IMPROVING THE INTERNAL AND EXTERNAL COMMUNICATION FOR THALES' CUSTOMER CONTACT CENTRE

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THALES

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Abstract

A good communication strategy is important for businesses. Thales uses their Customer Portal for communicating with their customers and handling technical requests and problems. This relatively new tool is not yet fully exploited. The communication quality is not yet at a sufficient level which reflects in the service quality.

This study used a mixed-method strategy which consisted of three parts. First, a questionnaire was used to measure the level of different communication quality parameters found in literature. Subsequently, follow-up interviews were used to gain a deeper understanding of the causes of the low rated parameters and to come up with directions for solutions. Lastly, a workshop was conducted with the staff to come up with concrete solutions and prioritize them.

The questionnaire revealed that there is room for improvement on all three dimensions of communication quality (Time, Style and Content). The main problem is a lack of standardization in Thales' communication strategy. Good protocols are absent, insufficient or the staff is not aware of their existence.

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Introduction

Creating a cooperative and strong relationship with customers is vital for companies these days to gain and hold a strong competitive position (Bohling et al. 2006). Parvatiyar & Sheth (2001) established a framework of customer relationship management (CRM). They refer to several scholars who tried to define customer relationship management as a concept. Vavra (1992) defined it as: *''customer retention in which a variety of after-marketing tactics is used for customer bonding or staying in touch after the sale is made.*

Furthermore, Payne & Frow (2005) refer to Gummesson (2002) who states that *''interaction and communication play a crucial role''.* Throughout all definitions, communication and interaction seem to be a common denominator. Themes such as ''staying in touch'' and ''bonding'' but also ''interactive contact'' and ''retaining'' keep coming back across all definitions. However, most of these researches are focused on a business-to-consumer (b2c) context. Working in a business-to-business (b2b) and a business-to-government (b2g) context could create different problems regarding customer relationship management and communication. According to Rėklaitis & Pilelienė (2019), the b2c market is more based on emotional aspects, while the b2b market is more professional. When communicating with customers, this difference needs to be taken into account.

Parvatiyar & Sheth (2001) argue that in a b2b context, communication helps foster bonds with the customer. These bonds are created through interactions. They argue that training employees to interact with customers, work in teams and manage relationship expectations is important. They stress the importance of good training and motivation of employees to professionally handle customer relations.

Besides this 'external' communication with the customers, companies engage in 'internal' communication. Different stakeholders within a company need to communicate all sorts of information to each other, for example, information about customers and projects. Ensuring this internal communication process is of good quality and consistency is vital to the quality of external communication. Verčič, Verčič & Sriramesh (2012) refer to several scholars (Hargie & Tourish, 1993; Dickinson, Rainey, & Hargie, 2003; Quinn & Hargie, 2004; Robson & Tourish, 2005; Clampitt and Downs, 1993) who argue that good internal communication has a positive relationship with organizational effectiveness and it creates improved productivity, reduced absenteeism, higher quality of services and products, increased levels of innovation, fewer strikes and reduced costs.

Thales

One of such companies that operates mainly in a b2b and b2g context is Thales Naval Netherlands based in Hengelo. Thales Hengelo is a part of the Thales group, which is a global technology leader

that focuses on technical innovations; Big Data, artificial intelligence, connectivity, cybersecurity and quantum technology. They offer these innovations to different sectors such as (aero)space, defence and security, digital identity and security and ground transportation.[1] Thales Hengelo is the Dutch part of the Thales group and provides products and innovations in the field of cybersecurity, defence and transportation. The branch in Hengelo is focused on the defence sector. They provide customers all over the world (ministries of defences) with sophisticated systems such as combat management systems and radar technologies.[2]
The two most important structures within the organization of Thales are Product Teams and Customer Account Teams. A Product Team (PT) is responsible for managing the full product lifecycle. This includes definition, management, development, delivery and maintenance.[3] A Customer Account Team (CAT) ensures customer focus and creates 'one voice' to the customer by aligning different disciplines with direct contact with the customer. CAT's are organized by geographical region; Asia, Europe, the Middle East & Africa, the Netherlands and America.[4] These two teams work closely together to ensure the customer experiences the best service possible.

An important department of Thales is the Customer Contact Center (CCC). This department performs all front office services. It can be divided into two main parts: Sales Support and CCC Engineers. The Sales Support handles the commercial part of the front office services. So, they take care of spare parts, general questions, repairs and returns. On the other hand, the CCC Engineers take care of the technical part, handle technical incidents and assistance and answer general questions as well. Together, they are the first line of support for customers who experience problems or have certain needs.
An important aspect of the structure of the service desk is the distinction between employees on a strategic, tactical and operational level. Employees of the operational department perform the daily operational tasks like handling requests and technical assistance. The managers of the Sales Support and CCC Engineers are working on a tactical level. Finally, the employees of the strategic department are not working for one of the two parts specifically but are more focused on the process as a whole.
The CCC uses an online tool called the ''Customer Portal'' in which customers place their requests. They can describe the problem they are experiencing, make specific requests and indicate the urgency. Employees of the CCC process the request in the portal and assist the customer in solving the problem. The portal consists of two 'sides'; the 'customer side' (frond-end) and the 'CCC side' (back-end). The customer side consists of all data the customer provides

[1] https://www.thalesgroup.com/en/global/group
[2] https://www.thalesgroup.com/en/countries/europe/netherlands/defence-netherlands
[3] https://intranet.peopleonline.corp.thales/sites/international/europe/netherlands/thales-nl/naval-nl/product-team-pt
[4] https://intranet.peopleonline.corp.thales/sites/international/europe/netherlands/thales-nl/naval-nl/customer-account-team-cat

and interactions with employees, so all information the customer needs. The CCC side, on the other hand, consists of all information the CCC need. Think about the history of the customer such as prior requests, problems and technical details about the requests which are needed by different departments within Thales but not by the customer.

Problem statement

Prior research done by Van der Haak (2021) identified problems with the service quality of the front office services offered by the CCC. Several interviews were conducted with different stakeholders about service quality. One of the most important problems that arose from the research of Van der Haak (2021) is a poor communication strategy. The Customer Portal which Thales uses to handle requests from customers and communicate is relatively new. Therefore, it is not yet fully exploited. Several problems regarding communication, both internal and external, arise.

An employee from the strategic department summarizes it as follows: *''We have the right tool (to communicate), but do not implement it the right way.''* The main problem is that there are unexploited opportunities to enhance the overall service quality towards the customers by improving the communication quality. The communication lacks in quality and not all stakeholders are integrated into the portal. This research will focus on improving communication within the customer portal. Employees from different departments were interviewed to gain a better view of the problem. They gave their opinion on what the problems are with the customer portal.

Internal

A strategic department employee states that when using the portal, the delivery of service is dependent on the people, and not on the process. He argues that when the employee who handles the customer request cannot work for any reason, the request is simply delayed. Every employee handles a request differently, some are very detailed while others just fill in keywords. As the CCC Engineers manager describes it: *''most employees write it down as if they do it for themselves, but they should write it down in a way others can understand it.''* This makes the communication between stakeholders within the company hard and not transparent. This is confirmed by a service design employee, he explains how he designed a form in which CCC employees should fill in details of requests from customers. However, this form is not filled in properly or with minimal information in many cases.

Employees in the supply chain need technical information as well. They are also dependent on information from suppliers which is not integrated into the portal. This is a problem because it reflects the level of communication with the customers. Customers want regular status updates and information about stock levels as well. If this is internally not fixed and communicated the

right way, customers become less satisfied. The problem, in this case, is therefore customer satisfaction, which suffers from poor internal communication.

Furthermore, there is an integration problem. A sales support employee argues that the lack of integration of several stakeholders creates an insufficient level of communication within the CCC. Some departments within Thales are not integrated into the customer portal. Communication with these other departments is done through email, which results in a lack of information within the customer portal because only the employee doing the mail corresponding can see this information. The same applies to customers, some are not integrated within the portal and therefore, communication through email is necessary. Apart from different stakeholders, certain information needed is not integrated as well. Think about information about supplies and stock.

Another problem that arises is the diversity of the customers. All customers have different requirements. Here standardization would be useful. An employee from the operational department misses the possibility to see and analyze previous requests and questions of a certain kind and build further on that. So, the communication and available information can be described as a bit messy and inefficient. A higher level of standardization and consistency is needed.

External

-Soft skills

There are some communication-related problems when interacting with customers as well. First, van der Haak (2021) discovered that some customers experienced the communication of the CCC as a bit blunt. This is confirmed by an employee from the strategic department who has doubts about the level of soft skills within the Service Desk service. Communication and empathy are factors to which are not paid enough attention. He stresses the lack of focus on soft skills at Thales. The focus is more on selling products than on service delivery.

-Frequency

The frequency in which the CCC communicates with the customers is rather arbitrary. An employee from the operational department states that there is no protocol for the frequency of contact points with the customer. According to him, it is more a gut call. When you need to reach out to the customer you do it. An employee from tactical also recognizes this problem, he argues that customers should have a better view of what the CCC is doing and at what stage they are. An employee from strategic stresses the importance of giving more feedback and advice. This problem arises from internal problems. As mentioned earlier, lack of information and delayed requests because of unavailable staff, can be causes for this arbitrary frequency.

-Transparency

The problems regarding transparency are partly comparable with the internal communication problems. All customers have different ways of describing their problems and requests. An employee from the operational department explains that the 'problem description' field is an empty box in which the customer can fill in what they want and as detailed as they want. He describes that it can be frustrating to go after the customers ten times to get more information. Apart from the level of detail, the description can be too technical. Customers sometimes use language technical experts understand, but employees from the CCC do not.

Another problem regarding transparency is the lack of information the customer gets. An interviewed customer would like to see a more elaborate dashboard or information about stock. Employees also indicated they would like to see updates on stock status.

To summarize, a lack of service quality is caused by an unsatisfying quality of communication. The consequence of this is negative feedback from customers regarding communication. The communication among the employees and different departments can be described as messy and not structured. The priority is to enhance internal communication because good internal communication will reflect the quality of communication towards customers. Furthermore, solutions offered for improving internal communication will apply to external and communication problems as well. For example, there are both transparency and integration problems internal and external. A higher level of internal communication will result in higher levels of communication towards the customer.

Research objective and questions

The objective of this research is to gain in-depth insight into the shortcomings of communication both internal and external. The second objective is to improve the internal and external communication of Thales within the customer portal by optimizing its communication flow towards customers and improving the quality of the internal communication. Based on this objective, the following research question can be formulated:

''How can the CCC improve its internal and external communication within the customer portal?''

To answer this research question, the following sub-questions are formulated:

1. *What are the benefits of good communication quality?*
2. *What underlying parameters define communication quality?*
3. *In what broader dimensions can those parameters be classified?*
4. *In what dimensions does the CCC need improvement?*
5. *In what way can the CCC improve the quality of its internal communication and data?*
6. *How can the CCC optimize its communication flow toward customers?*

Methodology

To answer the research questions, several methods will be used to gather the data needed; a literature review, a questionnaire and interviews.

The first three research sub-questions were:

- *What are the benefits of good communication quality?*
- *What are the dimensions of communication quality?*
- *What underlying parameters define these dimensions?*

To answer those questions, a literature review will be conducted. Literature about communication, both internal and external will be analysed and the benefits of good communication quality will be discussed. Furthermore, a good analysis of the concept of communication quality will be conducted. What parameters define good communication quality and how can those be grouped? To gather the papers which will be used in this literature review there will be searched for papers in different databases; primarily Scopus and Google Scholar. Keywords such as 'internal/external communication', 'organizational communication' and 'corporate communication' will be used. A group of approximately ten key papers was found to which many other scholars consequently refer. These papers form the basis of literature on this topic. Many other papers are used in this literature review, but they keep referring back to these ten key papers.

The fourth research sub-question was:

- *In what dimensions does the CCC need improvement?*

To gain insights into what dimensions the CCC needs improvement, a questionnaire will be used. The questionnaire will measure the perception of the communication quality by measuring the level of several parameters which are part of the dimensions. To explore how the CCC can improve the communication quality on the dimensions it needs improvement, the last two research questions were formulated:

- *In what way can the CCC improve the quality of its internal communication and data?*
- *How can the CCC optimize its communication flow toward customers?*

Interviews will be used to gain deeper insights into the problem and possible solutions to improve the communication quality. They will be conducted with several respondents within Thales and outside of the company who can provide valuable data and ideas on how to achieve this goal. Finally, a workshop will be held with staff from both strategic, tactical and operational level as well as from Sales Support and CCC Engineers.

Relevance

This research will add value to the existing literature because of several reasons. As said in the introduction, most research focussed on a b2c context when talking about customer relationship management. This research will focus on Thales Hengelo, which operates in a b2b and a b2g context. Furthermore, as will be discussed in the theoretical framework as well, there hasn't been a lot of focus on internal communication. Hargie & Tourish (1993) emphasize the lack of hard empirical research into the communication within organizations. However an important topic, there is not paid enough attention and resources towards it (Kalla, 2005) and there needs to be more research done on this subject (Versic et al. 2012).

On the practical side, Thales will benefit from improved communication both with the customer and internal. This research will provide Thales with recommendations on how to improve its communication strategies. There are a lot of benefits according to the literature of improved communication internal and external, as will be discussed in the theoretical framework. For example, it will increase employee satisfaction, productivity and ultimately, lead to more profits.

Scope

Communication plays an important role within the whole company. However, this research will focus on the communication within the customer portal as used by the Customer Contact Center (CCC). The CCC consists of two main parts; the Sales support and the CCC Engineers. The sales support is the more commercial part of the CCC. They handle Spares, general questions, repairs and returns. The CCC Engineers, on the other hand, take care of the more technical aspects. They handle incidents and provide technical assistance. Both perform first and second level of support to the customers. Level 1 support can be seen as the most basic level of support offered by Thales. There is not a high level of technical knowledge needed to provide this level of support. Tasks of this level are[5]:

- Logs, prioritizes, tacks, routes and categorizes service requests and incidents submitted by customers.
- Attends user phone calls

[5] Thales, service support levels: definition document

- Replies to emails
- Communicates via the Customer Portal about status updates
- Solves logging incidents faced by the user
- Performs basic troubleshooting (FAQ)

The second level of support provides more in-depth technical assistance. They take care of requests which can't be solved by level 1 support. The level of technical knowledge needed is much higher than needed for level 1 support. Their tasks include:

- Comprehensive technical, product or service support
- Follows incident management activities

This research is limited to these two levels of support because these are the two levels the CCC provides. There exists a level 3 and even a level 4, however, they are provided by the suppliers and therefore out of scope. Furthermore, this research will focus on communication at the operational and tactical levels. At these levels, most problems are experienced and therefore, these have the highest priority. A visual overview of the structure of the CCC is viewed below in figure 1.

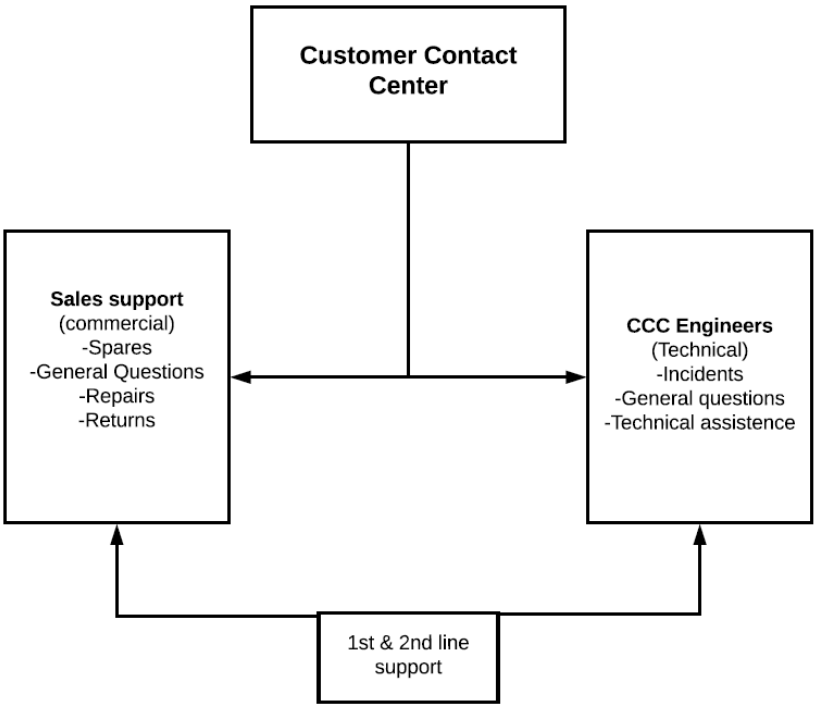

Figure 1: A visual overview of the Customer Contact Center

Customer portal

To communicate with each other and with the customers, employees of the CCC use the Customer Portal. All requests from customers are registered in this portal. Even requests entered via e-mail, are manually processed within the portal. The process through which all requests go can be seen in the flowchart below (Figure 2). As can be seen, there is a lot of communication with the customer at various points within the process. Furthermore, at the back-end of the portal, the side of the portal which is only visible to employees, a lot of communication is going on as well. This research will focus on those two communication flows.

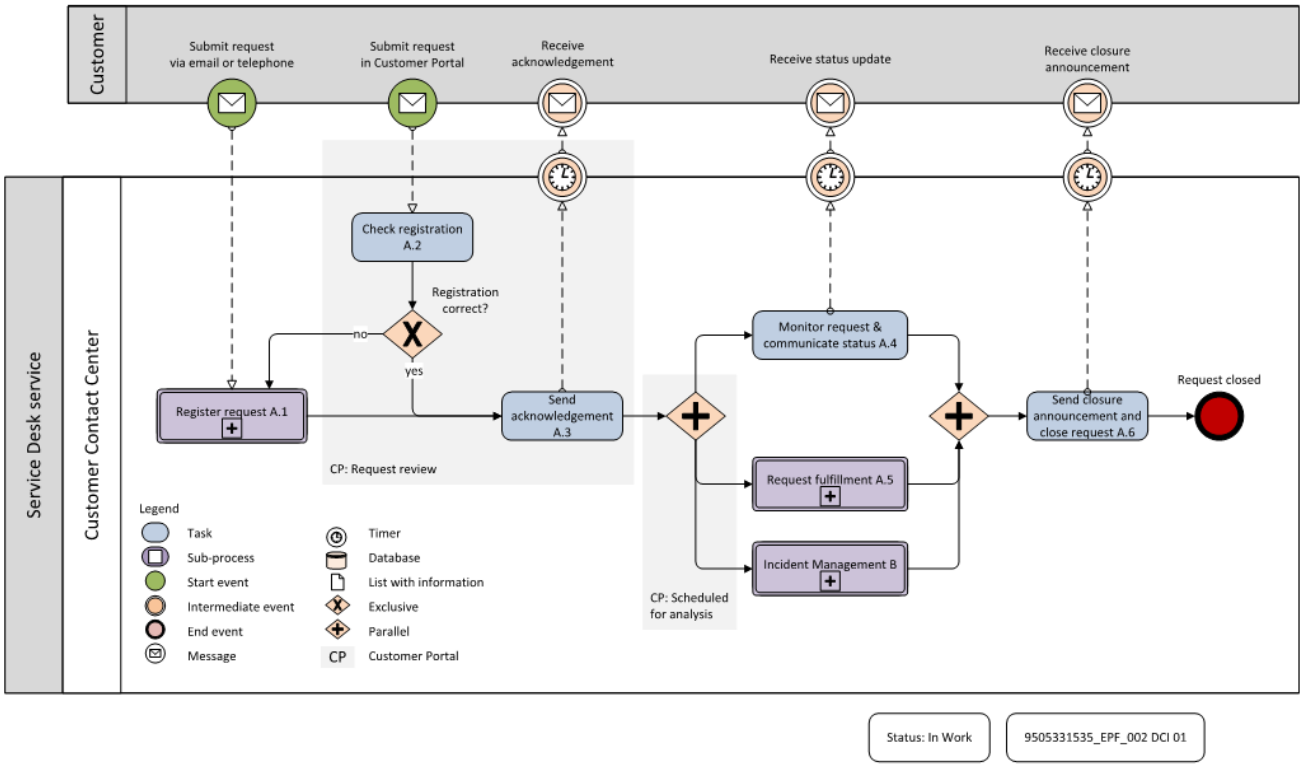

Figure 2: an overview of the service delivery process of the Customer Contact Center. (Source: internal Thales document)

Theoretical framework

What is communication?

Communication is a very broad concept. The word comes from the Latin word 'communicare', which means 'to share' or 'to be in relationship with' (Cobley, 2008). Littlejohn & Foss (2010) presented several definitions of communication which are used throughout literature. For example: *''communication is the process that links discontinuous parts of the living world to one another.''* This is a very general description of communication, he argues. A more restrictive definition is as follows: *''communication is a system for communicating information and orders.''* This definition is more restricted to situations where a strict hierarchy is in order, such as the army. A more specific definition describes communication as: *''those situations in which a source transmits a message to a receiver with conscious intent to affect the latter's behaviours.''* This definition includes the intention of communication according to Littlejohn & Foss (2010). The last definition he came up with is as follows: *''Communication is the (verbal) interchange of a thought or idea.''* The most complete definition comes from Oliver (1997): *''an interchange of ideas, facts and emotions, by two or more persons, with the use of words, letters and symbols based on the technical problem of how accurately the symbols can be transmitted, the semantic problem of how, precisely, the symbols convey the desired meaning, and the effectiveness of how the received meaning affects conduct in the desired way''.* As can be seen, there is not one universal definition of communication. In fact, there are a lot more than there are here described. However, all definitions do have some things in common. In all definitions, something is transferred from a sender to a receiver. It can be data, information or just thoughts and ideas. Last years, communication has become more important than ever because of advances in technologies. The digital era has changed the nature of communication. it has become faster and more data can be transferred in way less time. This brings new problems and challenges for people focused on improving communication.

Communication in a business context

This is all about communication in a very broad context. However, communication plays a very important role in a business context as well. An important concept in business is market orientation. This concept is about creating value for customers with the help of commitment from the employees. Desphandé and Farley (1998) gave the following definition of market orientation: *"Market orientation is the set of cross-functional processes and activities directed at creating and satisfying customers through continuous needs-assessment."* Kohli & Jaworski (1990) calls market orientation: *"the organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it."* This definition talks about customer needs and responsiveness to that, an important point in a customer contact centre context. Kohli & Jaworski (1990) named coordination as one of the core pillars of good market orientation. They

argue that market orientation is not just the responsibility of the marketing department, but that a variety of departments should be aware of the customer needs and be responsive to them. This includes of course the Customer Contact Center. Part of good coordination is good communication between these different departments and functions, as argued by Golicic & Vitasek (2007). According to them, optimizing this reduces redundancies and improves efficiency which makes the company more competitive. The most important elements of good inter-functional coordination are open communication and collaboration. To sum up, good communication between different employees of different functions and departments leads to inter-functional coordination. This is in turn one of the pillars of market orientation, which is about creating value for the customer.

Internal communication

As said, there is no universal definition for communication. It plays an important role in many different sectors. This research focuses on a business context and therefore, communication within businesses plays an important role in this research. Even within communication in a business context, a distinction can be made between internal and external communication. There are several terms which are used to describe this internal communication. Hargie & Tourish (1993) and Versic et al. (2012) call it organizational communication. Kalla (2005) refers to it as internal communication as well as corporate communication. Versic et al. (2012) also refer to it as internal communication. To stay consistent within this research, from now on there will be referred to it as internal communication because it means the same. Kalla (2005) refers to several scholars who tried to define internal communication. Bovée & Thill (2000) define internal communication as: *''the exchange of information and ideas within an organization.''* Argenti (2003) takes the underlying goal into account with its definition; *''internal communication is, in essence, about creating an atmosphere of respect for all employees within the organization''.* Kalla (2005) came up with the following definition himself for his research: *''internal communication is all formal communication taking place internally at all levels of an organization.''*

External communication

According to Dirsmith & Covaleski (1983), organizations must interact with their environment to survive. They define the environment as those external factors which impact the functioning of the organization as well as on which the organization has an impact. One of these external factors which are the most important are of course the customers of the organization. Roberts-Lombard (2011) defines communication between the company and their customers as *''the ability to provide timeously and trustworthy information.''* Furthermore, he describes it as: *''an interactive dialogue between the company and its customers which takes place during the pre-selling, selling, consuming and post-consuming stages.''* External communication can be practised in many

different ways. For example, service desks or call centres, but also email or phone calls (Payne & Frow, 2005). Karakostas et al. (2005) argue that with good use of these kinds of communication technologies, organizations can offer their customer a variety of products, lower prices and personalized service. Bakir (2016) argues that inquiries from customers can be divided into three categories. Low controversial, moderate controversial and high controversial inquiries. In low controversial inquiries, there is no uncertainty on how to deal with the problem because they occur commonly. To solve the problems, routinized practices have to be performed. Moderate controversial inquiries, on the other hand, are complex but still common problems. In this case, a low level of uncertainty is present, but the staff has a general idea on how to solve the problem. New actors are called in to bring more knowledge which helps solve the problem. Lastly, high controversial inquiries are the most complex problems. There is a lot of uncertainty and very loose outlines for solutions. In this case, more actors are needed to provide the needed knowledge for solving the problem.

Why is communication important?

The definitions of internal and external communication have been explained. However, why is it important to give it attention? According to many scholars, internal communication plays an important role within organizations. Kalla (2005) argues that companies with effective communications strategies are usually successful, while others tend to fall short of optimal performance. Effectively sharing information is fundamental for maintaining a competitive advantage. Poor internal communication results in workplace inefficiency according to Welch & Jackson (2007). The openness of internal communication plays an important role in people's day-to-day work. Furthermore, Kalla (2005) states that more sharing of information increases employees' feeling of security. Creating an open and secure atmosphere contributes to a more secure working atmosphere. Parker, Axtell & Turner (2001) confirm that a higher level of communication quality leads to a safer workplace. Hargie & Tourish (1993) refer to several scholars, who argue that a good communication strategy is vital in improving the quality of working relationships, which leads to greater organizational cohesion and enhanced effectiveness. Good working relationships are an important determinant of job satisfaction as well. This leads to reduced levels of absenteeism and increased productivity (Argyle, 2001; Schweiger & Denisi, 1991; Semler, 1989). Clampitt & Downs (1993) argue that improving internal communication leads to improved productivity, reduced absenteeism, higher quality of services and products, increased levels of innovation, fewer strikes and reduced costs. Quirke (2002) argues that the people of a company produce value. Internal communication is the core process by which businesses can create this value. Hargie & Tourish (1993) summarizes a company which is not communicating well as *''an orchestra which constantly tune-up, but never play a symphony.''* To summarize, good internal communication leads to more efficiency and effectiveness, happier employees and more productivity.

Communication with the customer, on the other hand, is also of great importance for organizations. As said earlier, the survival of companies depends on good interaction with their external environment such as customers (Dirsmith & Covaleski, 1983). Nienaber & Schewe (2011) argue that good communication creates trust between the company and the customer. Payne & Frow (2005) stresses the importance of creating relationships with customers. By doing this, companies can improve shareholder value and create profitable relationships. Karakostas et al. (2005) state that the acquisition of new customers is five times more expensive than generating repeat business from existing customers. Holding good relationships with customers and therefore keeping them as a client will increase profits as a result. Communication is a vital factor in maintaining good relationships with customers. Staying in touch and interacting are often mentioned as important factors in communication (Vavra & Terry, 1992). Roberts-Lombard (2011) argue that communication with customers can help avoid or resolve conflicts before they become problems.

Lack of research

Apart from the beforementioned practical advantages of good internal communication, there are some benefits to literature as well. Several scholars address the lack of research on this specific topic. Hargie & Tourish (1993) state that there is little hard empirical research into the nature, flow and functions of communication within organizations. Furthermore, he argues that companies generally neglect the internal aspect of communication. Kalla (2005) points toward the discrepancy between the perceived importance of the field and the actual attention and resources given to it. Versic et al. (2012) argue that the scarcity of research on internal communication needs to be addressed. The scientific literature on internal communication has not kept pace with its growing importance of it.

Both these practical and theoretical benefits of communication determine why it is important. Practical examples of the advantages of good communication within businesses are explained on both an internal and external level. This section, therefore, answers the first research question: *What are the benefits of good communication quality?*

Parameters

The definition of communication, generally and both internal and external is explained. Also, the importance of good communication has been explained. However, a new question arises. What exactly is 'good' communication? How can this be defined? Part of this research is to improve the communication quality for Thales so it is important to analyze what 'good' communication means and how communication quality as a concept can be analyzed. Many scholars have touched upon this topic and each came up with their vision of communication quality and how it should be

defined. An analysis of these papers will be conducted to establish a thorough overview of the concept of communication quality.

Some of the scholars who made an extensive analysis of communication quality are Mohr & Sohi (1995). They came up with different ways of conceptualizing communication flows. First, they focused on the specific nature of the communication flow. When focusing on this nature, they examine aspects such as the frequency of interaction, the extent to which the communication flows are bidirectional and the level of formality of the communication flows. Another way of examining the quality of communication, one could take a more holistic approach. In this case, scholars (Guiltinan, Rejab & Rodgers, 1990; Bialaszewski & Giallourakis, 1985; Anderson & Narus, 1990) focused on factors such as helpfulness, adequacy and efficacy of communication.
Mohr & Sohi (1995) focus their research on the specific nature of communication flows and thus the factors frequency, bidirectionality and formality are used in their analysis. However, what do these factors mean? Frequency means *''the amount of contact between channel members, it reflects how often channel members have contact with each other''.* The definition of bidirectionality is as follows: *''the extent to which each party gives feedback and input to the other (two-way flows)''.* Lastly, formality is *''the extent to which communication flows are structured, planned and routinized''.* All these factors can be used to examine the nature of communication. It depends on the situation what the level of formality or the frequency of the communication should be but these parameters can help assess the quality of the communication. however, these factors do not 'measure' the communication quality; for example, it is not necessarily the case that a higher level of formality means better quality. As said, it depends on the situation. Mohr & Sohi (1995) used a scale developed by Stohl & Redding (1987) to just asses the quality of the communication. Stohl & Redding (1987) and O'Reilly (1982) argued that the assessment of communication quality is determined by the following parameters: completeness, credibility, accuracy, timeliness and adequacy. Mohr & Sohi (1995) argue that together, these parameters predict the satisfaction regarding communication of the stakeholders. If the stakeholders perceive the communication as qualitative, they become more satisfied.

Liu & Chua (2010) paid attention in their research to the quality of communication experience. They found that the quality of communication experience is a multidimensional construct that consists of three factors: clarity, responsiveness and comfort. Clarity is about the cognitive aspect of communication, Liu & Chua (2010) argue. Did the receiver of the communicated message comprehend the meaning of it? The 'meaning' encompasses factual information, as well as ideas, emotions and values. The second factor is responsiveness. This is about the behavioural aspect of communication. This factor includes the level of reciprocity that is experienced within

interactions. Lastly, comfort is about the affective aspect. It measures the level of ease and pleasantness while interacting with each other.

Dirsmith & Covaleski (1983) argued that the use of appropriate language plays an important role as well in good communication. what language can be considered appropriate, is determined by the nature of the environment. In stable environments, the focus should be more on what the organization has achieved. However, in more dynamic environments, the focus should be more on environmental adaption, he argues.

Nienaber & Schewe (2011) did their research on how communication can be perceived as trustful. They stress the importance of the factor trust because of the greatly increased role it has gained. Nowadays, the business environment has become more and more complex and uncertain which is the cause for this increasing role. To act adequately and make good decisions, trust is a key factor in close cooperation between organizations, employees and customers. Communication is, according to Nienaber & Schewe (2011), an instrument to strengthen and stabilize trust. But what way of communicating enhances trust? They identified ten important factors in their research which predict good communication. These are: competency, integrity, reliability, credibility, honesty, openness, actuality, completeness, relevance and explanation. They derived all possible determinants of communication from an extensive literature review. Subsequently, he put all those determinants to the test in a large empirical study, from which the ten beforementioned determinants came out as the most significant.

Lee et al. (2002) did extensive research on information quality in which he developed a tool to assess the quality of information. After an extensive literature review, he came up with several important dimensions of information quality. He argues that information must be: relevant, timely, complete and appropriate. Furthermore, determinants such as accessibility, believability, conciseness, consistency, ease of operation, correctness, interpretability, objectivity and understandability are measured as well in his research.

Many determinants which explain or predict communication quality has been listed. They can be summarized as follows:

Author	**Parameters**	**Short explanation**
Mohr & Sohi (1995)	○ Frequency ○ Bidirectional ○ Formality	Explain the nature of the communication flow.
Guiltinan, Rejab & Rodgers (1990), Bialaszewski &	○ Helpfulness ○ Adequacy ○ Efficiency	A more holistic approach of communication quality.

Giallourakis (1985), Anderson & Narus (1990)		
Stohl & Redding (1987), O'Reilly (1982)	○ Completeness ○ Credibility ○ Accuracy ○ Timeliness ○ Adequacy	Parameters of communication quality.
Liu & Chua (2010)	○ Clarity ○ Responsiveness ○ Comfort	Parameters of quality of communication experience.
Dirsmith & Covaleski (1983)	○ Appropriate language	Predicts good communication.
Nienaber & Schewe (2011)	○ Competency ○ Integrity ○ Reliability ○ Credibility ○ Honesty ○ Openness ○ Actuality ○ Completeness ○ Relevance ○ Explanation	Parameters that predict good communication, which enhance trust.
Lee et al. (2002)	○ Relevant ○ Timely ○ Complete ○ Appropriate ○ Accessibility ○ Believability ○ Conciseness ○ Consistency ○ Ease of operation ○ Correctness ○ Interpretability ○ Objectivity ○ Understandability ○ Transparency	Parameters that predict good information quality.

Table 1: Summary of communication quality parameters

As can be seen, a lot of different determinants have been found in literature. To enhance the clarity, they could be grouped and merged into three main categories; *Time, Style* and *Content*. *'Time'* depicts *'when'* there should be communicated. *'Style'* depicts *'how'* there should be communicated and *'Content'* depicts *'what'* should be communicated. In the scheme below (Figure 3) those categories are displayed with their corresponding determinants. Overlapping determinants and synonyms are merged. Together, these dimensions and parameters answer the second and third research questions: *What underlying parameters define communication quality?* And: *In what broader dimensions can those parameters be classified?* A summary of the dimensions and parameters can be seen in figure 3 below.

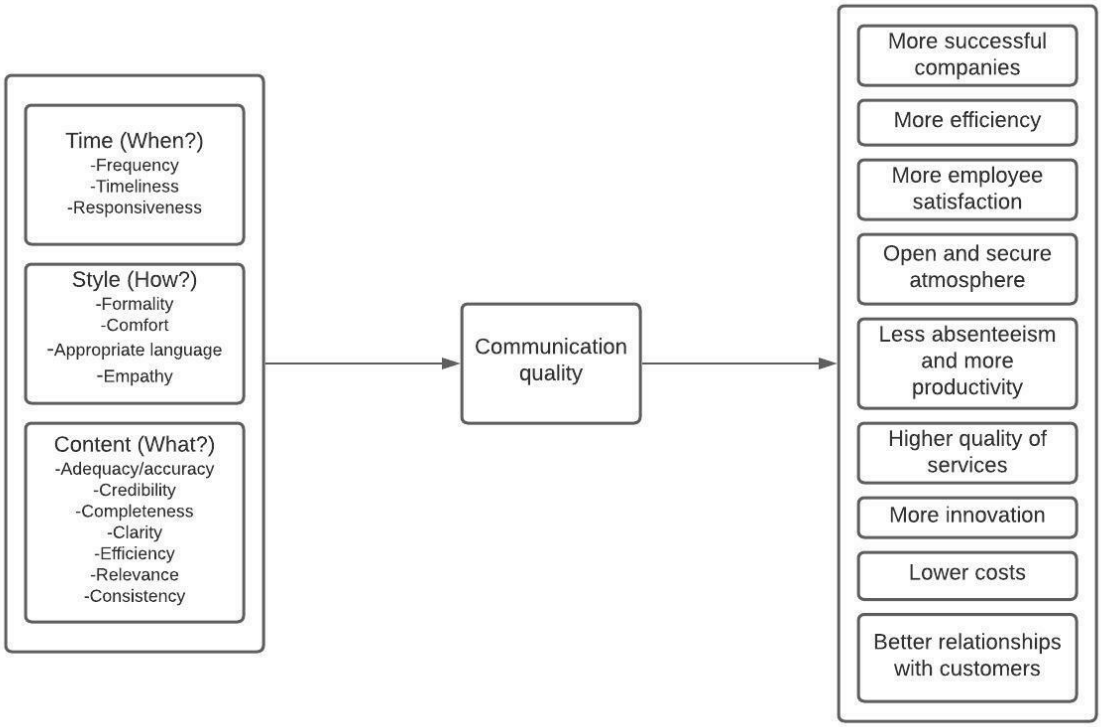

Figure 3: A schematic overview of the dimensions, parameters and benefits of communication quality

Assessing communication quality

Many parameters to predict communication quality has been explained by using the research of different scholars. However, in what way can communication quality be assessed using these parameters. Hargie & Tourish (1993) laid out different methods of assessing the effectiveness of communication in organizations. They call this a ''communication audit''. It is a more systematic methodology for studying communication quality. In general, managers within organizations have a too optimistic view of the effectiveness of the communication practices within their company. Therefore, conducting such a communication audit can be useful. Organizations need

to know who communicates with who, through what channels and with what productive and qualitative effect. Hargie & Tourish (1993) refer to Bland & Jackson (1990) who summarize it as follows:
A communication audit tells organisations:

- Who you *should* communicate with
- Who you *actually do* communicate with
- What you *should* be communicating
- How you *should* communicate with them; and
- How you *actually do* communicate with them.

The two main methods to conduct a communication audit are questionnaires and interviews (Hargie & Tourish, 1993). Questionnaires are mentioned as a suitable way of auditing communication. There are validated questionnaires which can be adapted for many specific situations in which the communication quality of an organization will be audited. For example, Lee et al. (2001) crafted a questionnaire in which many determinants of information/communication quality are analyzed (see the determinants in the parameters chapter). An advantage of questionnaires is that in a relatively short time, a large number of respondents can be asked. The objective of the questionnaire should be to discover the key issues of communication employees experience.
A method in which one can gain deeper insights into issues regarding communication is conducting interviews. It is often done as a follow-up after conducting the questionnaires. A limited number of respondents is needed in this case (Hargie & Tourish, 1993).

The goal of this chapter was to answer the following research questions:

- *What are the benefits of good communication quality?*
- *What underlying parameters define communication quality?*
- *In what broader dimensions can those parameters be classified?*

The benefits of good communication quality can be summarized as follows: more successful companies, more efficiency, more employee satisfaction, an open and secure atmosphere, less absenteeism and more productivity, higher quality of services, more innovation, lower costs and a better relationship with customers.
The parameters which, according to literature, define communication quality can be listed as follows:
Frequency, timeliness, responsiveness, formality, comfort, appropriate language, empathy, adequacy/accuracy, credibility, completeness, clarity, efficiency, relevancy and consistency.
These parameters can be grouped into three main dimensions; Time, Style and Content.

Methodology

Design

To answer the research questions stated in the introduction, several methods were used in this research. To answer the first three sub-questions, a literature review was conducted. To answer the remaining sub-questions, a combination of quantitative and qualitative data as well as literature was used.

To gain insights into the dimensions of communication quality that need improvement, a questionnaire was used. This questionnaire measured how employees of Thales and customers perceived the quality of communication on the dimensions found in literature. After this quantitative part, qualitative research consisting of follow-up interviews and a workshop was conducted to gain further insights and to come up with solutions and recommendations. The structure of this research can be seen in the light of the regulative cycle of Van Strien (1997). This cycle can be used to tackle problems in a business context. The problem statement is the first step of this cycle and this is described in chapter 1. The next phase of the cycle is the diagnosis phase. In this phase, a 'diagnose' is made; what is the rating of the different communication quality dimensions and parameters? Which of those are susceptible to improvement? The questionnaire is used to rate the three dimensions and parameters to see how they are perceived by the employees. Furthermore, an important point of the diagnosis phase is to explore the underlying causes of the problems found. Follow-up interviews which are based on the results from the questionnaire helped find this out. These interviews explored the underlying motivations of the employees; why were the parameters rated the way they are? Once this diagnosis has been made, a plan of action must be designed to improve the current situation. Part of the follow-up interviews also dealt with this phase, respondents were asked how they would improve the found problems. To further concretize the directions for improvement, a workshop was conducted with the staff of the customer contact centre. The results from the interviews were used to illustrate the problems with communication. This workshop also made the plan of action more concrete by distinguishing the recommendations into short-, medium- and long-term solutions. The actual intervention phase will not be handled in this research. In this phase, the solutions provided by this research are executed and this is not the scope of this research. The same goes for the evaluation phase.

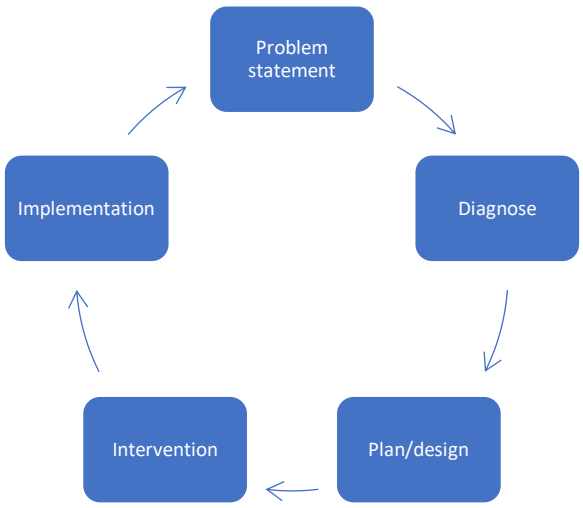

Figure 4: The regulative cycle (Van Strien, 1997)

Participants

To gain the data needed for the quantitative and qualitative parts of the research, several participants from inside Thales were recruited. For the questionnaire, employees within Thales who use the customer portal on an operational and tactical level were asked. They consisted of employees working as CCC Engineer, as well as employees from Sales Support. Employees who are familiar with the system, have a good view of what parts of it do need improvement. Therefore, they are used to gather this data. For this quantitative part of the research, the dataset consisted of the following respondents:

		N
Gender	Male	6
	Female	4
Department	CCC Engineers	5
	Sales Support	5

Table 2: Overview of respondents of the questionnaire

For the interviews, a broader set of respondents was recruited. Employees with different roles within the CCC and outside the CCC on both operational, tactical and strategic levels were used to collect data using interviews. Employees from the Sales Support part of the CCC as well as employees from the CCC Engineers are questioned. For the workshop, roughly the same people who were interviewed were involved with the workshop.

CCC Engineers: 3 employees from the CCC Engineers were interviewed. They use the customer portal to handle more technical requests and questions and communicate with customers and other employees.

Sales Support: 3 employees from the Sales Support department were interviewed. They use the customer portal to handle spares and repairs and communicate with customers and other employees.

The participants for the interviews can also be grouped in another way. Namely, strategic, tactical and operational. The strategic level deals with the more long-term goals of the CCC, the oversee the processes from a managerial perspective. One level lower, the tactical level deals with the more operational activities from the Sales Support department and the CCC Engineers and manages them. Those engineers and Sales Support employees together are the operational level. From all three groups, participants are represented so a good overview of different levels within the company is gained. 3 employees from strategic were interviewed, 2 from tactical and 4 from operational.

Procedure

First, employees who use the customer portal were invited through email to participate in a questionnaire. This questionnaire measured the perception of communication quality within the customer portal. In addition to the employees, customers are also asked to fill in the questionnaire. The survey tool in Microsoft Word is used for the questionnaire to deal with security policies at Thales. To ensure informed consent, participants are told at the beginning of the survey that their participation is voluntary and that their answers remain anonymous. They can stop the survey at any point during the process if they want to. Furthermore, the general purpose of the survey will be explained. The goal of this questionnaire is to gain insights into which dimensions of communication improvement are needed. The results of this questionnaire were used as the basis for follow-up interviews which were conducted after the questionnaire.

Before the interview, participants will be asked if the interview may be recorded. If so, they will be told the recordings will be deleted after the research is finished. The interviews were conducted partly online (video) and partly face-to-face. The overall purpose of the interviews will be explained. The participants will be given the opportunity to read the transcripts to ensure they know what can be used in the research. In the research, all participants will be anonymized. No names will be mentioned in the research. For example, a participant will be referred to as: *''Respondent X, (CCC Engineer) states that…''*. In this way, the anonymity of the participants will be ensured.

In the interviews with the employees, the researcher and the aim of the research were introduced first. In this way, the participants know what the interview is about and what they can expect. Participants were asked about their role within Thales; what function they have and what their level of engagement is with the customer portal. Exploring questions about the importance of the customer portal and their satisfaction with it. After that, employees were

asked about their experiences with the customer portal based on the results of the questionnaire. The three dimensions (Time, Style and Content) were introduced so the participants know the basic structure of the interview. Possible points of improvement on problems they encounter were derived from them.

After the interviews, a workshop was held with the employees from the different levels and departments. The goal of the workshop was to make the problems more concrete and to find concrete solutions and ideas for the problems found in the interviews. Employees from both the CCC Engineers and Sales Support of both operational level and tactical level were present. Also, employees from strategic were present. First, the results from the interviews were presented. To present the results in a structured way, the three dimensions of communication quality were used. After each dimension, the employees were asked to use post-its to come up with concrete solutions for the found problems. After that, employees were asked which problems need to be addressed in the short term and which in the medium- and long term. A summary of the research procedure can be seen below in figure 5:

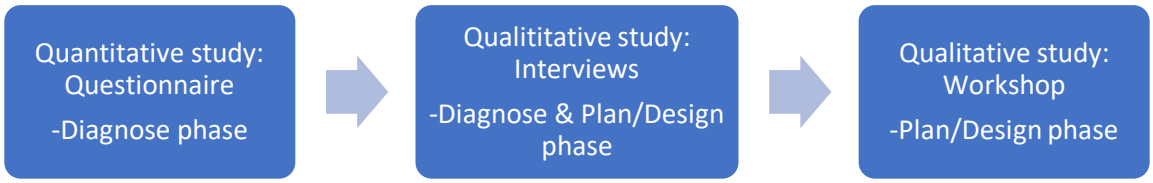

Figure 5: A visual overview of the research procedure

Measures

To measure the perceived quality of communication by both employees and customers, a questionnaire was used. As found in literature, many parameters define communication quality and they can be grouped into three main categories; Time, Style and Content. To measure the parameters, statements that were identified to adequately define them

were derived from literature. Most of the items were derived from Lee et al. (2002). Responsiveness (Liu et al. 2010) and Formality (Mohr & Sohi, 1995) were taken from different scholars. The item from empathy and appropriate language was derived from Lomas et al. (1989) and Forsyth et al. (1999). The items were slightly modified to fit the correct context. They were measured on a 5-point Likert scale (1 = totally disagree, 5 = totally agree). All items are displayed in the table below.

Dimension:	Parameter:	Item:
Time	*Timeliness*	1. The information is sufficiently on-time.
		2. The information is sufficiently up-to-date for our work.
	Frequency	3. The frequency of information provided is sufficient for our needs.
		4. The amount of information provided matches our needs.
		5. The amount of information provided is neither too much nor too little.
	Responsiveness	6. Colleagues respond to my questions and requests quickly during interaction.
		7. I am willing to listen to other perspectives.
		8. When I raise questions or concerns, colleagues try to address them immediately.
Style	*Formality*	9. Formal communication methods are followed (i.e., channels that are regularized, structured modes versus casual, informal, word-of-mouth modes).
		10. The terms of communication have been written down in detail.
		11. Expectations of employees are communicated in detail.
		12. The terms of communication between employees have been explicitly verbalized and discussed.
	Comfort	13. I feel colleagues trust me.
		14. I feel colleagues are trustworthy.
		15. I feel comfortable interacting with colleagues.
		16. Colleagues seem comfortable communicating with me.
	Appropriate language	17. The language used is professional.
		18. Colleagues make themselves understood through the use of appropriate language.
	Empathy	19. Colleagues indicate that they understand what is being said to them.
		20. The communication displays a nice attitude.
	Free of error/accuracy/ clarity	21. The information is correct.
		22. The information is accurate.
		23. The information is reliable.
	Completeness	24. The information includes all necessary values.
		25. The information is complete.
		26. The information is sufficiently complete for our needs.
		27. The information covers the needs of our tasks.
		28. The information has sufficient breadth and depth for our task.
	Consistency	29. The information is consistently presented in the same format.
		30. The information is presented consistently.
		31. The information is represented in a consistent format.

Content	*Relevancy*	32. The information is useful to our work.
		33. The information is relevant to our work.
		34. The information is appropriate for our work.
		35. The information is applicable to our work.
	Believability/credibility	36. The information is believable.
		37. The information is trustworthy.
		38. The information is credible.
	Objectivity	39. The information was objectively collected.
		40. The information is based on facts.
		41. The information is objective.
		42. The information presents an impartial view.
	Concise representation/ efficiency	43. The information is formatted compactly.
		44. The information is presented concisely.
		45. The information is presented in a compact form.
		46. The representation of this information is compact and concise.

Table 3: Statements of the questionnaire with their corresponding parameters and dimensions

Data analysis

To analyze the quantitative data, SPSS was used to execute some analysis. To compare the means between scores on all the parameters and between different subsets of respondents, descriptive statistics were used. Average scores on all three dimensions and all parameters were analyzed as well as the differences between the CCC Engineers and the Sales Support staff. Standard deviations were used to determine the distribution of normality.

After the interviews were transcribed, codes were identified of themes that came back multiple times during the interviews. This round of coding resulted in 12 codes which are listed below:

- Reaction time
- Frequency
- Formality
- Soft skills/communication skills
- Integration of internal stakeholders
- Integration of software/tools
- Integration of customers
- Dashboards
- Status updates
- Correctness of information
- Forms
- Consistent way of logging information
- Process dependency
- Miscellaneous functionalities

After all codes were listed, they were grouped into subcategories. All of these subcategories can be linked to one of the parameters found in literature and therefore can be connected to the

conceptual framework of communication quality. This resulted in a structured analysis of all interview data in which all topics are divided using the parameters and dimensions found in literature. A structured overview of all codes and their corresponding parameters can be seen below in table 4:

Dimension:	*Code:*	*Parameter:*
Time	• Reaction time	Timeliness & Responsiveness
	• Frequency	Frequency
Style	• Formality	Formality & Appropriate language
	• Soft skills/communication skills	Empathy
Content	• Integration of internal stakeholders • Integration of software/tools • Integration of customers	Efficiency
	• Dashboards • Status updates • Miscellaneous functionalities	Correctness/Free of error/Completeness
	• Forms • Consistent way of logging information • Process dependency	Consistency/Clarity

Table 4: Summary of codes and their corresponding parameters

For the analysis of the workshop, the post-its were used. The staff of the CCC came up with the ideas and wrote them on post-its which they placed on a whiteboard and they were ranked regarding priority. The post-its were collected after the research and kept together by the researcher the same way they were placed on the board (regarding dimension and priority) and subsequently summarized in the results section.

Results – Quantitative

In the literature review, several parameters were identified which predict the level of communication quality. These parameters were grouped in the dimensions Time, Style and Content. To explore in which of these dimensions and parameters is room for improvement and thus answer the fourth research question: *In what dimensions does the CCC need improvement?* A questionnaire was conducted that measured the parameters. This falls under the 'diagnose' phase of the regulative model of Van Strien (1997).

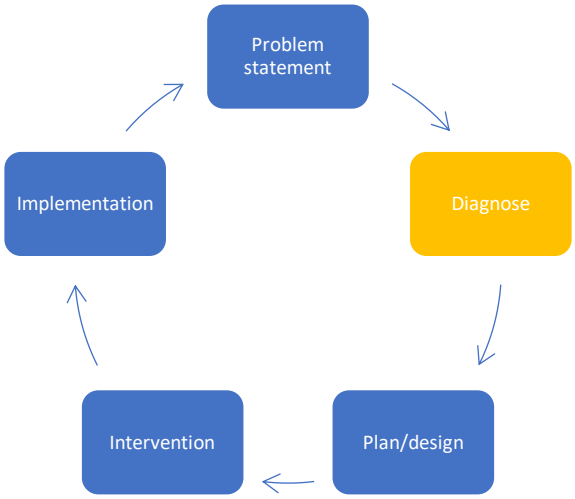

Figure 6: The current phase in the regulative cycle.

No outliers were detected throughout the sample of respondents. Below the average scores of the dimensions Time, Style and Content can be seen. There is made a distinction between CCC Engineers and Sales Support. However, no significant difference was found between those two groups. As can be seen, the dimension Time scored the lowest, followed by Content and finally Style. There is room for improvement in all three dimensions. The variation within groups was not that high, especially in the dimension Style. Here the overall standard deviation was 0.37. In the dimensions Time and Content, the standard deviations were 0.40 and 0.42 respectively.

Dimension:	**CCC Engineers**	***Std. deviation***	**Sales Support**	***Std. deviation***	**Total**	***Std. deviation***
	N = 5		*N = 5*		*N = 10*	
Time	3.68	*0.56*	3.45	*0.14*	3.56	*0.40*
Style	3.69	*0.39*	3.69	*0.40*	3.69	*0.37*
Content	3.68	*0.55*	3.68	*0.30*	3.68	*0.42*

Table 5: Average scores of the dimensions Time, Style and Content.
Scores are rated on a 5-point Likert scale from 1 (totally disagree) to 5 (totally agree).

Time

To narrow down the scores reported in table 5, the scores per parameter for each of the dimensions are explained below. As stated previously, Time was the poorest rated dimension and that can be confirmed when a closer look is taken at the scores of the parameters. Also, in this case, no significant differences were found between the CCC Engineers and Sales Support. The parameter frequency is the parameter with the lowest overall score, so there the room for improvement is the highest.

Parameter:	**CCC Engineers** *N = 5*	***Std. deviation***	**Sales Support** *N = 5*	***Std. deviation***	**Total** *N = 10*	***Std. deviation***
Timeliness	3.60	*0.82*	3.50	*0.35*	3.55	*0.59*
Frequency	3.80	*0.69*	3.00	*0.67*	3.40	*0.73*
Responsiveness	3.60	*0.64*	3.86	*0.38*	3.73	*0.51*

Table 6: Average scores of the parameters connected to Time.
Scores are rated on a 5-point Likert scale from 1 (totally disagree) to 5 (totally agree).

Style

The second dimension is Style and as stated previously, this was the best-rated dimension of the three. There were no significant differences measured between CCC Engineers and Sales Support in this dimension as well. The most important thing that stands out, is that the parameter formality has by far the lowest score with exactly 3.00. This in contrary to the parameter comfort, which has the highest score (4.13) of all parameters.

Parameter:	**CCC Engineers** *N = 5*	***Std. deviation***	**Sales Support** *N = 5*	***Std. deviation***	**Total** *N = 10*	***Std. deviation***
Formality	2.80	*0.64*	3.20	*0.69*	3.00	*0.66*
Comfort	4.30	*0.48*	3.95	*0.76*	4.13	*0.63*
Appropriate language	3.80	*0.57*	3.90	*0.74*	3.85	*0.62*
Empathy	3.70	*0.45*	3.70	*0.27*	3.70	*0.35*

Table 7: Average scores of the parameters connected to Style.
Scores are rated on a 5-point Likert scale from 1 (totally disagree) to 5 (totally agree).

Content

The last dimension of communication quality is Content. This is, after Time, the poorest rated dimension of all three with an average score of 3.68. Again, no significant differences were found between CCC Engineers and Sales Support. Consistency seems to be the biggest problem within the dimension Content, with a score of 3.13. Also completeness, concise representation/efficiency and free or error/accuracy/clarity do have less than sufficient scores. There was a low level of consensus in the parameter Consistency, with a standard deviation of

0.88. Follow-up interviews will dig deeper into the results gained with this questionnaire and will try to come up with underlying causes of the problem and possible solutions.

Parameter:	**CCC Engineers** *N = 5*	***Std. deviation***	**Sales Support** *N = 5*	***Std. deviation***	**Total** *N =10*	***Std. deviation***
Free of error/accuracy/clarity	3.80	*0.60*	3.86	*0.18*	3.83	*0.42*
Completeness	3.64	*0.55*	3.44	*0.52*	3.54	*0.52*
Consistency	2.86	*0.87*	3.40	*0.89*	3.13	*0.88*
Relevancy	4.20	*0.53*	3.95	*0.11*	4.07	*0.53*
Believability/credibility	4.13	*0.64*	3.80	*0.29*	3.97	*0.64*
Objectivity	3.50	*0.51*	3.60	*0.66*	3.55	*0.51*
Concise representation/efficiency	3.60	*0.63*	3.80	*0.27*	3.70	*0.63*

Table 8: Average scores of the parameters connected to Content.
Scores are rated on a 5-point Likert scale from 1 (totally disagree) to 5 (totally agree).

Results – Qualitative

In the next chapter, the results from the follow-up interviews will be discussed. The previous chapter discussed the results of the questionnaire. It concluded that in all three dimensions is room for improvement. The chapter is divided into three parts corresponding to the three dimensions of communication quality; Time, Style and Content. In these subsections, the poorest rated parameters according to the quantitative data will be discussed. In this and the next chapter, the fifth and sixth research questions will be answered: *In what way can the CCC improve the quality of its internal communication and data?* And: *How can the CCC optimize its communication flow towards customers?* This falls under both the 'diagnose' and 'plan/design' phase of the regulative model of Van Strien (1997).

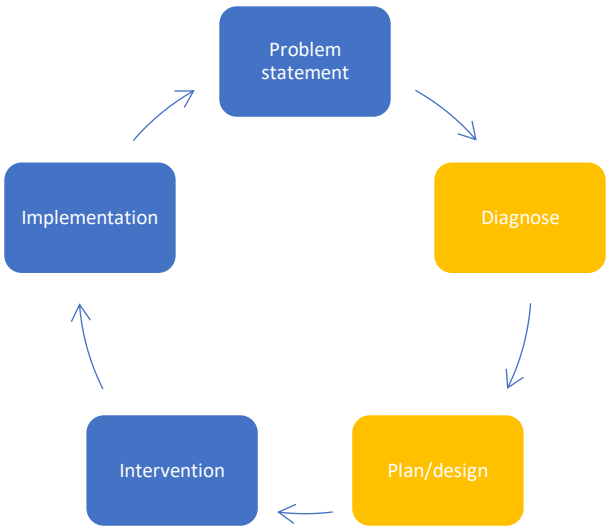

Figure 7: The current phase in the regulative cycle.

Time:

The first dimension of communication quality was Time. This dimension was about 'when' to communicate. The parameters which together explain this dimension were: timeliness, frequency and responsiveness. The parameters timeliness and responsiveness were grouped in this chapter because the respondents provided very similar answers to the questions regarding these parameters.

Timeliness & Responsiveness

A big factor in the parameter's timeliness and responsiveness is the response time. The response time can be both about internal; so communication between employees within the CCC and other departments, and external; so communication between employees and customers. It stands out that there are no real protocols for how fast employees should respond, are at least not that they

know of. Respondent 7 (CCC Engineer) talks about the lack of rules regarding response time towards customers:

> *''There are no clear rules for that, there are KPI's (key performance indicators) for when you should send a response when the customer asks a question. I don't know by heart what they look like, I didn't look at them.''*

This employee indicates that he does it by feeling; it is more of a gut call:

> *"I can only talk about myself. I have the rule that if I communicate or the customer asks a question, I always send a response the same day or the day after, even if it is not the solution.''*

Respondent 8 (CCC Engineer) also indicates that he strives to respond within one working day. However, this is no hard rule. It depends on the customer, how close the relationship with him is determines how fast there needs to be a response:

> *"We try to do it within one working day. An answer depends a bit on the problem, as well as which customer it concerns. If it is a customer who asks a question once every 5 years, then you are in a little less hurry than with a customer with whom you have daily contact."*

An often mentioned cause for delay in response time towards the customer is the response time from within the company. When employees from the CCC have to redirect a question towards a higher level of support, they become dependent on their answers and response time. Respondent 7 (CCC Engineer) talks about his communication with higher-level engineers:

> *''There are people there that I have to go after a lot. But those people have way too many tasks that make them overwhelmed. Then you send a reminder and they do that, but then you have to wait a long time again."*

He argues that a probable cause for this problem is understaffing in this engineering department: *''Yes, that is a common problem at Thales, too few people.''*

Respondent 8 (CCC Engineer) also experiences this problem and explains how these higher-level engineers have a lot of other work to do:

''Such a question from a customer comes in between their (engineers) own tasks. For the engineers, it is just an extra burden. It is an extra task that they have on top of their normal work."

Respondent 9 (Sales Support) indicates that dependency on other departments for a higher level of support can result in a variety of response times:

"Once you are dependent on other groups within Thales, it varies from a week to a year. There is so much variety there and you also have certain departments that are completely overloaded."

This dependency on internal departments can have negative consequences on service quality. Respondent 5 (CCC Engineers) indicates that a dependence on internal departments can result in a slower response time towards the customer than needed:

''Sometimes you really wish that their reaction time was faster. There could be more commitment towards delivering service. Then an answer like "yes, we can't do anything about that" doesn't apply anymore. Because we have an internal dependency or resource problem, you can't answer at the speed you would like sometimes."

This employee suggests that a lack of awareness among these higher-level engineers could be a cause for slower response times and that there should be a high level of commitment. Awareness about the importance of fast response time towards the customer should be improved among these engineers:

''On the other hand, you are still dependent on the commitment of the internal organization, which does not have a certain awareness towards the service organization. (…) At the end of the day, they have to do something about it. So you need commitment to the process chain for that."

It is clear the level of awareness and commitment of these engineers should increase a bit. It is just a resource problem or has it to do with the commitment of the engineers. It should be made clear what their tasks are and that it is also in their interest to help the CCC as fast as possible as the service quality depends on it.
Apart from the response time from employees, sometimes customers do not even respond at all or are very slowly at least. Respondent 5 (CCC Engineer) explains how there are several reasons why customers do respond so slow if even at all:

"Sometimes there is just no response from the customer. There are quite a few examples where we want to help solve an incident, so we need to get data (product numbers, error reports) from the customer. Then we wait for half a year for that data. This can have various causes, sometimes a ship is on a mission, then you can try what you want, but the operational interest of the customer comes first. Sometimes it just doesn't get any attention from the customer. Then you can keep checking with the customer but yeah, if they don't come up with an answer then at some point, it will stop."

He suggests that employees of the CCC should be stricter while dealing with such customers. He emphasizes the lack of this in the current situation:

''But in those cases, I also think that we should be stricter. So that we say in such a case: "Okay customer, if this is not given priority on your side, we will also close the case on our side." That's not happening so much right now. I think it should.''

Frequency

The second parameter of the dimension Time is frequency. This parameter is about how much there should be communicated between employees and customers. Respondent 1 (Strategic) summarizes it very adequate when asked about what the main problem is: *''The frequency, so we don't keep our customers informed.''* The same problem as with timeliness and responsiveness arises; there are no (clear) protocols. Respondent 7 (CCC Engineer) illustrates how he invents his own rules:

"In addition, I set reminders every week for asking for an update, if I don't have an update, I let the customer know that they are still working on it. I make sure that the customer is constantly aware that something is still happening, but that is my rule. There are KPI's (key performance indicators) for that, but I don't know them by heart either."

Also, respondent 8 (CCC Engineer) indicates that there are no known protocols for the desired frequency of communication towards customers: *''Maybe there is a protocol but not to my knowledge.''*

A second problem that several respondents encounter is that it is hard, and therefore not always done, to keep communicating with the customer even though no new updates are available or even when there is bad news. Respondent 5 (CCC Engineers) illustrates how this is a problem for some employees:

''What is very difficult for them is that, if you have to go to the customer and say 'I'm still

thinking about you but I don't have an update'' that is quite a difficult message that you have to send. And you don't always see that happening. Also, the fact that you don't have an update is actually a piece of information so that the customer knows that it is stagnating."

Respondent 6 (Sales Support) recognizes this problem. This respondent indicates that it can be hard to communicate bad news to a customer and that improvement is needed:

"Bad news is also news, as they say. But how do you share that message with the customer? That it takes longer or that there is actually no new information, how do you tell that? How do you explain that to the customer? I often hear employees are disappointed that they don't actually have any information and that they just tell some excuses. And I don't think that's always a good thing. Much improvement is still needed. I can imagine that that is very difficult to do. Also because the customer will also respond to that. It would be fair of course."

This respondent comes up with several ideas on how to improve this lack of communication. Mainly more standardization and protocols are needed. Again, KPI's could be used to illustrate the desired level of frequency. However, attention must be paid to how to make them known to everyone.

''We really need to establish communication with the customer more often and more proactively. That the customer doesn't have to ask 'hey what about this and that'', but that you can perhaps set up rules or measurements together, for example, every two weeks. So you provide updates on status changes without the customer having to ask. There could be certain standards or KPIs there."

Finally, an important point is to have a personal touch with the customer. So visiting the customer instead of mailing. Respondent 2 (Strategic) stresses the importance of this factor, also in case there is no or bad news:

"Sometimes you just have to call even if you have no news, or even visit the customer. So I also advise Sales Support employees and CCC Engineers to visit the customer every now and then. That's super important."

What can be seen in both parameters is that there is a clear lack of structure and protocols. Most employees just do something by feeling. This results in arbitrary communication both internally and with customers. In some cases, the communication is even absent, for example when there

is bad news to deliver to the customer. The cause is also here the lack of protocols; it can be hard to deliver bad news. The findings of the 'Time' part are summarized in the table below:

Dimension	***Parameter***	***Points of improvement***
Time	Timeliness & Responsiveness	• Inconsistent response time to customers. → Better protocols, KPI's. • Slow response time. internally. → More staffing in the engineering department, higher awareness of importance. • Slow or even no response from customer. → Deal with it more strictly.
	Frequency	• Lack of (known) protocols on the desired frequency of communication → Better (awareness of) KPI's. • Difficulties to deliver bad or no news. → Communication training. • More personal visits to the customer.

Table 9: Summary of results from dimension Time

Style

The second dimension is Style. This dimension explains how there should be communicated. It exists of three parameters that could use improvement according to the questionnaire and were discussed during the follow-up interviews; formality, appropriate language and empathy. Formality and appropriate language resulted in very similar points during the interviews and are therefore grouped.

Formality & Appropriate language

The first important point within the parameters formality and appropriate language is the level of formality within the company. There is a lot of communication between employees of the CCC and higher-level support lines. From this internal perspective, there is a very informal setting, as

can be concluded from the statements from respondent 1 (Strategic) and respondent 7 (CCC Engineer) and respondent 5 (CCC Engineer).

> *Respondent 1: ''Internally, I also communicate informally. But it is important to know who you are talking to and what the effect can be of the way you communicate. I think that's a very important point."*

> *Respondent 7: "In general, formality is not very desirable within Thales."*

> *Respondent 5: ''I think it's quite an informal organization, internally. People don't rely on ranks and I think that helps. So I don't see that as a problem internally."*

However, more important is the communication with the customer. This is how you present yourself as a company to the customer so there is more at stake. The level of formality and the used language are dependent on different factors. Respondent 7 (CCC Engineer) argues that people with whom he communicates are technical people as well. This results in an informal way of communicating which he thinks has a positive effect.

> *''The people I deal with are often all technicians as well who work on the ship. You talk to the customer's technical department in a very personal way. (…) I think that has a positive effect. You just talk to each other as you would normally do so you understand each other better."*

Respondent 7 (CCC Engineer) thinks that employees should initially keep a distance from the customer until they have a good relationship with the customer:

> *"Personally, I do think that you should keep a certain distance, but in the end, if you have a good relationship with a customer, you can say that you can loosen up a bit. Then the distance gets smaller."*

Respondent 5 (CCC Engineer) agrees with him and emphasizes the position you have towards a customer. He shares an anecdote about a situation in which he thought improvement or protocols were needed:

> *"Last year I was in the office once and I heard a colleague talking to a customer. He talked as if it were a friend of his. Then it tends to get very informal. It is good that you have a friendly relationship because in that case you at least have a good relationship with the*

customer. But I do think that you should realize at all times the position you have; that you do talk to your customers, so to speak. And that you are a contractor who has to adopt a certain attitude and need to have a bit of respect. I think we could improve there."

The level of formality and the used language toward customers is also dependent on culture. Thales has many different customers around the world and has to communicate with many different cultures, each with its norms on communication. Respondent 9 (Sales Support) illustrates his experiences with different cultures:

"Depends on the culture you interact with. Some countries place great value on the informal. In Germany, it is quite normal to say ''Herr ...'', while the Korean and Singaporean customers don't have that at all. They just say "Hi (x)". They don't like the hierarchy. I don't know what that is, I think Japan is more intense. The disadvantage of formal communication is that it is very impersonal. In the countries I do business with, the personal aspect is important."

Respondent 1 (Strategic) gives an example as well on cultural differences while communicating with customers:

"For example, if I communicate with Korea, that is a completely different way of communicating than with the French. Let alone the Dutch. Because we are very direct. With the French, you have to make a very precise story of it. So it is also important that you know which criteria belong to which culture. And that you keep it professional."

It is important to know how to handle all these different cultures. However, respondent 9 (Sales Support) emphasizes the lack of training Thales provides to educate employees on this. There should be more focus on cultural aspects within Thales and employees should be trained and educated about these cultural differences.

''You teach that yourself (communicating with different cultures). You are simply thrown into the mailing exchange and then you look at what has been said in the past. Then you make something of it. There are courses on how to do business with certain countries, but they are never given.''

Lastly, the level of English also seems to be lacking within the company. This could be improved to ensure a high level of English speaking employees which makes sure Thales remains its professional appearance. Respondent 5 (CCC Engineers) notes that it can have negative consequences on the conversation:

“English is not the native language of the majority of our customers and not internally either. If an Italian speaks English on the phone and the level of English is not perfect on both sides, you are easily talking past each other."

Empathy

The second parameter is empathy. This is, apart from formality, more about communication skills as a whole. It is more about soft skills. Respondent 5 (CCC Engineers) indicates that improvement here is needed because at the moment, no attention is paid to communication skills. He suggests employees to take a course on communication skills to improve their level of it.

“I think we could improve there. If you assume that at the moment we have not yet made any investment in the way of communicating. Everyone just does it the way they learn it from themselves. In that sense, I think it wouldn't be wrong if we could maybe take a course together or something similar that makes you aware of how to handle your communication good and in the right way."

Furthermore, he explains why it is so important to make sure the communication skills of the employees are at a sufficient level. According to this respondent, it is about the appearance and maturity of the company. He states when asked about why communication skills are important:

“Appearance and maturity of the organization towards the outside world. I think that that is very decisive for the experience a customer has towards Thales as an organization."

The need for communication skill training is also emphasized by respondent 1 (Strategic), who makes an interesting distinction between employees working at a service desk and more tech-savvy people. This respondent argues that these more technical gifted employees sometimes lack the communication skills needed. In this case, communication skills training could be useful.

''If you look at people who are working on a help desk or a service desk, that often requires a profile with a lot of empathy, to show involvement, especially give the customer the feeling that he has been heard and that you say ‘’okay, we come up with this action plan and that's how we get started''. At the moment there are a lot of technical people and they do their job well, but they do not always have the empathy or the ability to communicate it well, in the sense that you can hear the involvement reflected in it. I think that you can achieve a lot with communication training.’’

An example of insufficient communication towards the customer and how it could be done

instead is given by the same respondent. This respondent emphasizes the need to reassure the customer that you did not forget him. Guidelines like this should come back in the beforementioned communication skills training.

> *''You can say ''I don't have an update'', but you can also say ''It's still in this department, we're working on it and it's taking more time for these and these reasons''. Even if you make it a bluff, the main thing is to reassure that customer that we have not forgotten him. So that's a whole different way of communication."*

Finally, a last interesting point is made by respondent 4. This respondent argues that a generation gap can be the cause of a difference in openness to improvement and open-mindedness. A diverse workplace with employees of all ages can help solve this problem.

> *"I think that's also a generational difference. There are a lot of young people in Sales Support and they are very open to helping and improving things. And on the CCC Engineers side, there are slightly more people who have been working here for some years and have found their own ways, which makes them less open to help with that. It is very difficult to intervene, they want to keep everything within their own club. I find that really difficult I must say."*

Here as well, a lack of protocols and skills is experienced. Employees learn by themselves how to communicate with customers all over the world. However, different cultures require different styles of communication. More attention should be paid to increasing awareness and skills on this. The findings of the 'style' part are summarized in the table below:

Dimension	***Parameter***	***Points of improvement***
Style	Formality & Appropriate language	• Sometimes lack of professionality in communication with the customer. → Higher awareness needed on how to communicate formally with the customer, especially the first time. • Difficulties are experienced in how to deal with different cultures. → Better training needed on different norms and values among cultures.

		• English speaking skills not always on the desired level. → English speaking training can be provided.
	Empathy	• Lack of communication skills in general, mostly technically gifted people who sometimes lack the empathy needed. → Communication training can help improve this.

Table 10: Summary of results from dimension Style

Content

The last dimension is Content. This dimension is about what should be communicated. Several parameters were rated at a non-sufficient level in the questionnaire and came up in the follow-up interviews; efficiency, completeness, free of error/accuracy, clarity and consistency.

Efficiency

The first parameter of Content is efficiency. A big factor in this parameter is integration. The lack of integration of different kinds into the customer portal came up extensively in the interviews. There were three main parts which should be integrated more into the customer portal; internal stakeholders, software and customers.

Internal stakeholders

Many respondents point out that there are several internal stakeholders which should be integrated into the portal but are currently not. The main problem here is that employees of the CCC have to do their logging twice, which is time-consuming and prone to errors. For example, employees have to fill in their data in Oracle and WindChill in certain cases. Respondent 6 (Sales Support) explains how other stakeholders should be integrated to avoid redundancy:

> *''If we as Sales Support have to manage people internally, and another person, with the same case, you see that we have to create a task twice with the same documents. That should simply be copied automatically. I think that should be set up first and other departments may also need to be added to the portal before you can put the customer in it."*

One of such stakeholders which is often mentioned, especially by CCC Engineers, is the engineering department. This is a higher level of support which consists of engineers with more

specific technical knowledge. Respondent 7 (CCC Engineer) indicates that he would like to see them integrated:

> *''It is a pity that engineering does not have access to the portal. That is the department that also does design, which goes a step further than what I do. That's where the product knowledge really is. They have no access to the portal."*

Furthermore, he explains how he communicates with them now and how that is very redundant. He must enter all the details manually in the portal and send the question to the engineers and enter the answers manually in the portal again. This is error-prone and takes much more time. Communicating with other departments such as these engineers is now going through Outlook mostly:

> *“At the moment, I communicate with them via email. I get a question from a customer, which I put in the portal. I then forward the customer's email to the relevant system engineer or another person. I get an answer to that, I copy it back into the portal and send it back to the customer and then I put the status update in the portal."*

Respondent 3 (Strategic) also indicates that it is important to implement the engineers. He argues that apart from the redundancy and time-consuming logging, it is also important for the engineers to gain deeper insights into the needs of the customer:

> *''Behind that you also have engineering, and those people also need to see what is going on with our customers. And based on the outstanding cases, they should be able to just see what's going on, so they need read-only access."*

A second stakeholder which is mentioned is the Repairshop. They track the status of ongoing repairs. Respondent 7 (CCC Engineer) argues that it is important to implement the Repairshop so they can track the progress of repairs and act accordingly faster.

> *The Repair Shop can then keep track of the progress of the repairs. If they see, for example, that there are problems somewhere, they can let a technician visit it.”*

Also respondents 8 (CCC Engineer) and 9 (Sales Support) think the Repairshop could be a valuable stakeholder to integrate into the portal:

Respondent 8: ''We have a lot to do with the Repair Shop. Everyone should be able to access and use the customer portal. It would of course be nice if everyone could actually use it."

Respondent 9: "The party you have the most contact with as Sales Support is the Repair Shop, so if they were included, that would help."

Software

The second category which should be integrated is software. Thales uses a lot of tooling for different processes; ERP (Enterprise Resource Planning), product life cycle management, failure reports etc. Many respondents would like to see the ERP system Oracle better integrated with the customer portal. Respondent 7 (CCC Engineer) states: *"I think that is a must. If you're talking about repairs and stuff, you'd like to have real-time information from Oracle in the portal, delivery times, etc."* Respondent 8 (CCC Engineer) also stresses the importance of the integration of Oracle with the portal: *"Currently, firstly Oracle. A lot of data between Oracle and the customer portal is transferred back and forth."* In the current situation information in Oracle is not available in the customer portal. Employees must now look in two programs to get basic information about delivery times and invoices. Better integration would make the situation easier for customers as well. They now have to ask manually for changes in delivery times instead of seeing them at a glance on the customer portal:

Respondent 9 (CCC Engineer): ''If you have ordered something from bol.com, you would also like to be able to see what the invoice was, right? That also applies to the customer. Currently, all that is not in there, we have to fill that in manually, it is all in Oracle. You can ask the seller: "Have there been any changes in the delivery time or delivery date? Or can I see the repair form from the manufacturer?" I now have to request all that manually. In fact, you would like to have all those things connected."

Respondent 6 (Sales Support) argues how a better integration between Oracle and the customer portal would make things easier.

''It would be nice if it comes together more if it is more integrated with each other. That you have an overview somewhere of everything, if you are looking for something. For example, you have a certain order number that you could fill in somewhere. And that you encounter it everywhere in the same way in 1 overview."

Apart from Oracle the product life cycle management tool Windchill is also often mentioned as a tool which should be integrated better with the customer portal. The same problem as with

Oracle arises; employees have to switch between all the tools to get the information they need and update it manually in all tools. This is very prone to error and time consuming, as illustrated by respondent 7 (CCC Engineer):

> *"Ultimately, you would also want to connect that. That if I create a repair, I can then look up the serial numbers from Windchill, and that it is all connected. This also solves the problem that everyone has to look in a separate tool. People involved in planning and production look in Oracle and then retrieve information from the portal. And they see in Windchill that a repair is underway with a reference to the customer portal. And then you can see information from Windchill in the portal again. Then you aren't switching between all those tools constantly."*

Customers

The last category of stakeholders that should be integrated more into the customer portal is the customers. It is important to fix the integration with internal stakeholders and all different tools first so that the customer can experience the full potential of the customer portal. Respondent 7 and respondent 6 explain how it is important to first make sure the portal is set up properly internally:

> *Respondent 7 (CCC Engineer): ''It's just that there are almost no customers in my package, actually none at all. So for me, it has no added value at all. But as soon as the customer has access to the portal, I'd rather have the portal."*

> *Respondent 6 (Sales Support): ''I think because it is not optimized internally yet, there is still room for improvement. I think you should have it well organized internally first before you start including the customers."*

It is important to implement as many customers in the customer portal as possible. Respondent 8 (CCC Engineer) explains what the procedure is when a customer who is not integrated into the customer portal shoots a request. The question and information have to be manually entered in the portal which, again, is time-consuming and prone to error:

> *"In that case communication takes place by email. The problem then is that the important communication with the customer, you then have to cut and paste. That will not automatically be integrated into the case. So you have extra work there.''*

Respondent 5 (CCC Engineer) argues that it is beneficial for the company if the customers enter their requests directly into the portal because it is way more efficient. Furthermore, he argues

that it is beneficial for the customer as well as they have a much better insight into their own data:

> *“Of course, it helps us if a customer makes his service needs known via the portal, then it Is registered from the first moment. It is very beneficial to us, as an internal organization if the customer enters it as quickly as possible. This makes life easier for the customer as well, he has a much better insight into the data.”*

It is evident that at the moment most customers are not integrated into the portal but that it would be very helpful if they were. However, why are all those customers not integrated into the portal and how can they be convinced to use it? One of the problems that arose from the interviews is that there is a lack of awareness among the customers. Respondents indicate that customers may not even know of the existence of the customer portal.

> *Respondent 7 (CCC Engineer): ''I think many customers don't even know that such a portal exists. That's how it comes across to me anyway."*

> *Respondent 3 (Strategic): ''But there are several customers who have no access, due to the lack of technical facilities, or are not yet aware of it. Therefore, they do not have access yet and continue to communicate with us in the old way, i.e. by telephone or email.”*

There should be more awareness among customers. Why is this so low? Some respondents point out that it is not promoted adequately. Enthusiasm from within the company lacks which results in a suboptimal promotion of the portal to the customers. Respondent 1 (strategic) argues that it is unclear what the strategy in the market is; how should it be put in the market?

> *Respondent 9 (Sales Support): ''I think that if everyone had been really enthusiastic about the portal, you would have gotten more customers in it. If you think that portal is the greatest thing ever, and you're sure the customer can make good use of it, you'll promote it much better."*

> *Respondent 1 (Strategic): ''You now notice that it is important how we market it. We don't have the market strategy clear yet, so how do we market it, what should be paid, and what should not be paid. So that we ensure that the customer will actually use it. That is still relatively low.”*

Respondent 3 (Strategic) came up with a creative idea to increase awareness among the customers. At the moment, Thales has an ‘experience room’ for their radar systems. Here,

customers can experience in an interactive way how the radar systems work in real life. This respondent thought it would be good to create a similar experience for customer service. He explains that he wants to see a room reserved for this 'experience'. In this room then hang three screens next to each other which are connected to computers. On the left screen, the front-end of the customer portal can be shown, what the customer sees. On the right screen can the back-end be shown, the part the CCC sees. The middle screen can show where you are in the process using a presentation where the screen lights up every time you get a little further in the process. In this way, the customer can in a very transparent way see how the process works.

> *"A customer service experience room. And then you can take the customer completely through the service process. A kind of simulation. Then we can show various customers that are still considering whether or not they want to use the portal, the whole process. In this way, you can convince customers to use the portal."*

Correctness/free or error/completeness

The next parameters are about the actual Content of the information. To what extent is the information provided by both customers and internal stakeholders correct and complete? The same as with Time it mostly depends on who you are dealing with. Respondent 7 (CCC Engineer) illustrates that different customers have different levels of information quality:

> *"That very much depends on the customer. For example, if I look at Singapore, which is a very punctual customer and they always have everything perfectly arranged, we can learn a lot from that. When I look at Greece, I get almost no information. They just do something. That also depends very much on the culture and type of customer."*

Another problem is that the way requests are done is very prone to errors or insufficient information. For example, in some cases the customer only has to enter the product number. If he enters the wrong number, it becomes unclear to Thales what the problem is. It has to be more clear what information exactly is expected from the customer. Standardized forms can be helpful to solve this problem. These will be discussed in greater detail under *efficiency/clarity.*

> *''But it can also happen that a customer fills in a wrong product number or makes a typo, that part A suddenly looks like part B. I think that when ordering the spare parts, if a customer indicates "it is for this or that", it already helps with a bit of internal testing; do we really deliver what the customer needs? (…) They can just fill in something, there is no input suggestion or something like that."*

Respondent 1 (Strategic) also recognizes this problem. This respondent indicates that it happens

a lot that customers provide incomplete or wrong information and you have to go after it again. This takes unnecessary time for both the CCC and the customer. This respondent indicates that awareness should be raised among the customers about the consequences, also for them, of providing insufficient information:

> *''I think to make them aware of the effect of not providing the right information, how long it will take. So that it is mainly in their own interest that they do that. They also want to be helped. If you explain well what is expected of them, instead of saying nothing, you already fixed a lot. So clearly express the expectation management to each other."*

Dashboards

Another point regarding completeness that several respondents point out is the lack of dashboards. When customers or employees log onto the customer portal they want to see all relevant information in one eye. For customers that means the status of their orders and requests and for employees their outstanding cases and progress. Respondent 7 indicates that customers cannot see the status of their request when they log in:

> *"You would actually want them to see the status as soon as they log in, that would really add something."*

This is the most important information for a customer to know; you would like to know immediately the status of your request or order. Respondent 6 (Sales Support) indicates the importance of these dashboards internally:

> *''I also think that certain dashboards are missing with which you can also create overviews in the portal for people to have a good overview of their orders and what needs to get more attention. So, for example, if you haven't had an update of a repair for a long time, you can monitor that in the portal, internally."*

The information employees see should be more personalized. Everyone sees the same in the current situation and everyone has their own cases and data they want to see:

> *"So that you also get a hierarchy of information that you can see. The information I want or that someone else wants to see is different than what, for example, the CCC Engineers or Sales Support wants to see. More personalized. And also have more insight into the priorities, so what is my priority and how do I ensure that I do my work correctly?"*

Miscellaneous functionalities

Finally, some other problems regarding the quality of information in the customer portal arose from the interviews. First, respondent 7 (CCC Engineer) pointed out that within the customer portal, you can only send plain text. It lacks the function of adding graphs, images and tables, which can come in use when making something clear for a customer. This respondent compares the portal to a chat service, like Twitter:

> *''The portal is really just plain text that you can send with some pictures. However, Jira is a very simple tool, with which you can also make all kinds of tables and a lot of colours, and bold text, which makes it visually much clearer. I see the customer portal a bit like Twitter, it's just a bit of text that you send back and forth and you can't put all the information you want in it."*

Respondent 8 (CCC Engineer) also has a suggestion for a similar problem. He indicates the lack of a very practical tool within the customer portal when communicating with customers/employees:

> *“If you look at different other web portals, you can sometimes just drag files to your case and they will be pasted there immediately.”*

Another problem that several respondents pointed out is that when you sent a message to another employee of another department using the customer portal, that other employee doesn’t get a notification of that message. In that case, the whole process stops. This shouldn’t be a very hard thing to fix technically.

> *Respondent 6 (Sales Support): "Because if you register something there in that task so they can find out and they don't get a notification about it, you see that the process stops."*

> *Respondent 9 (Sales Support): ''I have tried once by responding in the portal, only then you have the problem that they do not see a notification. Which makes it difficult.”*

Consistency/clarity

The last parameters are consistency and clarity. A common problem within the customer portal is that every employee has their own way of logging information. What information do you provide and how do you write it down? However, what someone thinks is very clear, can be found unclear by his colleague. This creates problems when an employee has to take over someone else’s task. Different respondents explain how this applies to their job:

Respondent 8 (CCC Engineer): "Of course, everyone has their own way of presenting information clearly for themselves. And what I find clear to myself, may not be clear to someone else and vice versa."

Respondent 5 (CCC Engineer): ''That consistency is mainly a thing on the internal side. You can see there that the work instructions can be perceived very differently among different employees; what exactly are the fields for? When it comes to how you fill in the fields, there is still quite a bit of room for improvement in it."

Respondent 1 (Strategic): ''When is a request properly registered? When can we continue to the next status update? And not just filling in boxes, but how do I make it process-dependent instead of person-dependent. You now see that people use it as their own notebook, but that it is not yet understandable for someone else. So, for example, if a CCC Engineer goes on vacation, the request is suspended. While you would actually like another CCC Engineer to be able to take over his work, and also that the information contained within the CCC is also understandable for the other departments the CCC needs to handle a request.''

Respondent 1 (strategic) indicates that there are plans for instructions. However, they are limited to very basic instructions. This respondent explains that these instructions are not sufficient and should be more extensive and clear:

Respondent 1 (Strategic): ''For the ''short description'' or ''description'' field, you still don't know what to enter there. You have to know what the criteria are for filling in those fields."

Respondent 5 (CCC Engineer) suggests the use of 'best practices' to educate employees and increase awareness on this matter:

"It would be a good idea to start working with a best practice that people develop together. There, we will look at cases together to see how well I can follow what you write there. If you discuss this together, a kind of joint opinion will also arise about how to implement it consistently. (…) I think it is especially important that people develop a kind of awareness so we will improve that. It's all still relatively new and people have to get used to it. It has to become a way of life that you fill it in in a certain way, that's something I now strive for."

Standardized forms

To tackle this problem of inconsistency and also the beforementioned problem of incompleteness, standardized forms should be made which are clear and extensive. At the

moment, there are such forms, but often not extensive enough as said before. Respondent 4 also recognizes this problem: *"Those forms do exist but at a basic level. There are work instructions, but they are rather short documents. It doesn't say very specifically what to do."* It is clear that these forms should be improved and contain more clear instructions about what to fill in and what information is needed.

A second problem with the existing forms is explained by respondent 9 (Sales Support). He argues that the forms are not in line with the process. If a customer has a whole range of parts included in the request, he must fill in the form for every part. In many cases, this is not done by the customer which is quite understandable. This respondent works with Excel to handle request with this many parts and suggest a standardized Excel form for customers as well. Even better would it be if such a form can be integrated into the portal itself. However, at this moment, customers have to fill in a form many times for all parts if they want to do it right.

> *''And if you can't get the customers into the portal, then you should indeed have a standard Excel form that connects to the portal. So that you also use the same formulation and the same structure."*

What can be concluded is that the customer portal is not optimized and exploited fully yet. More integration is needed on three different levels. Because this is not yet done, the portal doesn't connect with the processes it is designed for yet. Furthermore, there is a lack of standardization regarding the Content of the information communicated. Employees use their own way of logging information which makes it inconsistent and not always clear for everyone. The findings of the 'Content' part are summarized in the table below:

Dimension	***Parameter***	***Points of improvement***

	Efficiency	• Lack of integration with customer portal on three levels:
		  ○ Internal stakeholders → Integration of Engineers, repairshop.
		  ○ Software → Integration of Oracle, Windchill.
		  ○ Customers → Raise awareness among customers and persuade them to join the customer portal.
		  ▪ ''Customer Experience Room''

Content	Correctness/free of error/completeness	• Wrong/incomplete information from customers. → Standardized form, more clear and extensive.
		• Better dashboards needed for both:
		  ○ Employees → More personalised information about cases and performance.
		  ○ Customers → Seeing status updates in one eye.
		• Only plain text can be sent in the portal. → Integrate the possibility of using images, graphs and tables.
		• Lack of notifications when employee sends message through the portal to other departments.

	Consistency/clarity	• Communication is person-dependent instead of process-dependent, everyone uses his own way of logging information. → More standardisation needed: ○ Standardized, clear and extensive forms.

Table 11: Summary of results from dimension Content

Results – Workshop

Based on the findings in the follow-up interviews, a workshop was held with the staff of the CCC about communication quality. First, concrete solutions for problems and deficiencies found in the interviews were discussed for each of the three dimensions. Secondly, priorities were made. Which problem deserves the most immediate attention and which problems are more for the long term? This falls under the 'plan/design' phase of the regulative model of Van Strien (1997).

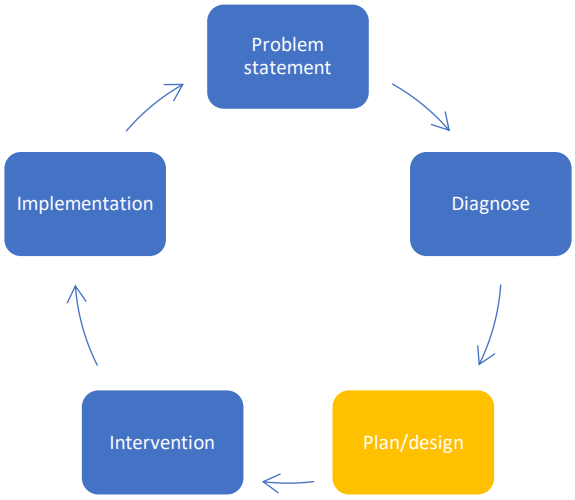

Figure 8: The current phase in the regulative cycle.

Time

To improve the parameters regarding the dimension Time, several suggestions were made by the staff of the CCC to achieve this. Many of the ideas mentioned during the workshop are confirming the ideas of the individual respondents during the interviews. Other suggestions were complementary to the ones from the interviews.

First, the idea of communication training was suggested in the workshop for several reasons. It helps raise awareness of the importance of a consequent response time and it can train employees in delivering bad news to the customer. In addition to this, it was suggested to implement reminders in the customer portal which can help to remind the employees to notify the customer in case it is forgotten. Finally, there should be more protocols on desired response times and frequency so it is clear what is expected from the employees. Creating policies for communication with the customer was suggested. For example, send the customer three notifications, if there is still no response, close the case. To find out what is exactly desired, the staff suggested asking the customers themselves what they are expecting from Thales.

Style

Regarding Style, there were several suggestions made by the staff as well. Again, a communication training was an important suggestion made by several employees. In this case, the training serves several goals. First, it can help to improve the empathy of the employees towards the customers which is now sometimes lacking. Secondly, it can help employees to deal with other different cultures. It was suggested to implement a 'culture training' of some kind more prominently in the on-boarding process for new employees. Part of this process should also be the chance to improve one's English skills. To ensure the professionality of the communication towards customers, it was suggested to compose a guideline for professional communication. Templates or formats could help envision this.

Content

For the last dimension, Content, several suggestions were made. The staff suggested that there should be more clear and more extensive protocols for the way information is logged. Templates and forms should be used more and be more clear and more extensive. Furthermore, the quality of information should be checked more often. A second point which was frequently mentioned was the use of dashboards. It was suggested to involve the customer more in designing the dashboards for them to ensure that it fits their needs perfectly. For the dashboards internally, it was suggested to provide training for employees on how to make personalized dashboards. Finally, training in the use of the customer portal can be provided more extensively with the onboard training to increase the knowledge of the portal among the employees. Employees were not always aware of the possibilities of the portal and training can be helpful in fully exploiting the customer portal.

Priorities

The second goal of the workshop was to distinguish the points of improvement between short-term goals, medium-term goals and long-term goals. The most important parameter which determines the scope of the solution according to the staff is the feasibility. Solutions which are relatively easy and fast to implement can be achieved in the short term and solutions which are way more complex and need more resources can be better focused on for the long term. The suggestions which have high priority and are easily implementable are extending the on-board training with cultural training, English training and a customer portal training. Creating better dashboards and more extensive templates was suggested to be more suited for the medium term because there is more involvement needed with customers to figure out what their needs are. To make the internal communication more efficient by improving the internal response

times, resources have to increase to keep up with the demand. This requires more staff which also needs to be trained and therefore, this is a long-term solution.

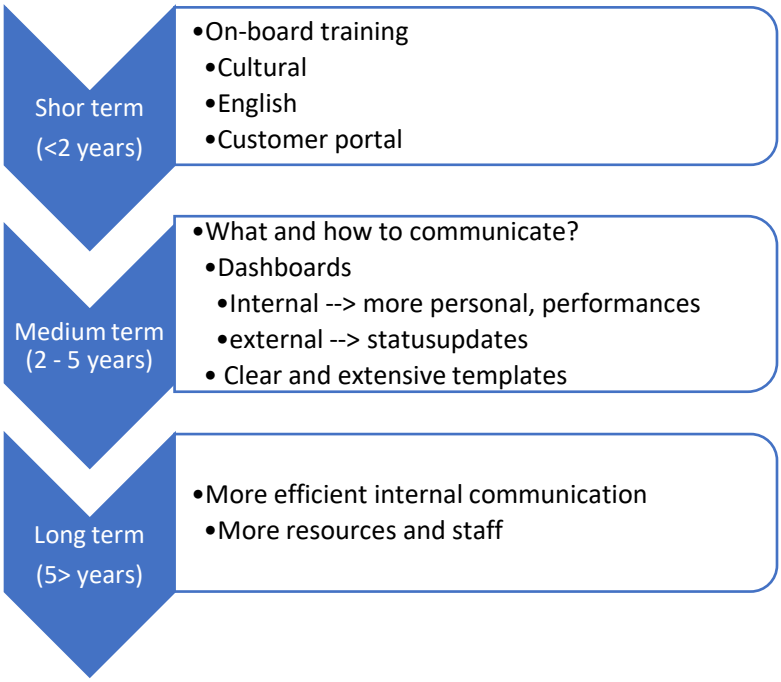

Figure 9: Recommendations for the short-, medium- and long-term.

Discussion

In this final chapter of this research, the theoretical and practical implications are stated. Furthermore, limitations and directions for further research are discussed. Finally, an overall conclusion of the research is stated.

Implications

Theoretical

This research has several implications both on the theoretical and practical levels. Regarding the theoretical implications, a few points can be made. First, most of the research on communication in a business context focuses on a b2c context. Thales operates mostly in a b2b and b2g context. This study adds to the current research by analysing how communication can be improved in a context where customers consist of governments and businesses. Secondly, as can be read in the theoretical framework, many scholars emphasize the lack of research on communication in a business environment, the internal communication. Hargie & Tourish (1993) emphasized the lack of ''hard empirical research into the nature, flow and functions of communication within organisations.'' More recently, Kalla (2005) talks about the ''imbalance between the importance of internal communication and the actual attention and resources given toward it.'' This research adds to current research by giving more insights into the way a business could improve its internal communication.

Furthermore, the benefits of good communication both internal and external were discussed in the theoretical framework. This research confirmed most of the found benefits of good communication. For example, Hargie & Tourish (1993) connected good internal communication with more efficiency. Results from this research confirmed that a lot can be improved regarding efficiency in a communication context. A second example comes from Kalla (2005) and Parker, Axtell & Turner (2001), who connected good communication with an open and secure atmosphere. Results from the 'Style' dimension confirmed that a good way of communicating informally improves the working atmosphere. Also, a professional way of communicating with the customers adds to a secure environment and a good relationship with customers, which is the result of a good way of communicating according to Dirsmith & Covaleski (1983), Nienaber & Schewe (2011) and Frow (2005). Ultimately, the goal of this research is to improve the quality of services which is something Clampitt & Downs (1993) argues to be the result of good communication.

Lastly, this research contributed to literature by offering an extensive framework of the concept of communication quality in a business context. An analysis of the concept of communication quality within a business context consisting of the most prominent papers in this field was conducted. This research provided the current literature with a summary of all parameters of

communication quality divided into three main dimensions. In this way, a new conceptual model was created of the parameters of communication quality and the results of good communication within businesses, both internal and external.

Practical

The aim of this study was to provide Thales with recommendations for improving their communication both internal and external. The from theory derived benefits of good communication were confirmed by the results, as mentioned before. However, how are the found recommendations and those benefits connected? The practical implications of the recommendations are discussed below. Managing these recommendations from a best practice perspective could be useful. Zairi (2000) argues that customer focus in a best practice context signals that *''the organization is willing to challenge the status quo and embrace new concepts and management disciplines.''* They suggest creating new systems, procedures and guidelines to achieve this. Gliedman (2005) did extensive research on service desks and composed a list of best practices that confirm the recommendations found in this research.

There were several suggestions made by the staff during the interviews and the workshop to improve communication regarding the dimension Time. Some of the actions that need to take place are to standardize the protocols and increase awareness. All employees seem to have their own set of rules regarding their response time and frequency of communication with their customers. To take care of this problem, better guidelines should be established to help the staff maintain a more standardized communication strategy. Think about clear protocols and templates. A distinction could be made between the low- moderate- and high-controversial inquiries in which each kind of problem is given a certain timeframe in which it should be solved. For example, a low-controversial inquiry such as a question about a common spare part should be taken care of within 2 working days. The suggestion of reminders was made to help the employees remind when a new update is needed. This is in line with several best practices stated by Gliedman (2005). For example: ''Provide timely updates''. He argues that it is easier to cut back on communications than it is to repair the damage of an out-of-touch service desk. A second-best practice which is a part of the first is: ''Set user expectations at every contact.'' It is important to let customers know what to expect; how long will it take to get a solution or a status update? Being transparent to the customer will help increase their understanding.
Improving this will lead to several of the benefits which are derived from literature. It will lead to more efficiency in communication (Hargie & Tourish, 1993), and more productivity because of the higher level of efficiency (Argyle, 2001; Schweiger & Denisi, 1991; Semler, 1989). This will subsequently lead to lower costs (Clampitt & Downs, 1993). Furthermore, a better standardized response time and frequency improves the overall quality of services (Clampitt & Downs (1993)

and increase the relationship with the customers (Dirsmith & Covaleski, 1983; Nienaber & Schewe, 2011; Frow, 2005).

Second, Thales should take cultural differences into account. Thales is an international company with a broad set of customers all around the world. Norms and values differ per region, or sometimes even per country. An important best practice in this matter is: ''Know thy customer'' (Gliedman, 2005).
A framework which can be used to address those cultural differences is Hofstede's cultural dimensions theory (Hofstede, 2011). This model became a paradigm for comparing cultures and can help classify cultures on six different dimensions. For example, one of the dimensions is power distance. In these dimensions, the level of hierarchy is very important; what is the relationship between subordinates and managers? In the Netherlands, there is a small power distance. However, this can of course differ between cultures. Other dimensions of the model are uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, long-term versus short-term orientation and indulgence versus restraint. Using this model to better explain other cultures, can help employees understand and deal with them better.
Thales has some customers in Asia, which will require a different approach than customers in Europe. For example, Dunmark (2005) argue that Japanese people are not people of conflict but are always looking for consensus and that they are very concerned about not losing face. When negotiating contracts or deliveries, employees must take this cultural aspect into account. Also within the western culture, significant differences can be found. Americans prefer a low power distance with a low level of hierarchy, while the French prefer a strong hierarchy with clear orders in a clear chain of command (Dunmark, 2005). Being more direct and formal to French customers and more friendly and informal to American customers could help improve the relationship with them. Dunmark (2005) suggests that, especially if both parties aim to work together for a longer period, to mutually adjust the communication strategy. Shao & Skarlicki (2014) distinguishes three characteristics of intercultural communication competency which should be paid attention to: cultural awareness (predicting the effects of behaviour and ability to modify it), cultural sensitivity (open-mindedness, non-judgmental attitudes to become sensitive to the verbal and non-verbal cues of people from other cultures) and cultural adroitness (knowing how to act when in contact with other cultures). Training these characteristics of employees after the different cultures are grouped using Hofstede's model could enhance the communication strategy of Thales regarding different cultures.
However, it is always better to meet customers from other cultures in person because, in that way, it is easier to form personal relationships, which will lead to better communication and less misunderstanding and conflicts according to Mäkilouko (2004).
Employees indicated that there is not enough attention paid to those differences. They must learn by themselves how to communicate appropriately with customers from all over the world.

Thales can present itself better to international customers when it can adapt better to all of those cultural differences. Tang & Todo (2013) argue that ''Training and development'' is important best practice in a service desk context. Training must be provided that the staff requires to acquire and maintain the skills needed. Fiedler, Mitchell & Triandis (1971) suggests the use of so-called 'Culture assimilators', a ''programmed learning experience designed to expose members of one culture to some of the basic concepts, attituded, role perceptions, customs and values of another culture''. They suggest using scenarios in which a conflict between different cultures is going on and then let the participant of the training choose between different responses on how to handle that conflict. One response is seen as the most appropriate one, while the others are ethnocentric errors. For all the four answers, feedback should be given on why the response is appropriate/inappropriate so the participant learns more about the culture. This training could be given in the form of a workshop to the staff of the CCC.
This will subsequently lead to some benefits, such as a higher quality of services (Clampitt & Downs (1993) and a better relationship with the customers (Dirsmith & Covaleski, 1983; Nienaber & Schewe, 2011; Frow, 2005).

The same general problem arises with the last dimension, Content. More standardization and a higher awareness should become the norm. From the interviews and the workshop arose several suggestions to improve the communication process in this content context. Better templates were suggested several times. These should be more elaborate and clear so employees and customers know what to fill in. The result of this is that the communication process becomes more process-dependent instead of person-dependent. A more standardized way of logging information makes sure everyone understands the data better so anyone could take over one's tasks at any time. This will lead to higher efficiency (Hargie & Tourish, 1993) and more productivity (Argyle, 2001; Schweiger & Denisi, 1991; Semler, 1989).
More personalization could be achieved by more personalized dashboards for both employees and customers. By doing this, the ordering process for customers becomes way more transparent. They could see the status of their question or order in one eye and other relevant information on their dashboard. For employees, it could give more insights into relevant information about their cases and their performances. Think about seeing their average response time and seeing their ongoing cases and their status in one eye. ''Use analytics'' is one of the best practices of Gliedman (2005). He suggests using robust tools to analyze incident data and use that data to turn it into information. Tang & Todo (2013) agree with this statement and names ''Data collection, analysis and action'' as one of their best practices to optimize the service desk. They argue that service desks must ''have a process to collect, analyze, and use performance data to achieve its customer satisfaction, service, quality, cost, and employee performance targets.'' Collecting more and more data with each request or problem could help Thales establish a system which could predict future malfunctions and errors in their problems, which is called machine

learning. Connect this to the dashboards of employees and they could take action even before the problem occurs and save the customer time and money.
Also, awareness about the goals of the customer portal should be raised. What is the long term goal of the portal? Should it be a communication tool or an IT tool? There is an obvious need for more integration of the different tools within Thales. Gliedman's (2005) best practice ''Buy, don't build'' is about using the right software which is, according to Gliedman, often commercial software because it is designed to integrate with other software. A smoother integration between the customer portal and Oracle is highly demanded by the staff. However, is the customer portal the right tool to implement or integrate with those other tools? Different opinions among staff exist about the vision of the portal. Thales should determine what the main goals of the customer portal are and how it sees the portal in ten years.

Limitations and further research

There are some possible limitations in this study. Some of those limitations have to do with the methods of data collection. Regarding the quantitative part of the study, the questionnaire, the scales used could have fitted better with the measured parameters. When measured, for example, if communication is on time, the standard 5-point Likert scale was used (1: totally disagree – 5: totally agree). It would have made more sense to use a scale that better fitted the statement, for example: 1: never, 2: mostly not, 3: sometimes, 4: mostly yes and 5: always. In the case communication was sometimes on time, it was not entirely clear for all respondents if they had to fill in agree or disagree.

Second, the sample size used for the quantitative part of the study was rather small. It consisted of 10 respondents evenly distributed among CCC Engineers and Sales Support. A small sample like this results in less statistical power and less reliable results. However, the results of the quantitative study were used only for measuring the perceived rating of the communication quality parameters and not for complex statistical analysis.

Third, there was a lack of research on the topic of internal communication. Hargie & Tourish (1993), Kalla (2005) and Versic et al. (2012) pointed out that the academic research on this topic has been scarce and that there should be paid more attention to it. The lack of research made it more difficult to come up with a solid theoretical framework regarding the internal part of communication. However, this research provides a valuable application of the current literature on an internal communication context.

Finally, this study is limited to providing Thales with recommendations on how to improve their communication on different levels. How these recommendations should be implemented is not included in this research due to time and feasibility constraints. Future research could focus on

this more. For example, more IT-focused research which deals more with technical implementation issues.

Conclusion

The goal of this study was to provide Thales with recommendations on how to improve its internal and external communication. The quantitative part of the study showed that the communication quality in all three dimensions; Time, Style and Content, had room for improvement. A more in-depth analysis of the problem and possible solutions was conducted with follow-up interviews and a workshop. What the common denominator is in all three dimensions of communication quality is that there is a lack of standardization. Employees make up their own set of rules and have to learn certain skills by themselves. When do they need to communicate and how much and how fast? How to deal with other cultures? What to fill in on the forms? It is all rather arbitrary and better guidelines should be in place. Also, there should be paid attention to raising awareness about these issues so that the need to improve becomes more clear among the staff.

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