disciplines, or when escalated to third parties by a specialist, act as a problem coordinator and act as a problem owner. Problem monitoring • Check progress against agreed action plans on a regular basis. • Communicate progress with the Service Desk employee. • If progress is being impeded establish what constraints/issues are causing the delay. Problem resolution • Ensure the proposed resolution has been tested and validated. Problem closure • Contribute to the problem closure report. Working with others to serve customers • Establish and maintain contact with other Problem Managers, solution owners, Service Desk employees as appropriate. • Agree lines of frequency of communication for each problem being managed.
The Escalation Manager	-
The specialist	Problem recording • Ensure appropriate information is gathered from the customer, the Service Desk tool, the problem manager or other sources to enable problem investigation. Problem assessment Review the problem to: • Confirm you have the capability to resolve the problem. • Ensure that the information gathered is sufficient. • Identify resources required to investigate and resolve the problem. • Compile and own an action plan in consultation with the Problem Manager. Problem assignment • If applicable, escalate the problem to third parties. When the problem spans multiple disciplines, act as a problem coordinator.

	Problem monitoring • Communicate progress with the Problem Manager. • If progress is being impeded establish what constraints/issues are causing the delay. Problem resolution • Ensure the proposed resolution has been tested and validated. Problem closure • Contribute to the problem closure report when required. Working with others to serve customers • Establish and maintain contact with other problem managers, solution owners, Service Desk employees as appropriate. • Agree lines of frequency of communication for each problem being managed.
Third parties	Specialists can escalate problems to third parties. The specialist is responsible for the (tested and validated) resolution. In case of escalation to third parties, the Problem Manager is still owner of the problem and responsible for resolution, reporting and communication towards the customer and the Service Desk tool.
LQS management	Make sure frequent problems are reported and trends analyzed.

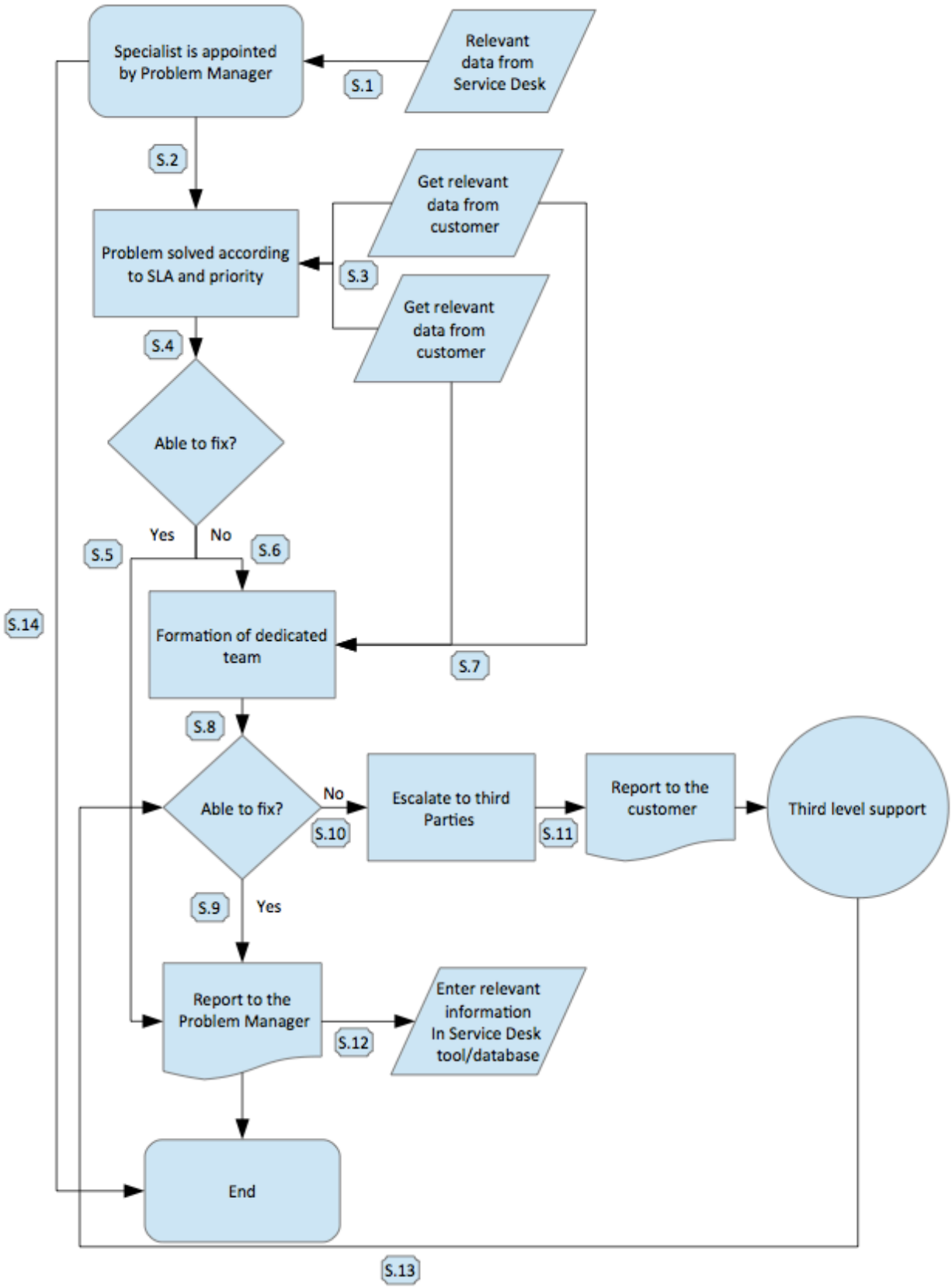


Figure 26: Specialist management process.

S.1 The specialist procedure can be triggered by the Problem Manager and relevant information can be extracted from the Service Desk tool/database

S.2 The Problem Manager appoints a specialist for problem solving.

S.3 When additional information is needed from the customer, the specialist should contact the customer.

S.4 The specialist should come up with a solution within the boundaries of the SLA and possibly additional information should be collected at the customer or knowledge databases.

S.5 If the specialist can solve the problem, the Problem Manager is notified. The Problem Manager is responsible for reporting and closure.

S.6 If the specialist cannot solve the problem, a dedicated team will be formed. The specialist stays responsible for reporting to the Problem Manager.

S.7 The dedicated team will gather necessary information from the database and customer and solve the issue together with the specialist.

S.8 The dedicated team should come up with a solution within the boundaries of the SLA and possibly additional information should be collected at the customer or knowledge databases.

S.9 If the dedicated ream can solve the problem, the Problem Manager is notified. The Problem Manager is responsible for reporting and closure.

S.10 If necessary the decision will be taken to escalate to the 3rd level (external consultancy or the supplier) or to deploy more 2nd level resources.

S.11 The customer must be notified via e-mail with updated resolution time and is asked for approval.

S.12 The Problem Manager registers the solution information regarding the resolution of the issue in the Service Desk tool and sets the status to “closed”. The Service Desk employee will monitor the resolution according to the SLA.

S.13 Specialists can escalate problems to third parties. The specialist is responsible for the (tested and validated) resolution. In case of escalation to third parties, the Problem Manager is still owner of the problem and responsible for resolution, reporting and communication towards the customer and the Service Desk tool.

S.14 Trend analysis is applied by the Service Desk employee to see if SLA’s are met. Evaluation of trends will determine readjustments of procedures or readjustments of the SLA’s.

Escalation Management

Escalation management is to provide guidelines to support the adherence to customer expectations, to ensure that actions are taken accordingly, and agree the handling of potential breaches of SLA's. Escalations are there to minimize the impact to the customers. At all stages a customer is informed about the status of his/her call/e-mail, and the expected time-to-solution supported by the supporting consultant

Function	Responsibilities
The Service Desk	The Service Desk employee monitors progress of the escalated problem against the defined action plan. All open problems are clearly visible to the Service Desk employees to enable them the checking of incoming issues against existing problems. <u>Escalation recording</u> • Validate the escalated problem. • Ensure all problems are reported and recorded. • Ensure appropriate information is gathered from the customer or other sources to enable issue investigation. • Ensure that the customer provides all relevant information regarding the problem, impact and priority. • Confirm these details in writing with the customer and document you have done so. • Ensure regular process updates are being given to the customer. <u>Escalation definition</u> • Clearly define the problem. • Check against the knowledgebase to identify if this is a known problem with an available fix or a problem that requires to be assigned to the next level for investigation and resolution. • Ensure the knowledgebase is updated, as each problem is resolved, thus enabling Service Desk employees to undertake initial assessment of known problems. <u>Escalation assessment</u> • Assess the problem to identify: category of the problem – priority – impact – authority required to carry out the work – which Escalation Manager to assign to – how to monitor and close. • Check, investigate and analyze any related calls/emails regarding the escalated problem for historical trends. <u>Escalation assignment</u> • Assign problem to identified Escalation Manager. • Agree action plan for subsequent investigation and resolution with the Escalation Manager. <u>Escalation monitoring</u> • Check progress against agreed action plan on a regular basis. • Communicate progress to all interested parties. • If progress is being impeded establish what constraints/issues are causing delay.

	Escalation resolution • Ensure resolution proposed is agreed with all relevant parties. Escalation closure • Confirm with Escalation Manager that the success criteria agreed with the customer has been achieved and documented. • Confirm with the customer that the resolution provided has satisfactorily solved the problem reported and document with whom and when this was agreed. • Complete problem closure report. Trend analysis • Undertake trend analysis of problems reported and maintain records of the problem types and frequency reported. • Engage with Escalation Managers to review any common trends and agree any corrective action to eliminate reoccurrence. Customer relationship • Place the customer at the heart of the business. • Maintain a professional approach to interaction with the customer and demonstrate empathy with the customer's situation. • Undertake customer surveys to establish effectiveness of the solution • Improve communication with the customer and discuss the best practice in managing problems/issues.
The Problem Manager	Escalation assignment • Validate availability and assign the problem to an identified Escalation Manager within LQS. Ensure assigned resource is conversant with the action plan for subsequent investigation and resolution. Escalation monitoring • Communicate progress with the Service Desk employee. • If progress is being impeded establish what constraints/issues are causing the delay. Escalation closure • Contribute to the problem closure report when required. Working with others to serve customers • Establish and maintain contact with other problem managers, solution owners, Service Desk employees as appropriate. • Agree lines of frequency of communication for each problem being managed.
The Escalation Manager	Escalation recording • Validate the problem. • Ensure all problems are reported and recorded. • Ensure appropriate information is gathered from the customer or other sources to enable issue investigation. • Ensure that the customer provides all relevant information regarding the problem, impact and priority. • Confirm these details in writing with the customer and document you have done so. • Ensure regular process updates are being given to the customer. Review the problem to:

- Confirm you have the capability to resolve the problem.
- Ensure that the information gathered is sufficient.
- Identify resources required to investigate and resolve the problem.
- Confirm acceptance of ownership of the problem.
- Compile and own an action plan.

Escalation definition

- Clearly define the problem.
- Check against the knowledgebase to identify if this is a known problem with an available fix or a problem that requires to be assigned to third parties for investigation and resolution.
- Ensure the knowledgebase is updated, as each problem is resolved, thus enabling Service Desk employees to undertake initial assessment of known problems.

Escalation assessment

- Assess the problem to identify: category of the problem – priority – impact – authority required to carry out the work – how to monitor and close.
- Check, investigate and analyze any related calls/emails regarding the problem for historical trends.

Escalation assignment

- In case of high priority, LQS's managers should be alerted and should be included in the process.
- The Escalation Manager is responsible for the formation of a dedicated team.
- If applicable, escalate the problem to third parties. When the problem spans multiple disciplines, act as a problem coordinator and problem owner.
- Agree action plan for subsequent investigation and resolution with the problem manager.

Escalation monitoring

- Check progress against agreed action plan on a regular basis.
- Communicate progress to all interested parties.
- If progress is being impeded establish what constraints/issues are causing delay.

Escalation resolution

- Ensure resolution proposed is agreed with all relevant parties.

Escalation closure

- Confirm with the Service Desk that the success criteria agreed with the customer has been achieved and documented.
- Confirm with the customer that the resolution provided has satisfactorily solved the problem reported and document with whom and when this was agreed.
- Complete problem closure report.

Trend analysis

- Undertake trend analysis of problems reported and maintain records of the problem types and frequency reported.
- Engage with the dedicated team to review any common trends and

	agree any corrective action to eliminate reoccurrence. Customer relationship • Place the customer at the heart of the business. • Maintain a professional approach to interaction with the customer and demonstrate empathy with the customer's situation. • Undertake customer surveys to establish effectiveness of the solution • Improve communication with the customer and discuss the best practice in managing problems/issues.
The specialist	The specialist can escalate problems to the Escalation Manager when the problem has high complexity and low to medium priority. The Escalation Manager is responsible for the (tested and validated) resolution. In case of escalation to the Escalation Manager, the specialist or Problem Manager is no longer owner of the problem and responsible for resolution, reporting and communication towards the customer and the Service Desk tool.
Third parties	The Escalation Manager can escalate problems to third parties. The Escalation Manager is responsible for the (tested and validated) resolution. In case of escalation to third parties, the Escalation Manager is owner of the problem and responsible for resolution, reporting and communication towards the customer and the Service Desk tool.
LQS management	Review the problem to: • Ensure that the information gathered is sufficient. • Identify resources required to investigate and resolve the problem. Escalation monitoring • Check progress against agreed action plan on a regular basis. • Ensure you are updated frequently and involved in the resolution process. • Communicate progress to all interested parties. • If progress is being impeded establish what constraints/issues are causing delay. Escalation resolution • Ensure resolution proposed is agreed with all relevant parties. Escalation closure • Confirm with the Escalation Manager that the success criteria agreed with the customer has been achieved and documented. Trend analysis • Undertake trend analysis of problems reported and maintain records of the problem types and frequency reported. • Engage with problem managers to review any common trends and agree any corrective action to eliminate reoccurrence. Working with others to serve customers • Establish and maintain contact with other Escalation Managers, Problem Managers, specialists, solution owners, Service Desk employees as appropriate. • Agree lines of frequency of communication for each problem being managed.

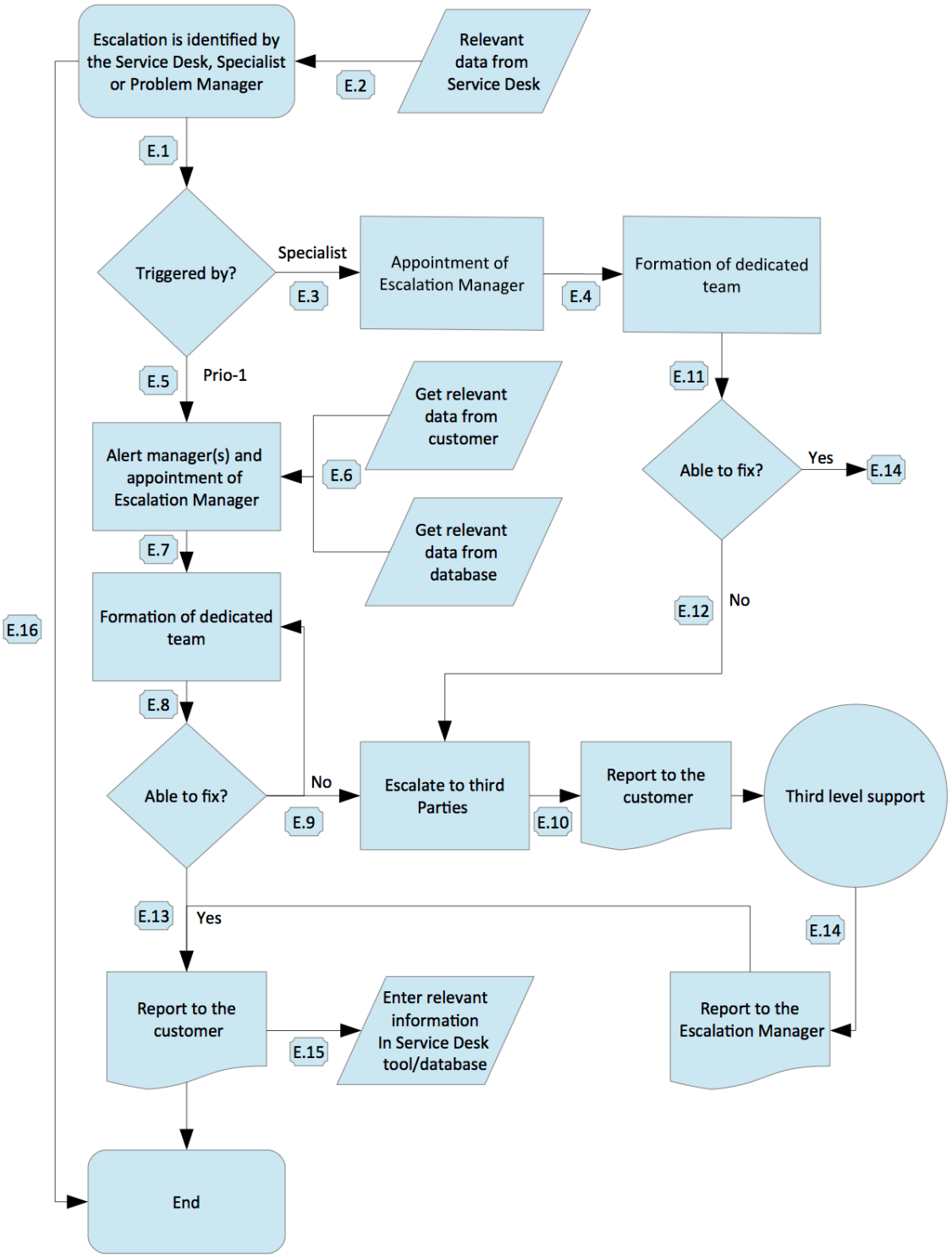


Figure 27: Escalation management process.

E.1 The escalation procedure can be triggered by:

- The service desk tool monitoring possible breaches of the service levels.
- By issues with priority critical and high impact.
- By any participant involvement in the process having proper reasons for escalation.

E.2 In case of escalation, the Service Desk, specialist or Problem Manager will add as much information concerning the issue/problem as they have.

E.3 Does the specialist management process trigger the escalation? These problems have different flow in escalation because of the possible impact on the business. In consultation with the Service Desk, an Escalation Manager is appointed. The escalation process is triggered other than by an issue with priority critical. The Service Desk will be informed that there is a probable breach of the service level.

E.4 The Escalation Manager will form a dedicated team to cope with the problem.

E.5 When priority is critical immediate actions are necessary. The LQS management will be alerted (General Manager, Business process manager). LQS management will take contribution in the escalation process

E.6 The Escalation Manager is accountable and responsible for the process, thus should consult the database/Service Desk for available information. When additional information is needed from the customer, the Escalation Manager should contact the customer.

E.7 In consultation with LQS' management, the Escalation Manager will form a dedicated team to solve the problem/issue.

E.8 The dedicated team should come up with a solution within the boundaries of the SLA and possibly additional information should be collected at the customer or knowledge databases.

E.9 The LQS management closely monitors the progress in case within a reasonable timeframe there is no solution then escalation to the 3rd level is reconsidered. If necessary a decision will be taken to escalate to the 3rd level support (external consultancy or the supplier) or to deploy more 2nd level resources.

E.10 The customer must be notified via e-mail with updated resolution time and is asked for approval.

E.11 In case of low or medium priority but high complexity, the dedicated team should come up with a solution within the boundaries of the SLA and possibly additional information should be collected at the customer or knowledge databases.

E.12 If necessary the decision will be taken to escalate to the 3rd level (external consultancy or the supplier).

E.13 The Escalation Manager registers the solution information regarding the resolution of the issue in the Service Desk tool and sets the status to “closed”. The Service Desk employee will monitor the resolution according to the SLA.

E.14 In case of a formation of a dedicated team or consultancy of third parties, the Escalation Managers is responsible and accountable for resolution, reporting and communication towards the customer and the Service Desk tool.

E.15 The Escalation Manager enters the information in the Service Desk tool.

E.16 Trend analysis is applied by the Service Desk employee to see if SLA’s are met. Evaluation of trends will determine readjustments of procedures or readjustments of the SLA’s.

Essentials:

- Customer Support ensures LQS’ customers the best possible support given the agreed upon SLA’s by taking every question or issue serious.
- Users contact LQS’ Customer Support desk first in handling incidents. LQS Customer Service will escalate within the organization.
- LQS employees inform the LQS Service Desk about the progress and the solution of the incident and about the expected time-to-solution.
- At all stages a customer is informed about the status of his/her incident and the expected time-to-solution.

An incident can only be closed if the issue is resolved and the customer has confirmed this.

- The Service Desk employee gives the customer from the first moment the feeling that he is taken serious and response time is given.
- The Service Desk makes sure that all relevant information about the issue/problem is entered in the Service Desk tool or database.
- Make sure that the issue is closed and response is verified with the customer.

Do’s

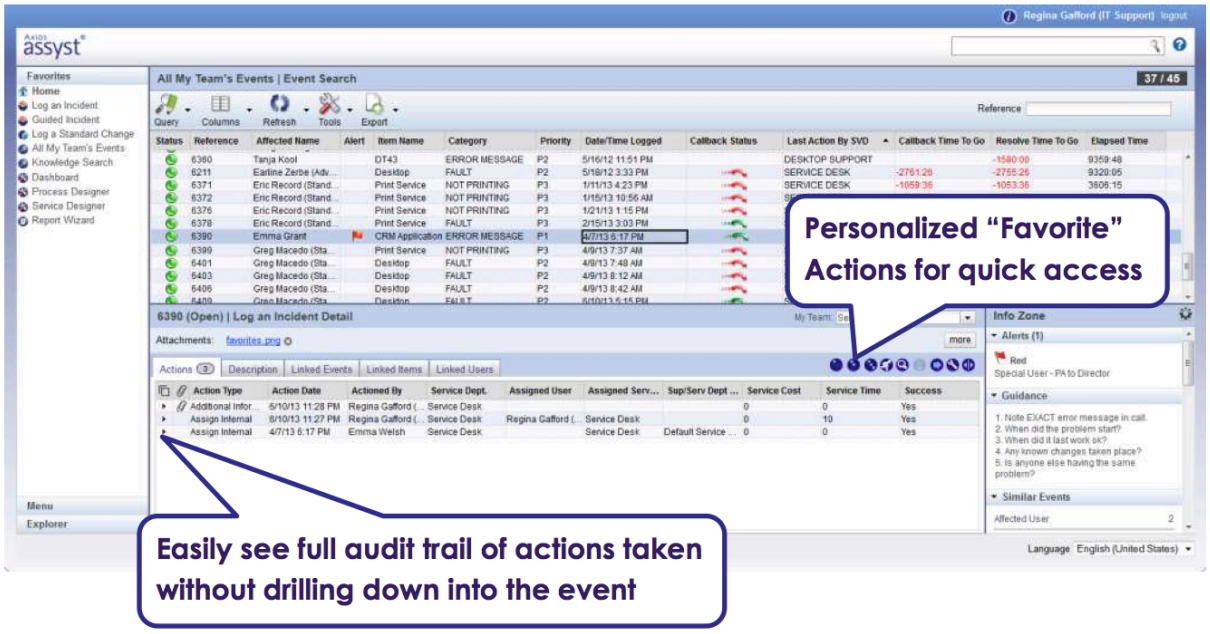
- Make sure that Service Desk employees are aware of the database, processes, KPI’s, SLA’s, instructions and procedures, and are frequently updated.
- Take all issues serious
- Keep the customer informed about the progress.
- Ask for additional information when things are not clear.
- Search for confirmation at a customer to make sure everything is clear.
- Communicate expected throughput times to the customer.
- Do not hesitate to ask for help from colleagues.
- Escalate when you do not think you can properly deal with the issue.

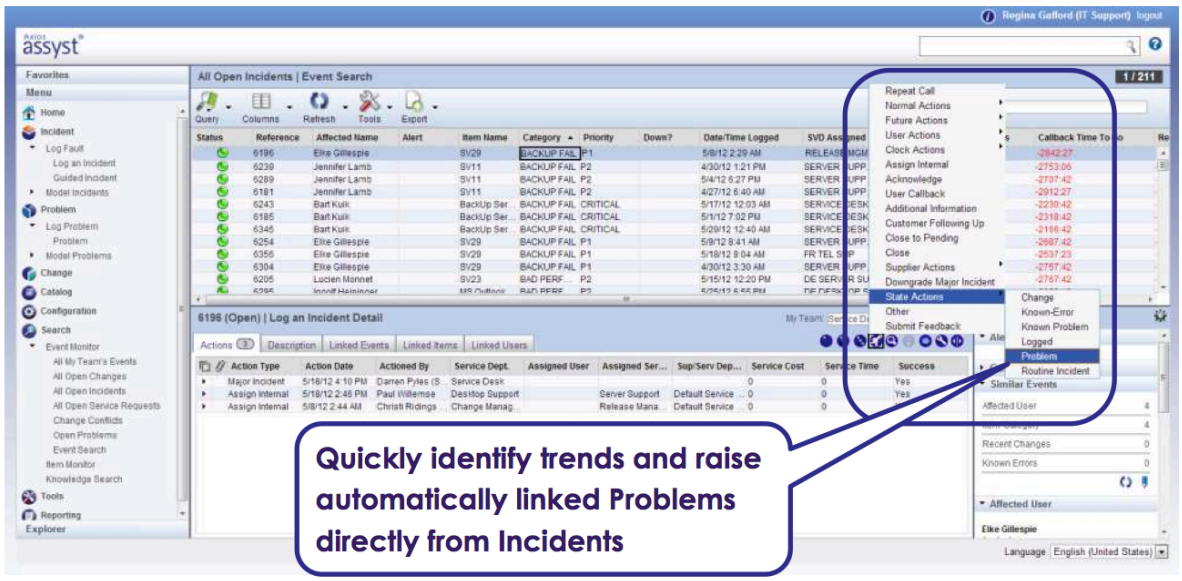
- Use clear and understandable language to the customers and internally. Formulate clear and concrete in the language that is appropriate.
- Stay with the facts
- Focus on that you can offer the customer and not on what you cannot.
- Help/assist others in the process.
- Try to make the issue/problem as clear as possible by asking open questions.
- Make sure all important information is documented.
- With insufficient information, first retrieve information at the customer and afterwards other places.
- Do not make false promises.
- Be as complete as possible.
- Motivate the answer (justified/unjustified)
- Make sure the question is answered.

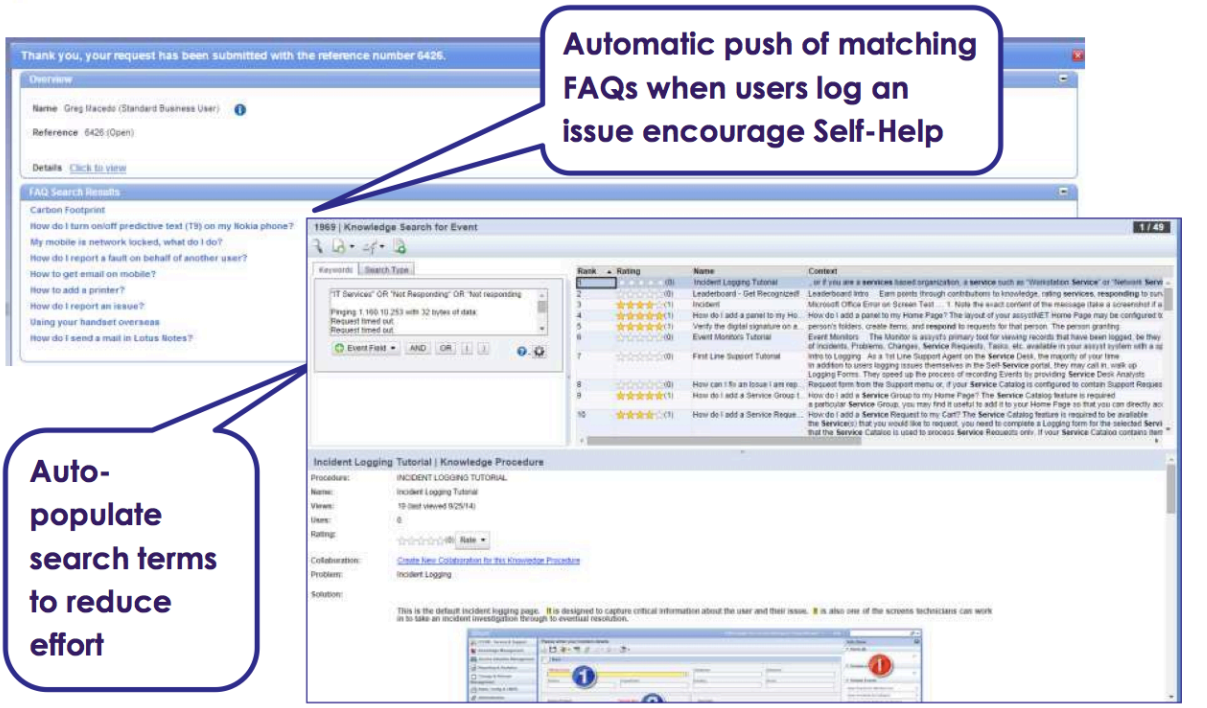
Don'ts

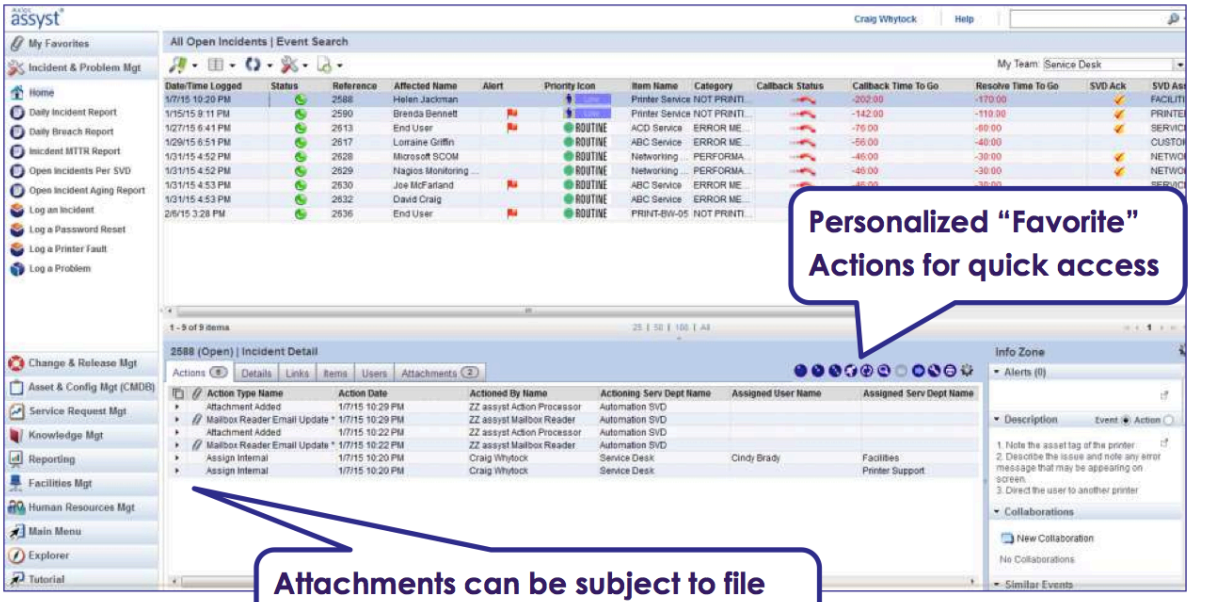
- Sent too many e-mails back and forth.
- Not take ownership or know how the process goes further.
- Blame the customer.
- Worry the customer unnecessary.
- Not take the customer serious, play down.
- Provide too little information to the customer/in the Service Desk tool.
- Not close the issue/problem.

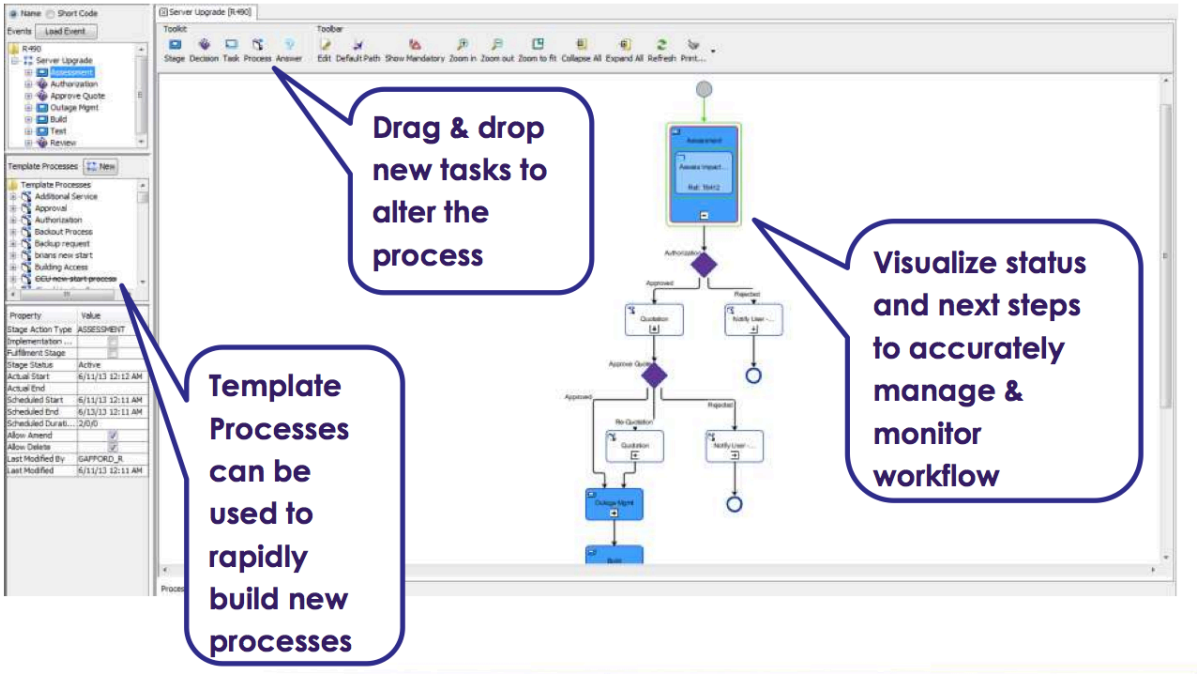
APPENDIX XV – Screenshots of the Assyst tool

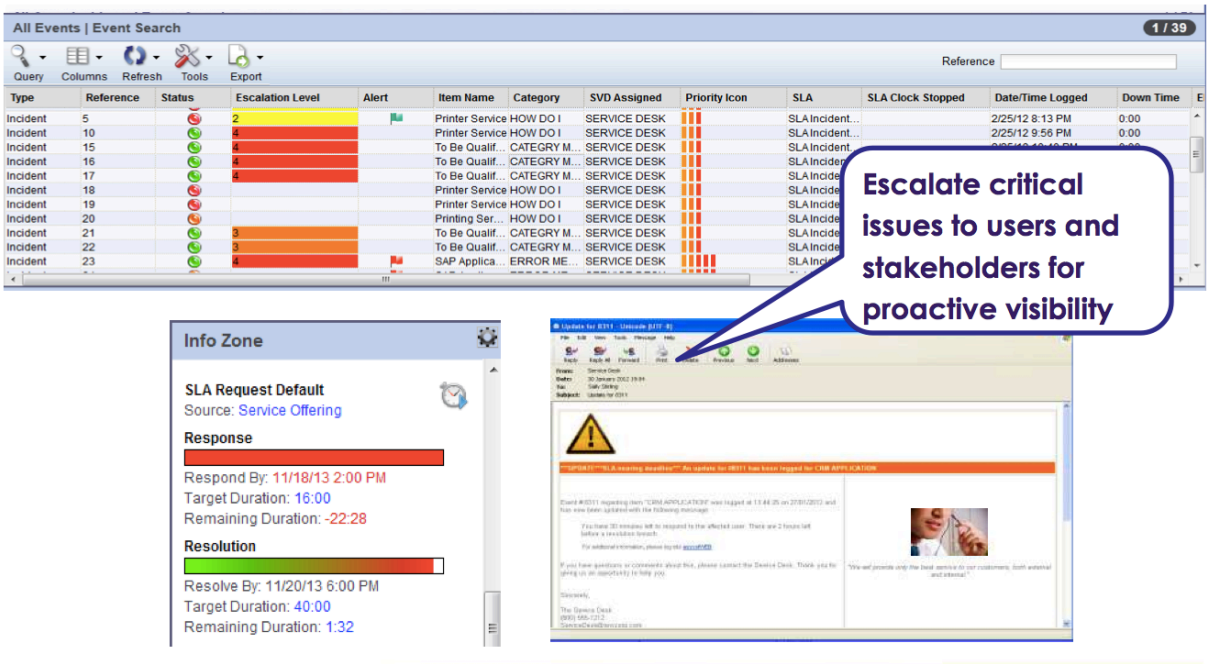




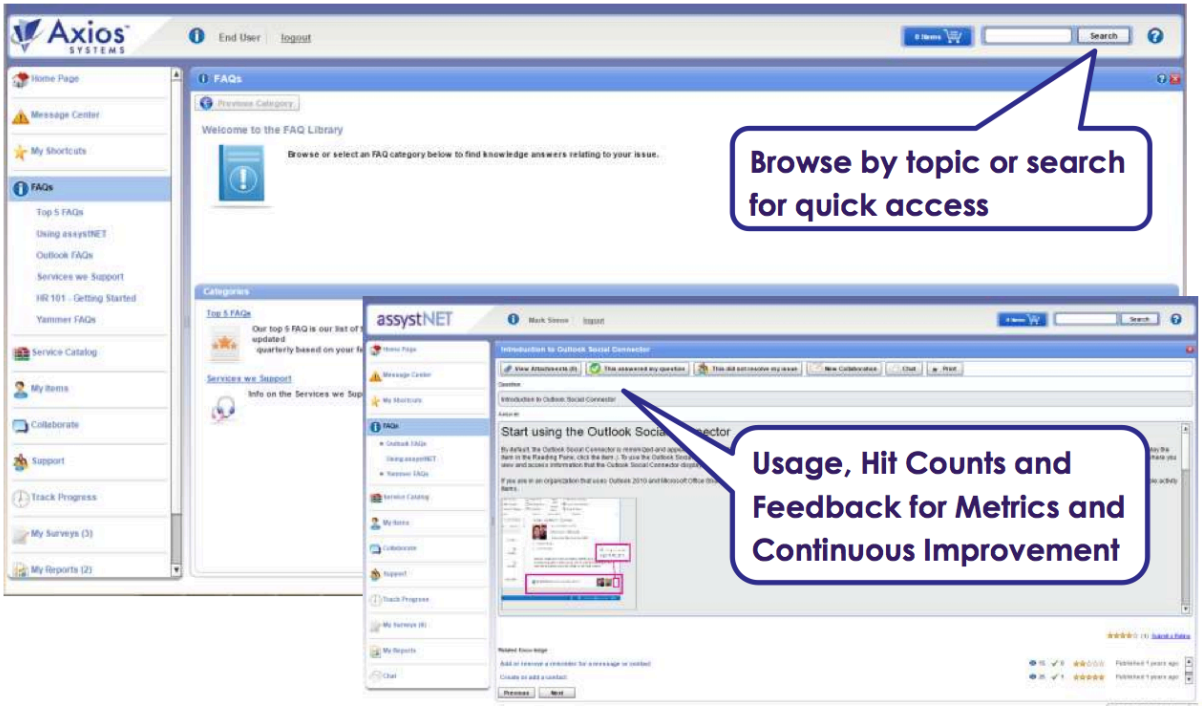

Automatic push of matching FAQs when users log an issue encourage Self-Help
Auto-populate search terms to reduce effort
Thank you, your request has been submitted with the reference number 6426.
Overview
Name Greg Macedo (Standard Business User)
Reference 6426 (Open)
Details Click to view
FAQ Search Results
Carbon Footprint
How do I turn on/off predictive text (T9) on my Nokia phone?
My mobile is network locked, what do I do?
How do I report a fault on behalf of another user?
How to get email on mobile?
How to add a printer?
How do I report an issue?
Using your handset overseas
How do I send a mail in Lotus Notes?
1969 | Knowledge Search for Event
1 / 49
Incident Logging Tutorial | Knowledge Procedure

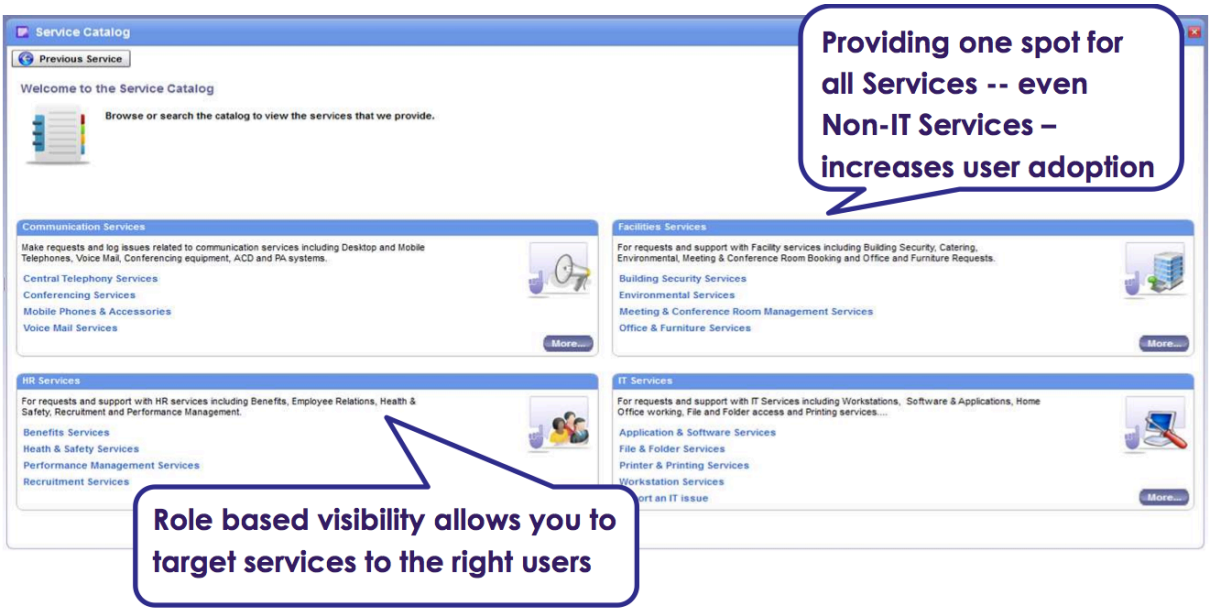

Personalized "Favorite" Actions for quick access
Attachments can be subject to file verification rules to enforce security
assyst
My Favorites
Incident & Problem Mgt
Home
Daily Incident Report
Daily Breach Report
Incident MTTR Report
Open Incidents Per SVD
Open Incident Aging Report
Log an Incident
Log a Password Reset
Log a Printer Fault
Log a Problem
Change & Release Mgt
Asset & Config Mgt (CMDB)
Service Request Mgt
Knowledge Mgt
Reporting
Facilities Mgt
Human Resources Mgt
Main Menu
Explorer
Tutorial
All Open Incidents | Event Search
2588 (Open) | Incident Detail
Info Zone

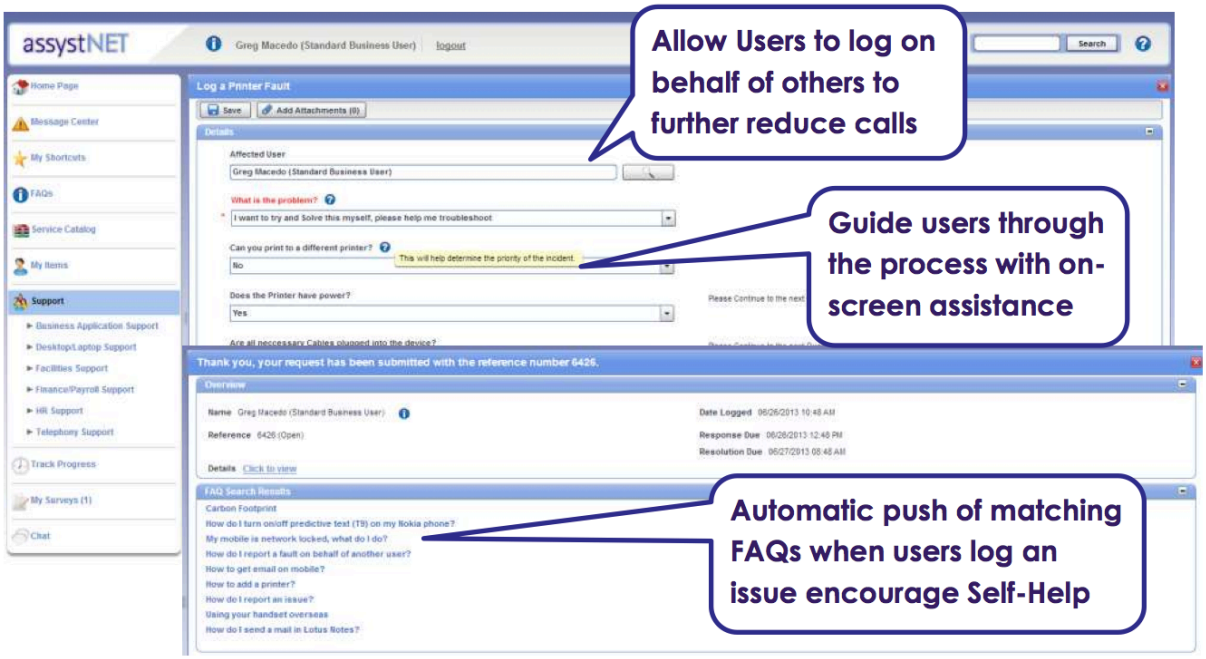

Drag & drop new tasks to alter the process
Visualize status and next steps to accurately manage & monitor workflow
Template Processes can be used to rapidly build new processes

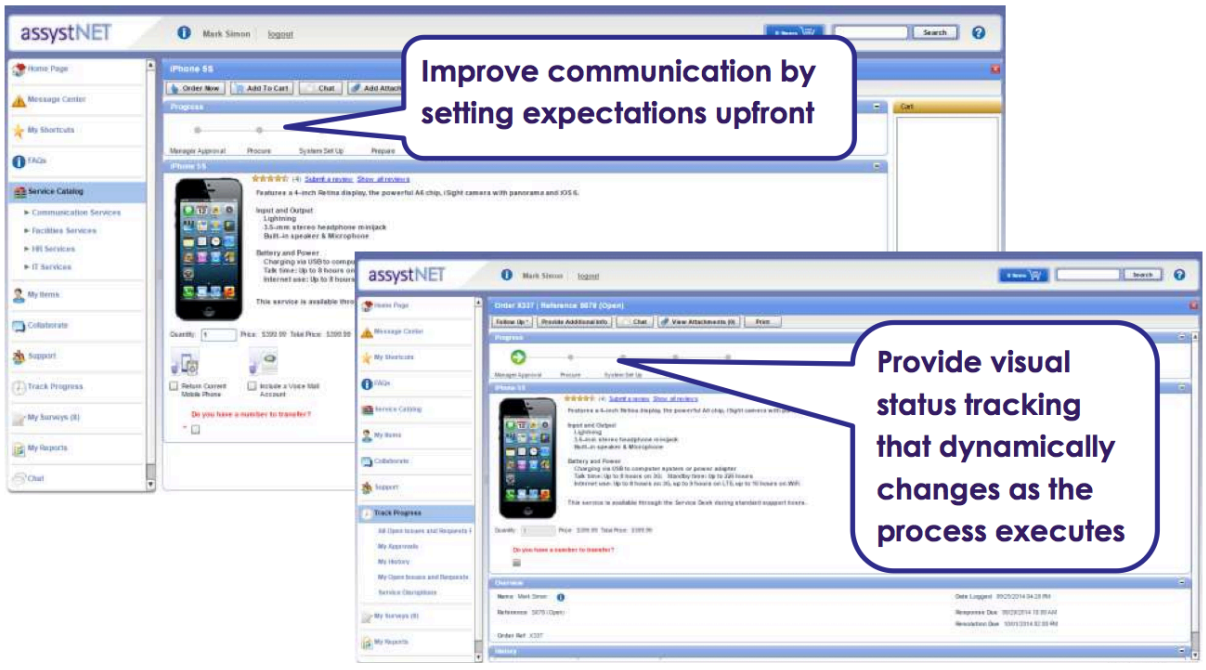

All Events | Event Search
1 / 39
Query
Columns
Refresh
Tools
Export
Reference
Type
Reference
Status
Escalation Level
Alert
Item Name
Category
SVD Assigned
Priority Icon
SLA
SLA Clock Stopped
Date/Time Logged
Down Time
Escalate critical issues to users and stakeholders for proactive visibility
Info Zone
SLA Request Default
Source: Service Offering
Response
Respond By: 11/18/13 2:00 PM
Target Duration: 16:00
Remaining Duration: -22:28
Resolution
Resolve By: 11/20/13 6:00 PM
Target Duration: 40:00
Remaining Duration: 1:32

End user portal






assystNET
Allow Users to log on behalf of others to further reduce calls
Guide users through the process with on-screen assistance
Automatic push of matching FAQs when users log an issue encourage Self-Help


assystNET
Improve communication by setting expectations upfront
Provide visual status tracking that dynamically changes as the process executes