CHALMERS

A framework for a customer interactive delivery process
-The case of Medius

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Abstract

This master thesis uses an abductive research approach to develop a framework for creating a delivery process for IT solution providers in general and for Medius AB in particular. A delivery process, in this context, is the process of implementing the provided IT solution with the customer. The theoretical frame of reference used to create the framework is based on two pillars: The Context of IT-projects, with sub-pillars Project Business and Customer Relationship, and Delivery Process, with sub-pillars Customer Satisfaction and Customer Profitability. For a better understanding of the delivery process, the framework is split into three chronological parts: before-, during- and after phases as these are the basic time phases all projects go through. These three time phases paired with the concepts of Customer Satisfaction and Profitability formed the framework for creating a delivery process. Empirical data has been gathered through interviews with Medius employees and customers with the intention of finding out what is important to consider in each of these three phases. The framework was then completed in the analysis chapter by inserting the inputs from theory and empirical data in accordance to the abductive research method. Thus, a populated framework for creating a delivery process was established. Furthermore, the empirical findings were also portrayed in the form of a SWOT analysis to highlight potentials for improvement of Medius AB's current delivery process. Project based IT companies, like Medius, work in an evolving and interesting business climate. Competition is tough and it is becoming more and more important to differentiate your products and processes from your competitors' to gain and maintain customers. The delivery process thus has a great impact on how the customers perceive the IT supplier.

Keywords: Delivery Process, IT solution provider, Customer Satisfaction, Profitability, Project Business, Customer Relationship.

Author's remark

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1. Introduction

This chapter will give an introduction to this master thesis, starting with a background to the issue. After that, the purpose, problem analysis and scope will be presented and the chapter will end with an outline of the rest of the report.

1.1.   Background

Medius is a project-based IT solution provider of Business Solutions for simplifying and automating business processes, particularly in the field of Purchase-to-Pay and Accounts Payable Automation Software Solutions, using their own IT-platform *Mediusflow* (Medius AB, 2012). After no more than a decade after its foundation in late 2001, Medius has expanded from a two-man operation into a company spanning four continents offering a wide range of software for simplifying and automating business processes. Up until now Medius has focused primarily on expansion, both in terms of new sales and an enlarged product portfolio. Consequently, headcount has increased and Medius is now facing a situation where there is a need for standardised work within the organization to ensure a high and uniform level of quality in delivering IT solutions to their customers. Medius will shortly release a new IT solution called *Mediusflow 11.0*, which will be quite revolutionary compared to previous solutions and the effort to secure a high performing delivery is planned to coincide with this release.

The main feature of Mediusflow is an electronic invoice-handling solution, which can have an important impact on their customers' administrative processes. Although Medius is not the only provider of this kind of solution, it is still a relatively new feature on the market and it is believed to have a great market potential. Considering that Medius is an innovative company, working with IT solutions in a project based manner they are well in line with the authors of this reports' studies and interests. The authors have taken a special interest for the delivery process of IT solutions in general and Medius was therefore also chosen and used as a case company for developing a general framework that evaluates and presents important aspects to take into account in relation to a delivery process.

The authors in collaboration with Medius have defined two important areas in relation to a delivery process: customer satisfaction and profitability. In a study on marketing by Farris et al. (2010), customer satisfaction is found to be the most important non-financial metric to evaluate. Regarding profitability, Medius stated that this should be an area because they need to assure that they are a profitable company. Furthermore, these areas were believed to include important aspects both from the seller's point of view as from the buyer's. These two areas are furthermore interrelated as they can have an impact on each other's magnitude, where an improvement in one might lower the other and vice versa. This relationship is illustrated in Figure 1.
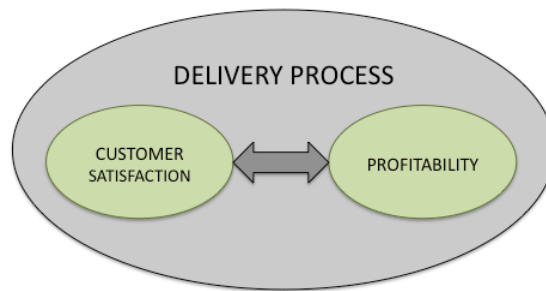
Figure 1 - Components of a delivery process

Customer satisfaction is argued by Farris et al. (2010) to be dependent on what the customers expected to get and what they perceive they have gotten. Customer satisfaction is considered as one of the most important metrics to fulfil for Medius, as that generates a good reputation on the market and faithful customers. The overall customer satisfaction can relate to every or any interaction with the supplier and it is therefore important to define which aspects are generally affecting the customer's perception of the supplier and its products. In Medius case, or any other IT solution provider for that matter, this could thus relate to for example customer interaction, technology, service, organisation and many other topics.

A simple definition of customer profitability is to measure how much a customer contributes to profit. However there are many ways to measure profitability, e.g. over time, where future potential or other positive effects a customer may have on the company are taken into account. Thus customer profitability depends on when and how it is measured McNab (2006). This means also that there can be different business models in different projects, not always aiming at maximise profit and that sometimes even depart from the company's overall business model, depending on the goals a particular project is set out to achieve. Wikström et al. (2010) identify a number of project business models aimed at creating, for example, flexibility, customer involvement, growth and greater value proposition and thus sometimes leave profitability as a secondary objective. However a company cannot continue to exist if the total profitability is not satisfactory over time and resources must therefore accurately be dedicated to different projects. Medius, as well as their customers, are constantly questioning and evaluating the resource allocation to each individual project and there is a need to understand and define the resource allocation in relation to the goals that each project is set out to achieve.

The term Project Business has received much attention lately, especially as many companies today choose to work project based. The common understanding of a *project* in management literature is to define it as a way to fulfil strategic objectives for the organisation. However the *business* context has received less recognition in management approaches over the years, despite its strong relation to for instance strategy, business cycles and R&D. Artto and Wikström (2005) defines project business as:

> *"Project business is the part of business that relates directly or indirectly to projects, with a purpose to achieve objectives of a firm or several firms."* (Artto & Wikström, 2005, p. 351)

Several authors (Samli et al., 1992; Artto et al., 2008; Helander & Möller, 2006) discuss the importance of taking a wider perspective of a delivery process or a project and they separate activities into three different areas: *pre-sale activities*, *sale/implementation*

activities and *post-sale/long-term activities*. These stages thus refer to activities taking place in the time phases before, during and after the project. Also in Medius case it is understood as important to take this wider perspective to assure a successful outcome of the project as a whole and to establish long-term relationships with the customers. Furthermore the review of time phases has an academic value as they are rarely evaluated in a general sense for IT solutions in particular.

Laesvirta and Ribière (2008) present a case study based on a three-year study of a growing IT solution provider with global presence, not unlike Medius, where a lack of knowledge sharing between projects created difficulties for the company. By establishing a well-defined *knowledge management* strategy, which is aligned with the overall corporate strategy, the company could progress further. This case study is similar to what is happening at Medius and further emphasises the importance of a well-functioning delivery process already at an early stage of a company's life cycle. Zollo and Winter (2002) identify three learning processes: *experience accumulation*, *knowledge articulation* and *knowledge codification* and argue that the effectiveness of these learning processes depends on the task characteristics and the firms' willingness to learn. Medius has come far in individual gathering of experiences over the years and sharing them casually within the company, however they might need to formulate them in an explicit way that can easily be transferred throughout the organisation or to new employees.

Sadtler (2007) argues that many big companies, after experiencing a life-cycle phase of increasing economies of scales, often lose the flexibility in administration, which smaller companies have. In some businesses, maintaining the small company's flexibility is important although the need for a more uniform way of working still needs to be adhered to. Thus, establishing a well-functioning work method already in an early stage of a company's life-cycle could increase performance in the future. Reversely, a poorly formulated work method early in the life-cycle could be more difficult to change in the future as it becomes deeply rooted within the organization. Medius is today in a situation of expansion on their mature markets and they are also continuously opening up new markets. They acknowledge that there could be great possibilities in achieving economies of scale in certain processes, however as every project is unique they still need to maintain a high level of flexibility.

Finally, Medius states that although their product, Mediusflow, has had a technological advantage for a long time, competitors are closing in and Medius want to differentiate themselves in order to obtain and hold market shares. As the technological advantage shrinks and the possibility for premium pricing diminishes, being able to differentiate itself through superior customer satisfaction and customer profitability will be increasingly important to Medius. Improving the delivery process will be a way of staying ahead in the fierce fight for future business.

1.2.   Purpose of Thesis

The purpose of this Master Thesis is to aid Medius in improving their delivery process of Medius' business process IT solution, *Mediusflow,* to their customers. The goal is to make Medius' delivery process adherent to values and preferences to achieve a high customer satisfaction without jeopardizing sustainable profitability.

The Master Thesis is also set out to contribute with a general framework that discusses important aspects to take into account for project-based IT solution providers

while setting up a delivery process. This part focuses on the time phases before, during and after a project and their relation to each other.

1.3.   Problem analysis and research questions

Medius has presented the authors of this report with a problem; to evaluate their delivery process and present improvement possibilities. To do so, *Customer Satisfaction* and *Profitability* were considered as two main areas to explore. In order to develop and secure a successful fulfilment of these dimensions in a way that will enable Medius to experience a sustainable growth and secure a wide customer base in the future it was also understood that a wider perspective would have to be applied. One that considers not just Medius situation, but also takes into account project based IT companies in general. Thus, three sub-problems were defined:

- The first aspect is to find out how to define Customer Satisfaction and Profitability for Medius and relate that to theory as well as the views of their customers.
- Customer satisfaction could in a longer-term perspective generate faithful customers that continue to purchase from Medius also in the future. Therefore a sub-problem to analyse will be to look at aspects that satisfy customers in the short-term as well as encourage them to continuously turn to Medius for future solutions.
- Profitability is an objective that many times has to be compared with and tampered with to also fulfil other objectives of a project. However, an interesting question that has emerged is to find out how companies providing IT solutions can take a view on profitability in relation to other objectives.

1.4.   Scope & limitations

This Master Thesis will be limited to the delivery process of *Mediusflow*. Other Medius products, such as ERP systems, are disregarded. The reason why is because the Gothenburg office, with which this master thesis is written, does not provide this service.

Focus will be on the *project phase*, however, the three activities *sales process*, *after-sales* and *support* will also be considered. Furthermore this report will explicitly focus on the delivery process to Medius' business segments "Professional" and "Enterprise", not to the smaller segment, "small business". The reason for this is because Medius is interested in investigating this.

As the Master Thesis is carried out in Gothenburg the results primarily reflects the situation and the customers treated from this area. This report might therefore not be representative for the whole Medius group, although it could be useful under similar circumstances.

1.5.   Outline of the report

Frame of reference – In the frame of reference the findings from the literature study will be presented. The two pillars of the frame of reference are the context of IT-projects and delivery process. These two pillars give a solid base on which to base further literature research. The context of IT-projects contains the necessary bits and pieces for understanding what separates project business from *normal* business and also a look on customer relationship. The second pillar, delivery process, contains the two main areas of

interest of this master thesis: customer satisfaction and customer profitability. The two pillars of the frame of reference are combined to form the framework for creating a delivery process. The framework is at this stage "blank" and only contains the structure and the parameters that will be explored. The framework will be populated in the analysis chapter, using the data from the empirical findings.

Method – The method used is an abductive approach that matches theory and empirical findings to populate the framework. The method is described in chapter 4 along with how the data was collected, how the analysis was performed and a reflection on the study's quality and reliability.

Empirical findings – This chapter begins with a short description of Medius and Mediusflow. However, the major part of this chapter describes the current delivery process and the empirical gatherings from interviews with Medius employees and customers.

Analysis – This chapter combines the empirical findings with the frame of reference, thus enabling population of the framework. The chapter is split into the corresponding time phases of the framework, namely Before, During and After. The whole chapter is to be considered a populated framework and the two pictures concluding the chapter are summaries of the customer satisfaction and profitability aspects of the findings in the chapter. The chapter is concluded by explicitly answering the research questions.

Discussion – This chapter presents a SWOT analysis to highlight potential improvements and influencing surrounding factors for Medius.

Conclusions – This chapter gives concluding remarks taking into account the aim of the paper. Furthermore the value of the study is discussed and finally further research suggestions are presented.

Recommendations – This chapter contains the recommendations to Medius, based on the resulting framework.

2. Frame of reference

This chapter presents and explores relevant theory that will be used throughout the report and from which a framework for creating a delivery process is derived. The chapter consists of three sections where the first two, the context of IT projects and delivery process, lead up to the formation of the third, i.e. the framework for creating a delivery process. The framework is after this chapter "blank" and empirical data will be gathered partly with the purpose of populating the framework in the analysis.

2.1. The context of IT-projects

This section provides an overview of the context in which IT-projects are carried out as well as a backdrop to the concept itself. First, the different aspects of project business are introduced, along with some of the aspects of IT-projects and why they differ from *normal* projects. Secondly, an overview of the concept Customer Relationships is introduced.

2.1.1. Project business

The first aspect of *The context of IT-projects* is the concept Project Business. The common understanding of a *project* in management literature is to define it as a way to fulfil strategic objectives for an organisation. However the *business* context has received less recognition in management approaches over the years, despite its strong relation to for instance strategy, business cycle and R&D (Artto & Wikström, 2005). *Project business* can be viewed from different perspectives depending on the situation, the company and the industry. A study by Artto and Wikström (2005) of references to academic literature identifies eleven clusters with key sources related to project business, see Table 1. Furthermore they present seven key findings and their implications on a scientific- and managerial level respectively. Finally three main concepts: *part of business*, *objectives* and *firm*, to which the findings can be related, are considered as the most important concepts in their definition of project business:

> *"Project business is the part of business that relates directly or indirectly to projects, with a purpose to achieve objectives of a firm or several firms."* (Artto & Wikström, 2005, p. 351)

Table 1 - Article clusters for key resources (Adapted from Artto & Wikström, 2005, p. 347)

AREA	*CLUSTER TITLE*
Process	Product development success and process Accelerating new product development Manufacturing performance, and development in industry Organising for R&D and comprehensive management approaches Multi-project management

Organisation	Organisation theory and organisational design Organisational knowledge accumulation, transfer and learning Marketing-R&D interface Inter-organisational collaboration
Technological and sociological change	Sociological and psychometric theories, and theory building Technological and economic change

The first five clusters in Table 1 consider processes and activities within or in-between companies. The topics in this area relate to factors that can enhance successful management of new product development, shorten the product development cycle and measure product development strategies. Furthermore they represent the link between strategy and development as well as present management of quantitative decision-making of multi-projects within R&D as an important aspect (Artto & Wikström, 2005). The second area, *organisation*, considers organisations as information processing networks, where there is no single best structure. Focus should instead be on continuously assuring a fit between the organisation and its environment. Information systems and information flow as well as knowledge development and knowledge transfer are strongly related to organisations and inter-organisational activities (Artto & Wikström, 2005). The area *technological and sociological change* argues for an individual adaptation of relationships to the firms' requirements on a technical and commercial level (Artto & Wikström, 2005). The seven key findings are presented below in Table 2:

Table 2 - Findings from the analysis of key sources (Adapted from Artto & Wikström, 2005, p. 350)

FINDING	*SCIENTIFIC IMPLICATION*	*MANAGERIAL IMPLICATION*
The dominant role of R&D	Innovation management is an important theoretical body of knowledge	Empirical application of projects in business may be focused on business renewal
No operations management content	The discussion and theoretical views on projects as manufacturing devices in scarce in the most cited academic articles	It can be that management of delivery projects in business is not an extensive application area in industry
Scarce representation of strategy research	The existing strategy research does not contribute to project business. In the future, there may be a need for a stronger body of strategy research	However, strategy and strategic management are important in practical applications
Environmental-dependent approaches	Project management body of knowledge represents too rigid and narrow closed system view, and therefore it does not emphasise the management of business in relation to its environment	There is a need to match the management approach to the environment. Furthermore, flexible and adaptive approaches have an important role. This enhances the management of business rather than management of mere projects
Need for several theoretical foundations	Organisation theory, innovation theories, sociological and psychometric theories are important for further theory building	The empirical phenomenon is complex. The understanding of the phenomenon requires cross-disciplinary views
The firm from organisation theory viewpoint	Organisation theory provides a strong theoretical foundation for understanding activities of a firm that uses projects for achieving its business objectives. The unit of analysis is a firm rather than a project	The firm and its business are in a focal role, while projects may be secondary
Inter-organisational collaboration	Management of networks, contacts, information and knowledge are relevant issues for theoretical considerations	Business networks and inter-organisational collaboration between projects and firms are important

Cova and Holstius (1993) discuss project business from a marketing perspective and define projects in a transaction-production matrix as a low unit production with high transaction complexity. This is quite the opposite to for example mass production of consumer goods, with low transaction complexity.

Cova and Holstius (1993) furthermore describe the project cycle in different stages, both from the seller's perspective as well as from the buyer's perspective. The sellers' stages of activities range from searching for project opportunities, through preparation, bidding and negotiation until the final implementation and is then concluded by a transition phase, where the project is evaluated and knowledge and experiences are accumulated. The buyers' stages are more numerous as they include research on different suppliers and analysis of their offers. Other phases are need-awareness, negotiation and final selection leading forward the contract.

Another way to structure the different time frames of a project is presented by Artto et al. (2008). At the highest level in his illustration a project can be divided into the time frames: *before the project*, *during the project* and *after the project*, which will be elaborated further under heading 2.1.1.3.

2.1.1.1.   Competitive advantage in project business

From the project supplier's perspective competitive advantage concerns the ability to combine and develop products and services that provide new opportunities and superiority on new or existing markets. Cova and Holstius (1993) identify three key success factors in project business: *administrative effectiveness, entrepreneurial culture and personnel readiness*.

Administrative effectiveness – Meaning that the organisation must be ready for a project business strategy and should assure in-house expert competence and experience with project financing.

Entrepreneurial culture – For successful projects the company culture should encourage *intrepreneuring*, i.e. company internal entrepreneurship and innovation. This factor furthermore includes risk management as a closely related concept to entrepreneurship.

Personnel readiness – Marketing personnel and other employees participating in project marketing should develop negotiation and communication skills to engage with the customers.

The study by Cova and Holstius (1993) point out two major characteristics in project marketing: the *buyer/seller interaction* at different time phases in the project and the *overlapping of corporate functions* in the project marketing process. Starting with the latter characteristic it means that project business puts less emphasis on the distinct functions of the firm and they are instead considered to overlap each other. This shows that the success factor in project business is related to the combined functions of the firm rather than their individual performance. This overlap of corporate functions is further demonstrated in Cova and Holstius' (1993) illustration of the project winning triad, shown in Figure 2, where the final offer is a combination of many areas coming together.
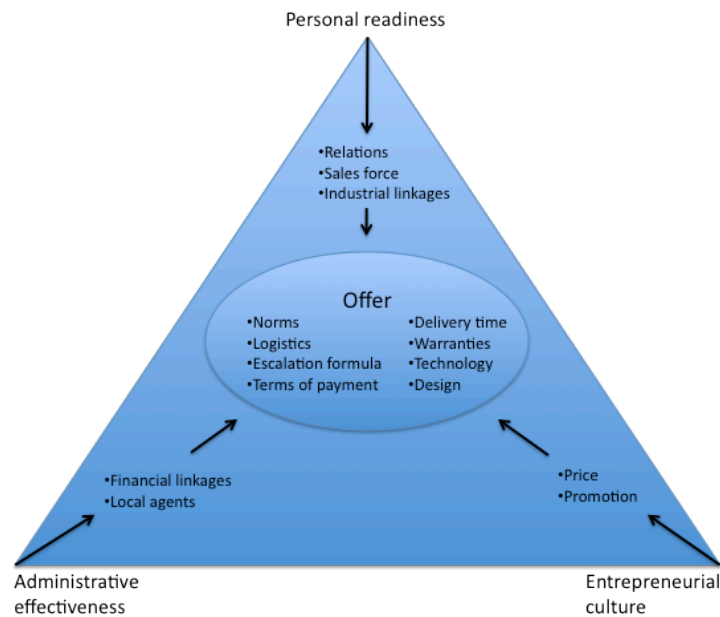
Figure 2 - The project winning triad (Adapted from Cova & Holstius, 1993, p 119)

The other characteristic in Cova and Holstius' (1993) study, buyer/seller interaction, refers to six principal supplier stages in a project: search, preparation, bidding, negotiation, implementation and transition. It was clearly shown in their study that the better these stages were managed, the more successful were the results in project business. Also the alignment of these stages with the customers' corresponding activities is of importance.

2.1.1.2.   Business models in project business

Recent studies conclude that the strategic and long-term perspective should be considered further in the project business evaluation of how projects, firms and networks are developed and managed. It has also been shown that different projects may have different business models, sometimes different from the company's overall business model (Wikström et al., 2010).

Business models in project-based industries often focus on delivering value to the customer and thus might require ties across the boundaries of departments or even boundaries between firms. However, strategy on the other hand focuses on competition and consequent survival, which is why it is important for business models to still be properly aligned with overall strategy and culture of the focal firm. In their study Wikström et al. (2010) identify a number of project business models aimed at creating, for example, flexibility, customer involvement, growth and greater value proposition.

Wikström et al. (2010) argue that by using different business models for different projects it is possible for a company to reach beyond the overall company strategy and business model. By doing so, a company can further increase customer value delivered through diversifying their offering. However, as mentioned above, a focal company will be required to make closer bonds with other firms and, as value creation becomes increasingly intertwined, it might be difficult to say who reaps the benefits and who takes care of overall elaboration and development of the business models.

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2.1.1.3. Services in project business

A service is produced in direct relation to the customer. By including service activities to a product or a project companies can differentiate their business and create competitive advantage, achieve higher profits and a continuous stream of revenue (Artto et al., 2008). Thus the technical expertise as well as the alignment between service, project processes and the overall business processes will be key factors for success (Gann & Salter, 2000). Services related to a project can be divided into three stages (Samli et al., 1992; Artto et al., 2008; Helander & Möller, 2006): *pre-sale activities*, *sale/implementation activities* and *post-sale/long-term activities*. These stages thus refer to activities taking place in the time phases before, during and after the project, as shown in Figure 3.
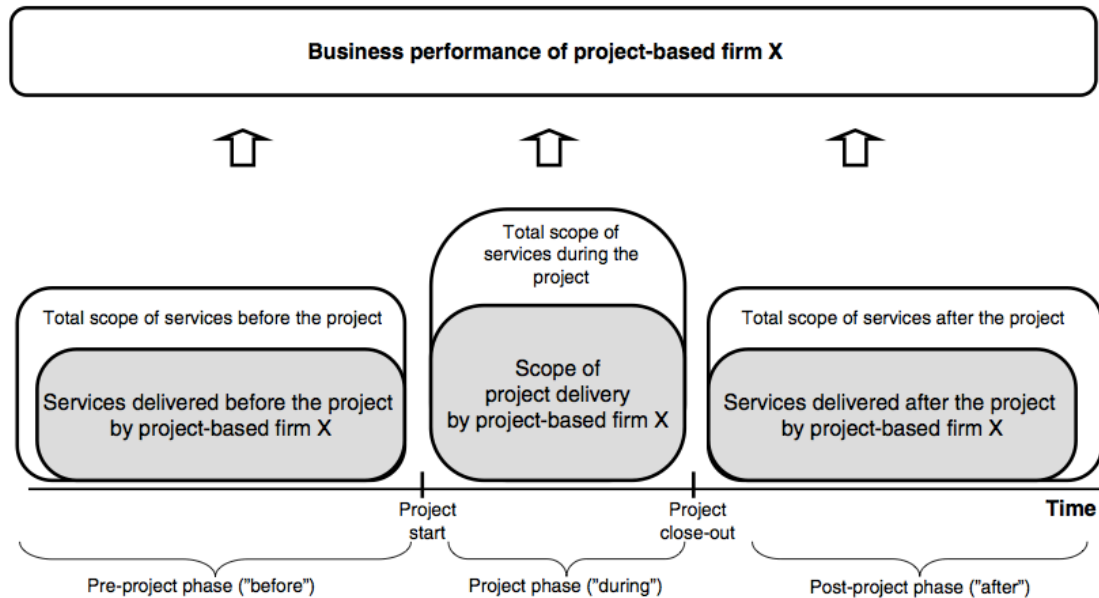
Figure 3 - The relation of services to single core project delivery (Artto et al., 2008, p 500)

Artto et al. (2008) study five case companies and identify six types of impacts that services have on business in the different time phases. These impacts and the main effects throughout a project are described below.

Customer entry – Services can be used to gain new customers and projects. In the pre-sales phase completely new customers are attracted through for example *consultative selling*, *conceptual design* and *feasibility studies*, many times free of charge. Furthermore joint development of projects and innovation activities together with the customer could increase the customer's willingness to invest in the supplier. During the implementation- and the post-sale phase customer entry may instead refer to add-on services developed and delivered during the core project as well as field maintenance and training to increase the delivery scope of the project.

Customer value – Services can lead to a greater customer value by creating technology advances already prior to the project launch. Services are thus used to support the customer's investment through *engineering design* and *systems integration*. During the project an accurate combination of products and related services can better fulfil the customer needs and increase the overall profitability. Once the core project has been completed focus is moved to maintenance, upgrades and modernizations, which all increase the customer value as well as the project scope for the supplier. At this stage *outsourcing*, *service centres* and *operations support* become interesting.

Competitive advantage – Competitiveness can be achieved through services by making the project offering unique and assure a fit between the customer's needs and the supplier's offering. Offering outsourcing activities that specialise on the customer's operational level on a longer-term perspective can also strengthen competitive advantage by encapsulating the customer. Furthermore, by making the core project flexible in terms of product structure throughout the implementation the supplier can offer inherent services as a way to sell related products.

Delivery efficiency – Training and project/product configurators can smoothen the project delivery. Services in relation to the project can make activities such as social and legal issues more cost-effective. Centralisation of the supplier's activities for several customers will help to achieve economies of scale, as will information technology reduce the excessive need for man-hours in all time phases of a project.

Service business – As mentioned earlier, the service itself can be a source of continuous stream of revenue. Therefore it shall be regarded as a potential source to higher profit. A core project can be viewed as a customer entry for future services. Long-term maintenance and operations support can provide great opportunities to increase the project profitability and also interest the customer for new project launches in the future.

Innovation and learning – Knowledge accumulation and capability development drive the development of new and improved concepts and products. Through consulting activities the supplier increases the understanding of the customer's business. Not only can the core project delivery be enhanced throughout the implementation phase, good project management experiences can also be used cross-project wise to create more value-adding offerings of solutions for future sales to the same or other customers.

2.1.1.4.   IT-projects

Reich, Sauer and Yong Wee (2008) claim that although IT-projects, technically and organizationally, have become more complex since the mid-1990's, projects have also started to deliver better performance. They present what they call an innovative approach towards IT-project management in order to better understand the increase in performance delivered from IT-projects. Three aspects of this suggested method stand out as particularly important when dealing with IT-projects, compared to normal projects: Involving the customer's *business* people as well as IT people, plan for post-delivery and adaptively re-plan using meetings to focus attention.

Involving the customer's *business* people as well as the IT people – Reich, Sauer and Yong Wee (2008) argue that the *sponsor* of an IT-project, i.e. managers of the customer firm in charge of overseeing the successful completion of the project, should be thoroughly educated in the project process. The sponsor is not necessarily familiar with IT or IT-projects and Murray (2004) identifies this as one of the primary reasons why the b*usiness side* of a firm often has problem understanding and assessing what the *IT side* of that firm is doing.

Plan for post-delivery – Reich, Sauer and Yong Wee (2008) talk about the so called *go*-live, i.e. when an operationally functioning IT solution is delivered to the customer, and how the IT-project scope should extend beyond this point in time. Their study suggests that planning for *post-delivery* is of great importance to achieve project success in the long run. This means communicating with both IT personnel and business users at the customers also after go-live, perhaps also monitoring the system for some time to detect errors or misuse.

Adaptively re-plan using meetings to focus attention – Reich, Sauer and Yong Wee (2008) argue that although having a plan is important there should be a mutual understanding among everyone involved in a project that the plan can change. The plan is a guide rather than a master and allows for adaptations as long as the deliverables are met in time. Such an understanding is more easily generated if the project plan is created, and updated, with consensus from all the team members, including the customer. To enable such a culture, meetings should be held to focus attention on problems and secure a shared view of the problem. The outcome of the meeting should be a revised plan with appointed responsibility for problem solving, not necessarily a solution to the problem.

2.1.1.1. Knowledge management

Laesvirta and Ribière (2008) present a case study based on a three-year study of a growing IT solutions provider with global presence, where a lack of knowledge sharing between projects and business areas had created difficulties for the company. To counteract this situation the company on one hand implemented an internal training program to ensure sufficient knowledge for new employees. On the other hand, to improve the customer support, they worked with the infrastructure for customer support, defined knowledge sources, improved the support process, encouraged cross-departmental communication and defined targets and metrics, such as response time and customer satisfaction. More specifically some successful actions were to provide training of employees free of charge and with an 80 per cent wage payment. Furthermore product, theory and concept trainings were given by senior specialists to provide customers with proactive information concerning common queries (Laesvirta and Ribière, 2008).

The results were obvious and the company managed to achieve remarkable improvements through a number of low-cost initiatives. Furthermore, as benefits were observed both at the individual and organisational levels, the support from the employees was significant and a more open organisational culture emerged (Laesvirta & Ribière, 2008). Laesvirta and Ribière (2008) conclude that a well-defined and focused knowledge management strategy, in correspondence with its business strategy and when the three pillars of knowledge management (people, technology and processes) are taken into account in a supportive and motivating climate, where people are involved, could yield great benefits for a company.

Another study treating knowledge management in the sense of knowledge codification through intra-project learning in project-based firms was carried out by Prencipe and Tell (2001). They studied the learning processes for project-based firms and their ability to accumulate knowledge and transfer it between different projects. As a reference they use an article by Zollo and Winter (2002) that identifies three learning processes, *experience accumulation*, *knowledge articulation* and *knowledge codification*. Zollo and Winter (2002) argue that the effectiveness of these learning processes depends on the task characteristics and the firms' willingness to learn. Experience accumulation refers to incremental improvements of routines through tacit accumulation of experiences. Through knowledge articulation employees can improve their understanding of casual mechanisms by sharing experiences with their colleagues. Finally when employees codify their knowledge of routines it takes them beyond just knowledge articulation and tools and manuals are developed. Prencipe and Tell (2001) present a collection of learning typologies, outcomes and economic benefits related to these learning processes, as shown in Table 3.

Table 3 - Learning typologies, outcomes and economic benefits (Prencipe & Tell, 2001, p. 1378).

	LEARNING PROCESS		
	Experience Accumulation	*Knowledge Articulation*	*Knowledge Codification*
Learning typologies	• Learning by doing • Learning by using	• Learning by reflecting • Learning by thinking • Learning by discussing • Learning by confronting	• Learning by writing and re-writing • Learning by implementing • Learning by replicating • Learning by adapting
Outcomes	• Local experts and experiential knowledge in individuals (e.g. subject matter expert)	• Symbolic representations and communication • Improved understanding of action-performance relation (predictive knowledge)	• Codified manuals, procedures (e.g. project management process)
Economic benefits	• Economics of specialisation	• Economics of co-ordination	• Economics of information (diffusion, replication, and, reuse of information)

Prencipe and Tell (2001) used this 3x3 matrix to define the learning landscape for different companies, depending on which areas they focused on. Without exploring all the different constellations they came up with, it should be mentioned that they argue that project-based firms tend to focus heavily on outcomes rather than on the process of codification itself and as such they may miss possibilities to develop tools and organisational mechanisms for inter-project learning.

2.1.1.2. SWOT Analysis

A SWOT analysis is a tool used in business and management settings to analyse a certain situation, process or strategy (Mind Tools, 2012). The name is an acronym for the four words Strengths, Weaknesses, Opportunities and Threats that are the four aspects constituting the tool. The first two aspects, Strengths and Weaknesses, are internal to the situation being analysed whereas the latter two aspects, Opportunities and Threats, generally relates to external factors. Figure 4 provides a simplified example of a SWOT analysis for a hypothetical small start-up consultancy firm.

	Increase or explore	Reduce or mitigate
Internal	We can change direction quickly if our current strategy does not work.	We have a small staff, with a shallow skill base in many areas.
	S **W**	
	O **T**	
External	Our business sector is expanding, with many future opportunities for success.	Developments in technology may change this market beyond our ability to adapt.
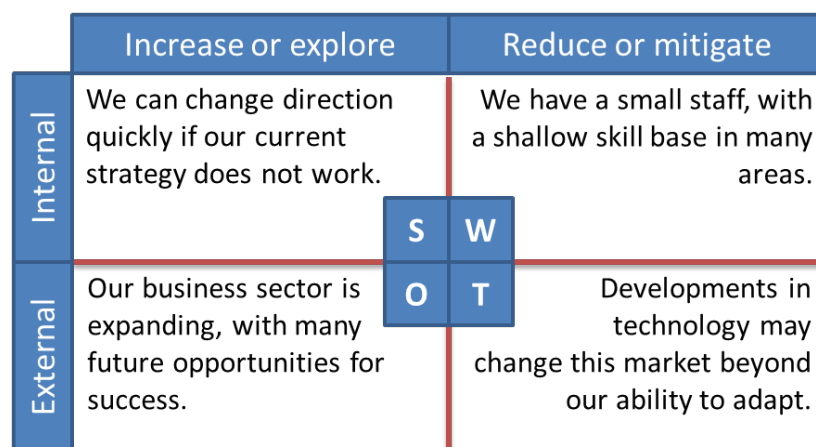
Figure 4 - Example of SWOT analysis. (Adapted from Mindtools, 2012)

13

The SWOT analysis in Figure 4 would suggest that the small consultancy firm to specialize in rapid response to increase market shares of the expanding market and to build a larger skill base to mitigate the risk of lagging behind technology changes (Mind Tools, 2012).

2.1.2. Customer relationships

The second part of *The context of IT-Projects* is Customer Relationships. Zablah, Bellenger and Johnston (2004) argue that Customer Relationships and Customer Satisfaction are closely connected. Any interaction between people will lead to a forming of some sort of relationship and by consciously managing their business relationships, such as a customer relationship in a Business-to-Business setting, a selling company can thus influence customer satisfaction.

Håkansson & Snehota (1995, p. 25) define a relationship as "*mutually oriented interaction between two reciprocally committed parties*". Furthermore, they have found that there are four re-occurring structural characteristics of customer relationships in a business-to-business setting: Continuity, Complexity, Symmetry and Informality.

Continuity – A major supplier/customer relationship can last for many years or even decades, consisting of multiple transactions between the two companies in an evolving symbiosis. In general, the business relation starts with a smaller degree of interaction and evolves into closer and broader collaboration between the two companies. This continuity is often a pre-requisite for collaborative development efforts by the parties involved in the relationship.

Complexity – Customer relationships are complex and not always easy to overview or control. One of the reasons is that there are usually many different persons involved from both the supplier and the customer. These persons might for example be working for different departments, be situated in different geographical locations and/or belong to different levels of their organisation. This figurative network of personal communication within the customer relationship easily becomes complex when the persons in one organisation communicate with their counterparts in the other organisation. Another reason why customer relationships are complex is because they are seldom homogeneous, one relationship might be used to achieve multiple goals and these goals might shift over time.

Symmetry – As opposed to customer relationships on the consumer market, customer relationships in the form of business relationships tend to show more resource-symmetry. Examples of resources might be human, technical, knowledge and financial resources. This means that exercising influence or developing the customer relationship might be initiated by either side. Whereas on the consumer market a customer is often very "small" compared to the supplier company, in a business relationship the customer might even be "bigger" than the supplier in terms of the resources mentioned above.

Informality – Although a majority of customer relationships are governed by contractual agreements, their structure is often quite informal where the contracts only play a limiting role. Contractual agreements are usually inefficient for dealing with uncertainties, conflicts and crisis in a customer relationship, the bulk of the communicative landscape in a customer relationship is formed informally on past experiences. Depending on the previous outcomes of the customer relationship, trust and confidence in the other party increases or decreases.

McQuiston (2001) explores the nature of professional relationships and provides a conceptual model for relationship building and maintenance containing six core values and four supporting factors. The four supporting factors are: *Professional Respect*, *Investment of Effort by Top Management*, *Personal relationships* and *Continuous Improvement Over Time*. The four supporting factors are imperative for the existence of the relationship, without them the relationship will fade away and seize to hold a productive purpose. As previously mentioned, the personal relationships involved in a customer relationship can add complexity to the relationship but they are imperative for the relationship (Håkansson & Snehota 1995). The six core values (McQuiston, 2001) are values which must be shared by both the supplier and the customer in order for the relationship to function properly. Four of the core values can to a certain extent be established by contractual means: *Mutual Dependence*, *Mutual Commitment to Customer Satisfaction, Shared Goals & Objectives* and *Concern for the Other Party's Profitability*. The remaining two core values can only be established through interaction over time: *Open Lines of Communication* and, perhaps most important, *Trust*.

Waluszewski et al. (2008, p.12) argue that customer relationships are maintained through interaction where interaction is defined as:

/.../ the substantive process that occurs between business actors through which all of the aspects of business: material, financial and human and all of the elements of business: actors, activities and resources take their form, are changed and are transformed.

The idea of change and transformation of actors, activities and resources belongs to the concept of the A-R-A model which is a model for network analysis comprising of three analytical levers: Actors, Resources and Activities (Gadde, Håkansson & Persson, 2010). The basic idea is that the actors of the network (e.g. companies, institutions or people) change and transform the resources (e.g. physical resources or knowledge resources) through different activities (for example manufacturing, logistics or communication).

Returning to interaction, Waluszewski et al. (2008) argue that interaction is not just communication but an activity which pays great dividend if performed correctly. They argue that the greater the involvement of a company in a particular interaction, the greater will be the effects on the company's own activities, resources and on the company itself.

Now that the structure and prerequisites of customer relationships has been established, the next step is to maintain and manage the customer relationships. Doing so is often made easier by proper *Customer Relationship Management*, often abbreviated *CRM* (Mithas, Krishnan & Fornell, 2005).

Defining CRM is somewhat problematic because of the ambiguity in research literature, Zablah, Bellenger and Johnston (2004) set out to find a definition of CRM in literature and identify at least 45 different distinct definitions of the term. One of the most common notions is that "*...CRM is much more than a technology*" (Zablah, Bellenger and Johnston, 2004, p. 479), meaning that industry sometimes misinterpret CRM as being limited to nothing more than an IT-application or database. This common misconception, resulting in failure to exploit the potential of CRM, is one of the main reasons why some CRM-initiatives fail.

The aforementioned literature study by Zablah, Bellenger and Johnston (2004) result in a more comprehensive conceptualisation of CRM, describing it as a mix of five independent dimensions: a process, strategy, philosophy, capability and a technology.

CRM as a process means that the supplier regards CRM as a process of maintaining and evolving supplier/customer relationships over a longer period of time.

CRM as a Strategy means that the supplier will regard CRM a strategy for determining a customer's lifetime value and thus enable appropriate allocation of resources for serving that customer.

CRM as a Philosophy means that the supplier is dedicated, as part of the supplier's corporate philosophy, to better understand and serve their customers. Such a supplier uses CRM to increase customer retention, i.e. customers which are willing to continue purchasing goods/services from the supplier.

CRM as a Capability means that the supplier regards CRM as a competence, to be able to design their offering according to what they know about the customer. It enables the supplier to continuously adapt their behaviour towards individual long-term profitable customers.

CRM as a Technology means that the supplier regards CRM as a tool, usually a database with some sort of business intelligence connected to it. This technology enables the supplier to establish long-term profitable customer relationships thorough knowledge and interaction management

Mithas, Krishnan & Fornell (2005) argue that CRM is likely to have a positive effect on customer satisfaction and that there are at least three reasons why.

First, CRM applications enable customers to customise their offerings for each individual customer and thus increasing the perceived quality of the offering.

Second, CRM applications can enable a more homogeneous delivery of an offering, reducing variability of the consumption experience and thus enhancing perceived quality.

Third, CRM helps firms to manage customer relationships over the three stages of relationship dynamics: initiation, maintenance and termination.

2.2. Delivery process

This section introduces the delivery process with respect to the two central areas of this master thesis, Customer Satisfaction and Customer Profitability. Note that customer profitability refers to the profitability of a customer from the point of view of the supplier, i.e. the supplier's revenue from serving a customer minus the cost of serving that same customer.

2.2.1. Customer satisfaction

Starting with a basic definition, Farris et al. (2010, p. 57) define customer satisfaction, or rather the metric of customer satisfaction, as:

"The number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services exceeds specified satisfaction goals"

Farris et al. (2010) conducted a survey study of important marketing-related metrics in which 194 senior marketing managers were asked to rank 110 metrics

according to usefulness for their business. As seen in Table 4; Customer satisfaction was the highest scoring non-financial metric, receiving an "importance-rate" of 71 per cent which landed it a 4th place in total.

Table 4 - Usefulness of different marketing metrics. Study performed by Farris et al. (2010).

METRIC	% SAYING VERY USEFUL	RANK
Net profit	91 %	1
Margin %	78 %	2
Return on investment	77 %	3
Customer Satisfaction	71 %	4
...	...	...
Heavy usage index	6 %	110

Furthermore, Farris et al (2010) argue that customer satisfaction is largely dependent on what the customer was expecting to get. As an example, a budget motel might receive higher customer satisfaction ratings than a luxury resort, even though most people would say the luxury resort is better in absolute terms, because the tenants in the luxury reports had higher initial expectations. In other words, the discrepancy between customer expectations of the service and how the customer perceived the service was greater for the customers visiting the luxury resort than for customers visiting the budget motel as shown conceptually in Figure 5.
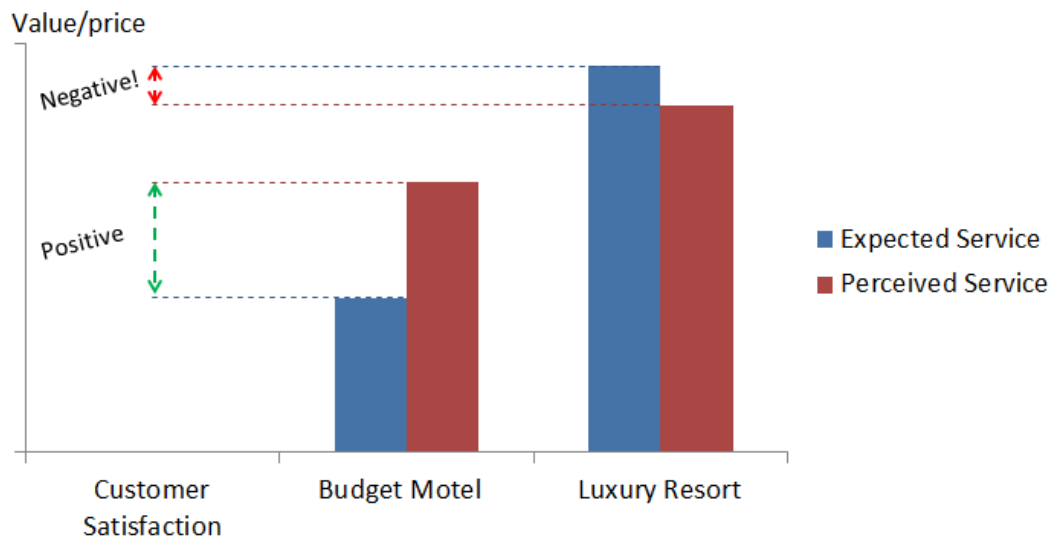
Figure 5 - Conceptualisation of difference in expected and perceived customer service.

When speaking of services, Zeithaml, Berry and Parasuraman (1988) call this discrepancy between expectations and perceived delivery the 5th *gap* in the *Delivery of Service Quality*. They argue that this gap is in turn affected by four other gaps in the interplay between a service provider and a service consumer. In order for a service provider to deliver good service quality, every action should be taken to minimize these gaps. Table 5 lists these gaps and presents the conflicting perspectives in each gap.

Table 5 - The conflicting perspectives behind the five gaps in Delivery of Service Quality (Adapted from Zeithaml, Berry & Parasuraman, 1988)

GAP	CONFLICTING PERSPECTIVES		
Gap 1	How the consumer expects the service to be delivered.	VS	How the management of the service provider <u>perceives</u> customer expectations of service delivery.
Gap 2	How the management of the service provider wants to specify quality.	VS	How the quality of the service delivery is <u>actually</u> specified.
Gap 3	How the service is supposed to be delivered, according to the quality specifications.	VS	How the service is <u>actually</u> delivered.
Gap 4	How the service is actually delivered.	VS	How the provider <u>communicated</u> that the service would be delivered.
Gap 5	How the consumer expected the service to be delivered.	VS	How the consumer <u>perceived</u> the delivery of the service.

As mentioned earlier the size of the fifth gap, between expected service and perceived service, is driven by the first four gaps. Figure 6 gives a comprehensive overview of how the gaps are related to actions undertaken by the service provider, as well as expectations of the consumer.
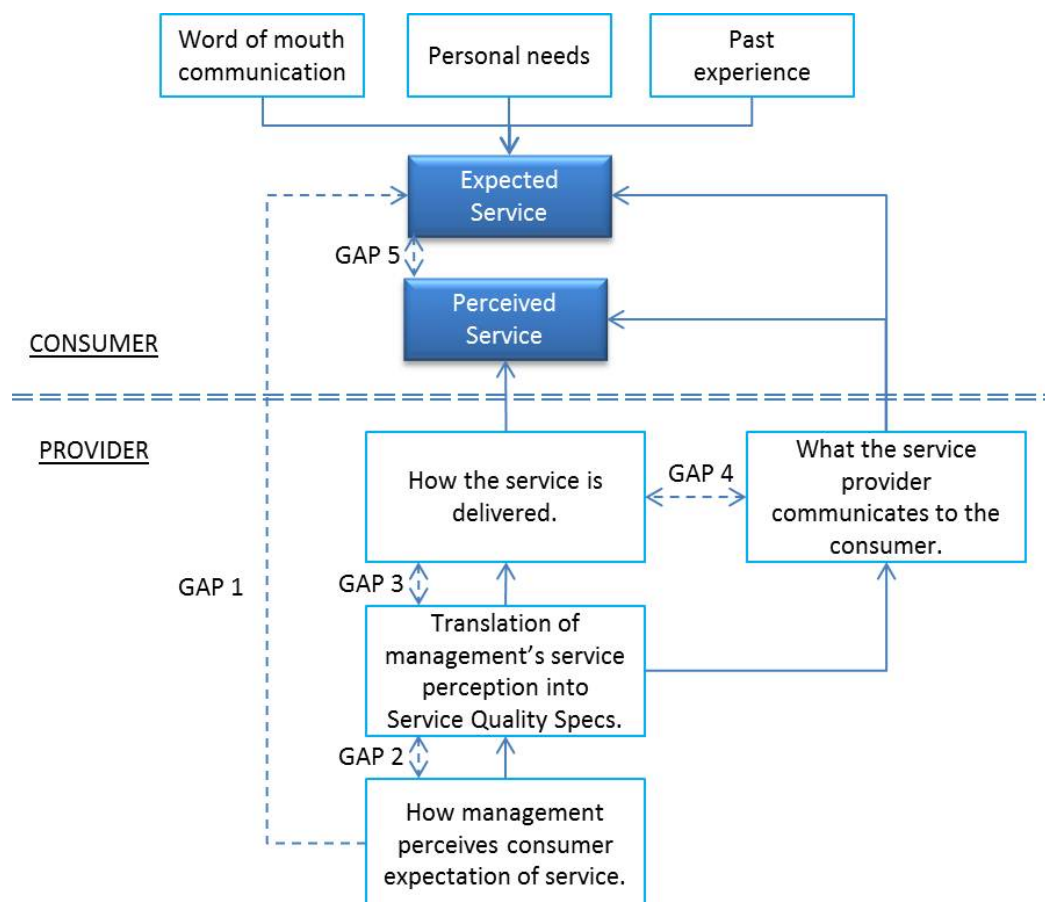
Figure 6 - Gaps in Delivery of Service Quality (Adapted from Zeithaml, Berry & Parasuraman, 1988).

The gaps can have different importance in different situations and to find the most important ones in each situation all gaps need to be measured and compared. Zeithaml, Berry and Parasuraman (1988) present a way to measure the service quality experienced by the customer depending on the five dimensions: tangibles, reliability, responsiveness, assurance and empathy. They refer to this scale as SERVQUAL. SERVQUAL was first presented by Parasuraman, Berry and Zeithaml (1986) in 1986 and was later refined and

reassessed by the same authors in 1991. One finding from the reassessment was that the tangibles dimension was consistently split into two sub-dimensions: one concerning facilities and equipment and another focusing on personnel and communication infrastructure (Parasuraman, Berry & Zeithaml, 1991). Scores along the SERVQUAL can be used to analyse the magnitude of the gaps. To measure for example the size of gap 1 in Figure 6 a SERVQUAL study can be conducted with managers at the supplying company and then be compared with a SERVQUAL conducted with the customer. The results will show the discrepancies between what the customer expects from a service or a product and what the supplier's management believes the customer expects Zeithaml, Berry and Parasuraman (1988). The five dimensions of the SERVQUAL and their components are presented below (Parasuraman, Berry & Zeithaml, 1986):

Tangibles quality – Up-to-date equipment, appealing facilities, employees appearing neat, physical facilities aligned with the type of service provided

Reliability quality – Provide services etc. at the time they promise, be sympathetic and reassuring when customer problems arise, dependable, keep accurate records.

Responsiveness quality – This dimension is reverse coded, meaning that the response should illustrate the level of acceptance of the areas: not be expected to tell customers exactly when services will be performed, not realistic for customers to expect prompt service, employees do not always have to be willing to help customers, it is OK if they are too busy to respond to requests promptly

Assurance quality – Customers should be able to trust employees and feel safe in their transactions with these stores' employees, employees should be polite and employees should get adequate support to do their jobs well.

Empathy quality – This dimension is also reverse coded and consists of that the company should not be expected to give customers individual attention, employees cannot be expected to give customers personal attention, it is unrealistic to expect employees to know what the needs of their customers are and have the customers' best interests at heart and finally it should not be expected to have operating hours convenient to all customers.

The SERVQUAL approach is a good start, it is however recognized that a restructuring of the dimension components or adaption to specific situations might be needed (Parasuraman, Berry & Zeithaml, 1988; Parasuraman, Berry & Zeithaml, 1991). It is furthermore recommended that the approach can be used in combination with other methods or be used in creative ways, e.g. comparing the scores with scores where the customer gets to score a, according to them, high-quality company (Parasuraman, Berry & Zeithaml, 1991).

2.2.1.1. *Measuring customer satisfaction*

As mentioned earlier, Farris et al. (2010) argue that Customer Satisfaction is considered the most important non-financial metric for marketing managers and executives. However, they also mention that actually measuring Customer Satisfaction and how to do it is not self-evident. The results from measuring customer satisfaction can have powerful effects within an organization; giving indications on how to allocate resources or how different departments, product groups and channels are performing. Some business metrics, such as sales or market share, take somewhat of a snapshot of a firm's current situation whereas Customer Satisfaction ratings can also indicate what the future will look

like. Satisfied customers are more likely to repeat purchase and also to recommend the selling firm to their peers. Reversely, dissatisfied customers are less likely to repeat purchase and more likely to recommend their peers <u>not</u> to buy from the selling firm.

When measuring customer satisfaction Farris et al. (2010) talk about *response bias* meaning in this case that less satisfied customers are more likely to complete customer satisfaction surveys as a means of venting their disappointment. Also, since customer satisfaction of a product/service heavily depend on what the customer expected the product/service to be like there is a need to consider the level of expectation when measuring customer satisfaction. Customer satisfaction might decline because expectation has gone up and in reverse customer satisfaction might go up because expectation have decline. However, boosting customer satisfaction by means of lowering expectation might constitute a risk if the expectations drop so low that the product/service appears unattractive in comparison to competitors' offers.

The theoretical methodology of how to measure customer performance is split in two different aspects: Quantitative measures and Qualitative measures.

Quantitative measures – Quantitative Customer Satisfaction is usually measured through surveys where a customer indicates on a scale from 1-5 how satisfied that customer felt after receiving the product/service (Farris et al., 2010). On this scale, 1 usually means the customer is Very Dissatisfied and 5 usually means the customer is Very Satisfied or any similar notion to portray the customer's attitude. Results from such a survey is then collected and aggregated, either into a simple average of the whole customer experience or more mathematically advanced paired with different attributes of the product/service.

Qualitative measures – In addition to a quantitative indication on whether a customer is satisfied or not, Grigoroudis and Siskos (2010) argue that it is important to qualitatively know <u>why</u> a customer feels in a certain way. Scwarc, (2005) argues that there are many different ways of investigating qualitative customer satisfaction such as interviews, focus groups or questionnaires to name a few. The upside of such methods is that they can provide deeper understanding of what customers actually think regarding both positive and negative aspects. One downside is that such methods usually require more resources both in planning, execution and assessing the information gained.

2.2.1.2. Segmenting of customers

To segment customers is a way to target different customers with the accurate resources respectively and assure that their specific needs, wishes and potential as a customer is addressed appropriately. Lambert (2010) presents some criteria that can be used for customer segmentation: profitability, growth potential, volume, competitive positioning issues, access to market knowledge, market share goals, margin levels, level of technology, resources and capabilities, compatibility of strategies, channel of distribution and buying behaviour. As one can see these criteria refer either to financial strength and importance to the supplier or to strategic development opportunities. Once a customer segment has been defined the supplier can match its resources based on cost and revenue potential of a customer to best meet the short-term and long-term value for the supplier. Different customer segments will require a thorough preparation of account/segment management teams, identification of opportunities within the different segments, development of service agreements and a measuring and evaluation of performance and

profit per segments. These activities, and some more, are presented by Lambert (2010) as sub-processes at the operational customer relationship management process.

2.2.2. Customer profitability

The simple definition of customer profitability is how much a customer contributes to profit. The basic reason to measure and analyse customer profitability is a common believe that *"what gets measured gets managed"* McNab (2006, p. 13). The management according to McNab (2006) in this case refers to sales, service, products, operations and finance. However there are many ways to define the way to measure profitability, e.g. over time, considering future potential or by taking into account other positive effects a customer may have on the company. Thus customer profitability depends on when you measure and how you measure. McNab (2006) argues that the first task is to define who your customers are and he suggests a simple guideline for this task, claiming that a customer is a purchasing decision unit. The second task is to find a way to distribute revenue accurately between the customers, meaning that each customer must be assigned their actual contribution to profit. For this McNab (2006) mentions customer information file as an example, which cross references transactions to accounts. Once these tasks have been completed measuring decisions must be made on the following dimensions:

Time dimension – *Historical value* considers the contribution from a customer over a defined past period of time. Historical value is useful in comparing customers with each other. *Current value* takes into account a shorter period of time, e.g. a month. It might be a volatile measurement and is best used to evaluate the impact of campaigns, new offers and pricing strategies. *Present value* is similar to the current value, but considers also future revenue of a customers' existing contractual business. The final time dimension, *lifetime value*, is also future oriented, but with a higher focus on the customers potential and not only existing business. This measurement puts higher demands on insight in the customer future activities. The orientation of the different time dimensions is illustrated in Figure 7.
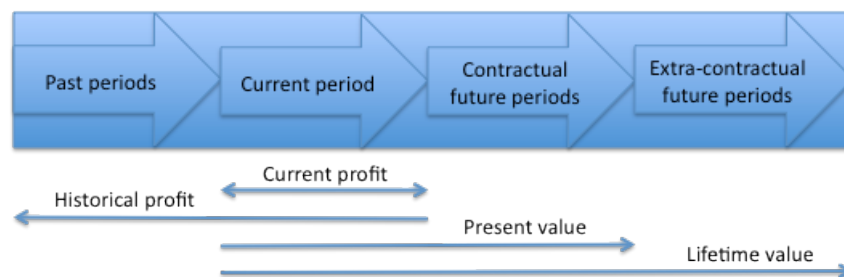
Figure 7 - Time dimensions (Adapted from McNab, 2006, p. 22)

Accounting theories – The areas to treat in customer profitability measuring are *revenue* and *cost*. In some cases it is enough to calculate revenue and some simple cost items to define customer profitability and create comparable results between different customers. In other cases a more thoroughly presented accounting model is required, where all revenue and cost are addressed.

On a cash basis, *revenue* can relatively easy be calculated when it is banked. However on an accrual basis the goal is to identify the cost related to generated revenue,

which might be harder to carry out, especially when it comes to creditable activities or accounting cycle gaps. It is important though to keep in mind that the objective is a management information measurement and not a financial reporting system (McNab, 2006).

Costs mainly include transaction-specific costs and customer-specific costs. These cover purchasing cost, accounting cost, and sales cost respectively cost for marketing, credit or producing a customer statement. A commonly used costing information model is the Activity-Based Costing (ABC) approach. Activity-based costing is a way to calculate costs depending on the responsible activities. By such it is a method where costs are assigned to products or services depending on what resources they consume. To be able to assign costs at the very lowest detailed level it is necessary that all activities are broken down into discrete details. Activity-based costing is not only an accounting tool for cost calculation, it can also have other positive effects for companies, e.g. increased quality of information for management purpose. Furthermore it generally improves collaboration between management and accountants (Pierce, 2004).

McNab (2006) mentions three different bases for cost calculations; actual-, standard- and average-cost. Actual costs are the cost of actually performing each activity at a certain time. Standard costs are based on engineers evaluation of how activities should be carried out in general and what resources that will require. Average costs consider earlier accounting periods without direct reference to the present activities. This final approach is often used when detailed activity costs are not at hand.

Probabilistic items – The final dimension, which also might be the most difficult one to quantify, is the probability of future events. To treat this dimension one must both identify the amount of a cost or revenue as well as the probability of it to occur. Then one must assign these values to each period and per customer. A good way is to use historical data as a reference in calculations.

To succeed in this customer profitability calculations McNab (2006) presents three pre-requisites: *executive sponsorship*, *statement of purpose* and *reliable data*. If carried out successfully the customer profitability measurement can provide useful tools to ease daily decisions on for example:

- Choosing prospective customers to acquire
- Choosing customers to retain vs. abandon
- Choosing channels of distribution
- Setting the price of a product or service
- Setting sales compensation rates
- Setting service levels for customers
- Setting advertising and promotion budgets

Furthermore, on a financial basis, customer profitability can be useful in key performance indicator calculations, such as:

- Measuring the cost of lost business
- Measuring the value of new business
- Return on campaign
- Return on offer
- Return on pricing change
- Return on changes in service delivery

2.3. Framework for creating a delivery process for project based IT-solutions

This section will combine the previous two sections into a framework for creating a delivery process for IT solutions.

The produced framework is illustrated in Figure 8. With the aforementioned theory in mind, customer satisfaction and profitability were chosen as metrics to work with in different phases of a project. These two elements must therefore be considered thoroughly both as separate entities as well as their effects on each other. The framework takes a wider point of view than just considering the actual project, which has its focus on the *during phase*. That is due to the importance of also aligning activities *before* and *after* the actual project to get the most out of the delivery process, as discussed by Artto et al. (2008).
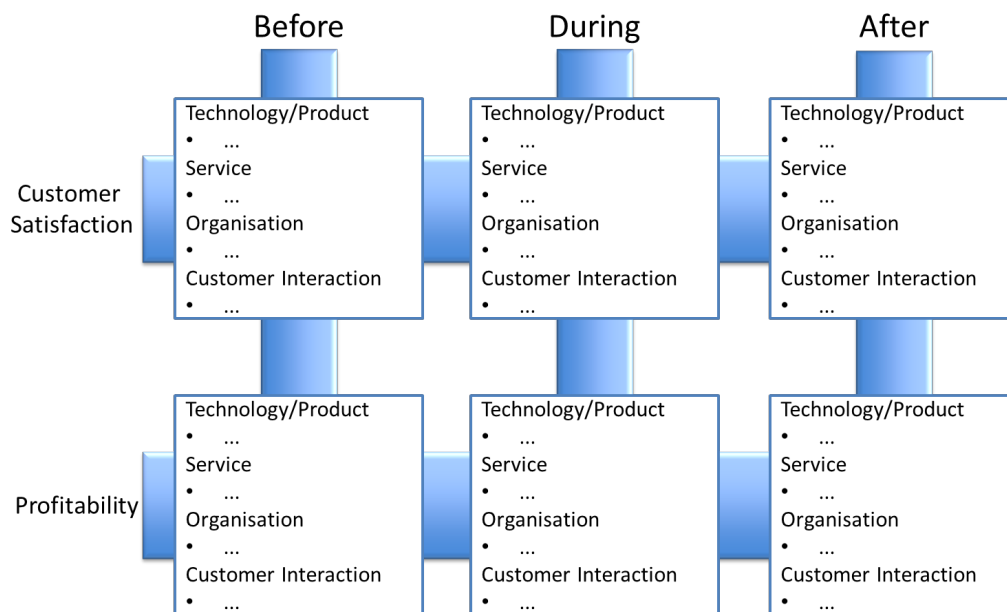
Figure 8 - A framework for establishing a delivery process for project based IT solutions

At this stage only the structure for the framework is presented. The six boxes that define customer satisfaction and profitability at the different time phases will be completed in the analysis chapter, through empirical data collection. This data collection is in turn based on four parameters that were found in literature. These four parameters were deemed by the authors to adequately encapsulate the aspects of reviewed theory and to be general enough for interviewees to understand and have an opinion on. Other evaluated parameters can be found in Appendix B – Possible parameters for the framework. The four parameters are described briefly below:

Technology/product – This refers to what extent the product portfolio has an impact on customer satisfaction and profitability. It can relate to the depth and the width of the product portfolio (Artto & Wikström, 2005), but also to the competitive advantage (Artto et al., 2008) that is created through unique product solutions as well as to how driven a company is to work with innovative solutions (Cova and Holstius, 1993) and continuously update their range of products. Examples related to technology and the product could be the functionality of the solution itself, innovative R&D or integration possibilities with other solutions.

Service – Service considers additional activities that can be provided in combination with the product to increase customer satisfaction or maximise the supplier's profitability (Artto et al., 2008). Service can for example be used to create competitive advantage through differentiating a rather standardised product from competitors' products (Artto et al., 2008). It can also be a way to find new customers and to create long-term relationships with customers. Service can be either charged for or be offered free of charge. Examples of services could be education, process improvement, field studies or maintenance activities.

Organisation – Organisation refers to the supplier's internal organisation and internal processes, documentation and communication. The organisational structure will have an impact on the outcome of the project (Reich, Sauer & Yong Wee, 2008; Farris et al, 2010) when it comes to for example communication efficiency, composition of competences in projects and responsiveness to the customers.

Customer interaction – In this framework, customer interaction pertains to the dynamics of the relationship between supplier and customer and how they interact with each other through communication. The communication is evaluated upon its accuracy, efficiency, effectiveness and frequency. In relation to communication the interpretation of communication is of equal importance (Cova and Holstius, 1993; Laesvirta & Ribière, 2008; Parasuraman, Berry & Zeithaml, 1991; McQuiston, 2001; Håkansson & Snehota 1995; Waluszewski et al., 2008).

There are many activities that preferably should be carried out properly to align the organisation with the upcoming project-phase. This could for example mean to have everything prepared at a generic project-stage so that the delivery process has a clear and understandable starting point.

During a project the detailed activities and thus the delivery process phases become vital for the success of the project. Focus is moved from the strategic view to instead maximise the profitability and customer satisfaction of particular projects. Maybe the most important aspect during the project is to take into account the customer's point of view. This is reflected in for example the suggestion by Waluszewski et al. (2008) in their arguing for customer interaction, or by Reich, Sauer and Yong Wee (2008) who argue that the customers' business people as well as their IT-people are both preferably involved in the project. This way the risk of making the solution too technical is minimised and instead a functional but realistic view is taken.

After the project is closed and handed over to the customer, activity focus shifts to the aftermarket, long-term relationship and documentation of experiences to improve the efficiency of the next project.

Although the time phases are separated in practise, they are also interrelated and depend upon each other. The horizontal bars in Figure 8 illustrate this dependency. What is possible during and after a project is much dependant on how the project is defined in the before phase. The defined scope before a project can for example sometimes be hard to change once it has been launched and it is therefore important to consider implications in future time phases already before the project. Consequently, how well the supplier manages to create a good customer relationship in the during phase will influence the possibility of additional sales in the after phase. In another sense one could argue that the way the customer is experiencing the aftermarket service is related to the before phase in future projects and thus the time phases are also recessively dependant and interrelated.

3. Method

This chapter presents and describes the research method that has been used throughout the thesis. This chapter furthermore includes a description of how the data collection was conducted through interviews and other sources of information. Finally the Method is reflected upon to evaluate the quality of the thesis.

3.1.   Research method

The research method is based on an extended literature search and review, where relevant theory was found, that could form the base for the theoretical framework. The theoretical framework was decided to have two directions, one focusing on the context of IT-projects and another one focusing on delivery processes. These two directions were later used as areas of investigation in the empirical data collection. The empirical data collection is a case study that uses interviews as main input. Yin (2003) refers to case studies as one of the most challenging approaches but still one that has the possibility to retain holistic and meaningful characteristics of real situations. Yin (2003) suggests a number of components that become important in a case study design, out of which the first three have been undertaken for the data collection of this thesis. In brief they comprise study questions, study proposition and unit of analysis, referring to how questions are asked, how they are directed and how they explain the investigated case.

The delivery process was divided in two main components: customer satisfaction and profitability. Customer satisfaction is simply how well the delivery process contributes to customer satisfaction. Profitability pertains to Medius' profitability because the delivery process, however well-contributing to Customer Satisfaction, should still render Medius a profit large enough to maintain their business. The idea, which is reoccurring through this report, is that a delivery process should provide maximum customer satisfaction while still generate a profit.

The empirical data collection and the gathered theory were combined to develop a framework for how to establish a delivery process for IT solutions. This task was approached through an abductive research, where theory and empirical data were systematically combined and the framework evolved successively.

An abductive approach to a research case implies a continuous move between the empirical world and the model world and systematically combining these two areas of investigation. Dubois and Gadde (2002) argue that the researcher can expand his understanding by alternating focus between empirical observations and theory. In developing a framework, as has been the case for this report, the abductive approach allows empirical findings to change the view of theory and the other way around. In relation to this it is suggested that a study is more responsive if it is not too much structured on beforehand and instead given the opportunity to evolve successively.

Systematic combining refers to the combination of theoretical framework, empirical fieldwork and case analysis and their simultaneous evolvement. Any research ought to confront theory with empirical findings and through a systematic combining approach this confrontation stretches continuously throughout the study (Dubois and Gadde, 2002). In their study, Dubois and Gadde (2002) consider systematic combining

through two angles, *matching* and *direction and redirection*, as illustrated in Figure 9. Matching concerns the relation between theory and reality, where Dubois and Gadde (2002) argue that abductive matching requires more, but also has the opportunity to yield more than for example inductive fit. Direction and redirection is a prerequisite for achieving matching and refers to the usage of a broad range of sources to triangulate data and achieve convincing and accurate conclusions. This triangulation could be explained as a combining of sources of evidence.
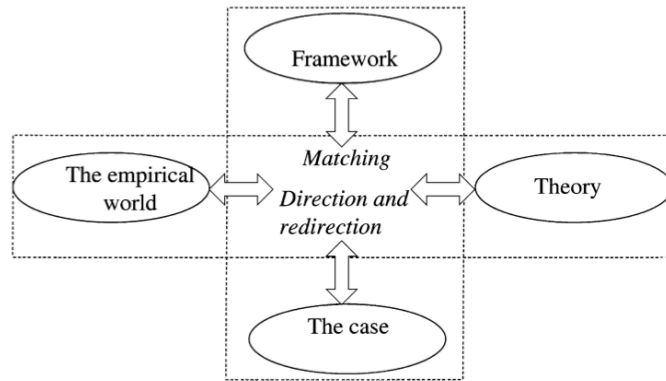
Figure 9 - Systematic combining (Dubois and Gadde, 2002, p. 555)

As systematic combining still takes existing theory into account it is more a way to develop existing theory rather than creating new ones. It does however give the researcher the possibility to be more flexible and less constrained to already developed theory. Dubois and Gadde (2002) state that theory is important, but it is also developed over time.

3.2.   Data collection

The data collection was, as presented, twofold. Theory was found through an extended literature review whereas empirical data was gathered through interviews with employees at the host company, Medius, as well as with their customers. Furthermore empirical data was found in annual reports, webpages and other public sources of information as well as Medius-internal documentation.

3.2.1. Literature review

The literature review was mainly conducted by the authors with the assistance of this thesis' supervisor. The literature search was almost exclusively performed using the academic search engine *Summon* provided by the Chalmers University of Technology Library. Summon combines hundreds of databases and tens of thousands E-Journals but the databases which were most frequently used during the literature review were ProQuest, Emerald, Books 24x7 and Science Direct.

To find literature, the authors firstly used literature from courses which the authors have undertaken at Chalmers University of Technology. Secondly, key words were used in Summon to find interesting and relative articles. The main categories of key words used were related to: *Project Business, Business Models, Customer Satisfaction, Profitability, IT-projects, Qualitative Customer Satisfaction* and *Competitive Advantage*. An overview of

key words used can be found in Appendix A. Thirdly, interesting literature references in those articles were used to find additional literature.

3.2.2. Interviews

The interviews were ten in total: three interviews with managers at Medius, three with consultants from Medius, one with a sales manager of Medius and three with different customer project managers. Note that "consultants" are Medius employees, not external consultants. Consultants can be Medius' project managers, application consultants or Technical Consultants from Central Operations (CO). This will be explained in further detail under heading 4.3.2.

The interviews were planned in advance and an interview guide was sent to the interview object a couple of days ahead of the interview. All interviews were recorded to assure that no misinterpretation would occur. Once an interview had been conducted the interviewers re-played the recording and took notes and discussed the results to select the parts that would bring value to this thesis.

In Table 6 below the interview objects are presented in order of company and title. Since the interviews were anonymous, the actual names of the interviewees are not given:

Table 6 - List of interviews, anonymous names.

COMPANY	INTERVIEW OBJECT	TITEL	DATE FOR INTERVIEW
Medius	Alfa	Manager	14 June, 2012
Medius	Bravo	Manager	19 June, 2012
Medius	Charlie & Delta	Manager/consultant	26 June, 2012
Medius	Echo	Sales manager	4 July, 2012
Medius	Foxtrot	Consultant	4 July, 2012
Medius	Gamma	Consultant	27 June, 2012
Medius	Hotel	Consultant	28 June, 2012
Customer 1	India	Project leader	5 July, 2012
Customer 2	Juliet	Project leader	6 July, 2012
Customer 3	Kilo & Lima	Project leader	16 August, 2012

The interviews with managers at Medius were aimed at creating a greater understanding for the current delivery process, referred to as *MWork* and explained further under heading 4.3.1. Furthermore the managers' opinions regarding future improvement possibilities as well as their thoughts about impact on profitability were discussed.

The interviews with consultants at Medius and with customers instead focused on getting their input on how the current delivery process is followed and how satisfied they are with different events. The consultant interviews were thought to be compared with the interviews later conducted with the customers and they were therefore similar in terms of discussion topics. The interviews with both the consultants and the customers were divided into two sections. The first section covered the detailed events taking place throughout the delivery of the IT solution.

For this section the events presented in the current delivery process documentation, MWork, was used to structure the interview. The other section had no particular focus on the delivery of Medius' products, but instead concerned the delivery of IT solutions in general. In this part of the interview the framework that was created in this thesis, presented in section 2.3, was discussed to get the consultants' and the customers' input on important aspects to consider in different time phases in relation to the delivery of IT solutions. The interview guides are presented in Appendices C-E.

The interviews were conducted in a semi-structured way, which implies that focus for the interviews were discussion areas rather than the questions themselves. The objective was to establish a good discussion and let the interview evolve around the most interesting areas along the way. As argued by Bryman and Bell (2003) through a semi-structured approach the interviewer has the possibility to sequence the questions and ask further questions depending on the answers that the interview object gives. The questions are also more general and open in comparison to a structured interview where the questions are direct and formal (Bryman and Bell, 2003).

3.2.2.1. Customers

In order to capture the customers' view of the Medius Delivery Process, three interviews were conducted with customers with whom Medius has installed Mediusflow: *Customers 1,2 & 3*. These customers were chosen because their relation to Medius was rather good and because they represented a fairly average selection of customers in terms of size and complexity. Furthermore, they recently closed their projects and had the project details fresh in mind.

Customer 1 – An industrial manufacturer and seller. Present in Europe, USA and the Middle East either by their own sales companies or through distributors with 1300 employees worldwide.

Customer 2 – Seller, marketer and distributor of clothes and attire. Present via retail locations in Sweden a little less than 20 people employed.

Customer 3 – An industrial manufacturer part of a larger international corporation. Present in roughly 40 countries worldwide with 1000 employees.

3.2.3. Other sources of information

As previously mentioned, empirical information was gathered from public and non-public sources. Information regarding Mediusflow as a product was largely derived from public marketing material but also from interviews with Medius employees. Information regarding the *MWork-model*, i.e. Medius' current delivery process was largely based on Medius-internal documentation but also on interviews with Medius employees.

3.3. Method of Analysis

The analysis was performed according to the abductive approach meaning that the framework, devised from the theoretical frame of reference, was matched with the empirical data gathered. The analysis comprises the base for the framework that can be used in the establishment of a delivery process for project-based IT solution providers, such as Medius. The analysis emphasises, to a large extent but not exclusively, the gaps between consultant and customer perceptions as described in the SERVQUAL method by Parasuraman, Berry and Zeithaml (1986). However, the analysis does not use the original SERVQUAL parameters but more generally discusses the gaps. Parasuraman, Berry and Zeithaml (1986) said themselves that the model should be adjusted to suit the situation.

Furthermore, a SWOT analysis was also performed to analyse the strengths and weaknesses of the current delivery process and what opportunities and threats Medius face for the future. The SWOT analysis was based on the empirical findings and is to be found in chapter 6.

3.4. Reflection on the quality of the study

The semi-structured interview method has received some criticism. Diefenbach (2009) claims that the interviewers own interests and theoretical position might influence the results. This is similar to Bryman and Bell's (2003) main critique to a qualitative research method being too subjective, difficult to replicate, hard to generalise and lack transparency. Due to the authors' lack of prior knowledge about the research topic the thesis is well defended from being too subjective. It was though deemed necessary to conduct semi-structured interviews to let interesting follow-up questions arise and there is of course a risk that the authors have showed a greater interest for some topics and missed out on other areas that would have been considered as more important to a field expert. Regarding the difficulty to replicate the research any qualitative approach is much dependant on the occurring situation at the time for the interview. This thesis is no exception and especially as customer relationships develop over time the results presented in this particular thesis must be considered to reflect the current situation.

An interesting topic is to what extent the conducted interviews can be generalised and as such represent the opinions for the whole range of customers and consultants. The customers were chosen due to that they had recently closed their projects. However what could be mentioned is that they all had good relationships with Medius on a professional level. This might have affected the result, showing a somewhat too positive situation. To try to avoid this result and get a completely illustrative data collection the interviewers remembered the interview objects explicitly that they were external observers and that their honest opinion would have no implication on their relationship with Medius.

Yin (2003) presents some strengths and weaknesses with the interview approach. The upside is that the interviewer has the possibility to be targeted and focus directly on the case study topic. Furthermore the interviewer can be insightful, which provides perceived casual inferences. On the other hand the interview approach may also create bias due to poorly formulated questions or response bias. Inaccuracies due to poor recall or reflexivity, where the interviewee gives what the interviewer wants to hear could also be a problem. Among other valuable guidelines Yin (2003) argues that the skilled investigator must keep in mind the original purpose of the investigation but still be able to adapt procedures or plans if unexpected events would occur, something that the authors have embraced.

One of the upsides of using the abductive method was the possibility of pairing literature with empirical findings as the thesis has progressed. This has made the literature search more relevant. The downside of the literature following the empirical findings might be that the literature does not provide any additional input to the findings in the empirical data. This has been offset by the fact that before most of the empirical data was collected, an extensive literature review had already been performed.

4. Empirical findings

This chapter presents the focal company of this master thesis – Medius – and their IT solution Mediusflow. In addition, this chapter will provide an overview of Medius' current processes when implementing Mediusflow with a customer and also present the findings from interviews with customers, managers and consultants.

4.1.   Short description of Medius

Medius has two core businesses: First, Medius AB is a provider of Business Solutions for simplifying and automating business processes, particularly in the field of *Purchase-to-Pay* and *Accounts Payable Automation Software Solutions*, using their own IT-platform *Mediusflow* (Medius AB, 2012). This will be elaborated in further detail under the section 4.2. Second, Medius AB is a Microsoft ERP Gold Partner with the rights to provide Microsoft Dynamics AX and NAV (Medius AB, 2012). However, this master thesis will be limited to the first core business, Mediusflow.

Medius AB is a Private Limited Company consisting of three different company entities:
- The holding company Medius AB with headquarters in Linköping, Sweden.
- Seven international subsidiaries fully owned by the holding company.
- A global network of independent partners.

In addition to the Linköping office, Medius Sweden AB is represented by offices in Stockholm, Eskilstuna and Gothenburg. The seven international subsidiaries are located in Norway, Denmark, Netherlands, France, Great Britain, United States and Australia. Medius has, through the global network of partners, presence and delivery capability in a handful of other countries in addition to the aforementioned ones.
Table 7 gives an overview of some of the key figures for Medius AB.

Table 7 - A selection of key figures for Medius AB (Medius AB, 2011a)

MEDIUS AB	
Founded	2001 in Linköping, Sweden
Employees (2011)	164 persons
Net revenue (2011)	148 000 000 SEK

Medius has three main corporate strategy drivers:
- Focus on the needs of the customer
- Develop flexible offers with which the customer can grow
- Position Medius as an international actor

4.2.   Mediusflow – The IT solution

This section will provide an overview of Mediusflow, which is the IT solution that Medius sells. As mentioned in the introduction to this chapter, Medius primary offer is a workflow management IT solution called *Mediusflow,* which is integrated with the customer's ERP system. Mediusflow is either installed locally at the client or managed by

Medius and run by the client through the cloud, a so called Software-as-a-service (Saas). Mediusflow has a number of uses and this section will start with the original one, Purchase-to-Pay and then describe all of the six modules in Mediusflow.

4.2.1. The start – Purchase-to-pay system

Mediusflow has evolved over time but today it is a Purchase-to-Pay system, often abbreviated P2P, meaning a system which handles all the information flow from when a company performs a purchase to when they pay the invoice for that purchase. Simply put, today a company might receive a paper invoice, checking it manually to a purchase order and/or delivery receipt, sign it, pay it and archive it. Mediusflow, however, is a computer program that enables this whole process to be performed digitally, even booking the invoice for payment in the ERP-system.

One of the main strengths of Mediusflow is the *Invoice Matching*, which enables digital scanning of paper invoices, via a normal paper scanner or a special scanner, and interpreting it automatically in Mediusflow. All interviewed customers have mentioned this as being one of the primary competitive advantages of Mediusflow, compared to competitors. Through invoice matching Mediusflow can automatically make sure that the invoice is "correct" i.e. that the invoice states the correct price, items, quantities et cetera. On top of paper invoices, Mediusflow also offers the possibility of handling invoices sent through electronic data interchange (EDI), e-invoices or basically any other invoice sending method. Should the invoice contain errors, need to be approved by more than one person or otherwise need to be sent to different people, Mediusflow enables such sending and handling.

Figure 10 shows the Purchase-to-pay process and actions performed by Mediusflow, starting with suppliers providing information regarding the purchase and ending in the paid invoice being archived.
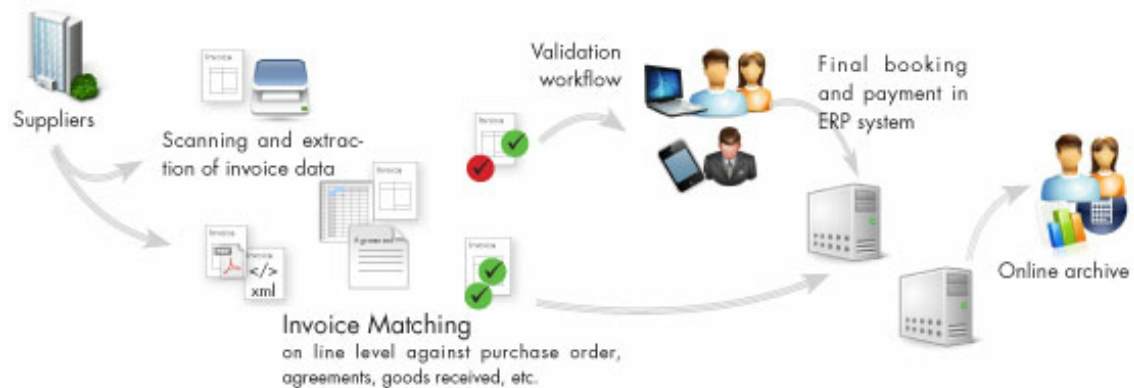
Figure 10 - The Purchase-to-Pay process. (Medius 2012)

4.2.2. More modules – The evolution of Mediusflow

Although Purchase-to-pay has been the primary function of Mediusflow so far the core function of the software is to manage flow of information in need of approving or attending to, usually in the form of documents but not limited to only invoices,. Medius calls these flows of information *Business Processes* and by expanding the capabilities of Mediusflow it is possible to improve a wider range of business processes. Currently there are six modules that can be installed and customized in accordance to customer demand.

These modules are: *Authorize, Agreement, Match, Purchasing, Sales Order* and *Workflow Studio*. Figure 11 is a graphical depiction of Mediusflow where the six modules are highlighted by the blue rectangle and the columns show the corresponding capabilities of each module. The four leftmost modules in this figure are very interlinked and make up the invoice-part of Mediusflow whereas Sales Order and Workflow Studio are a bit more standalone.
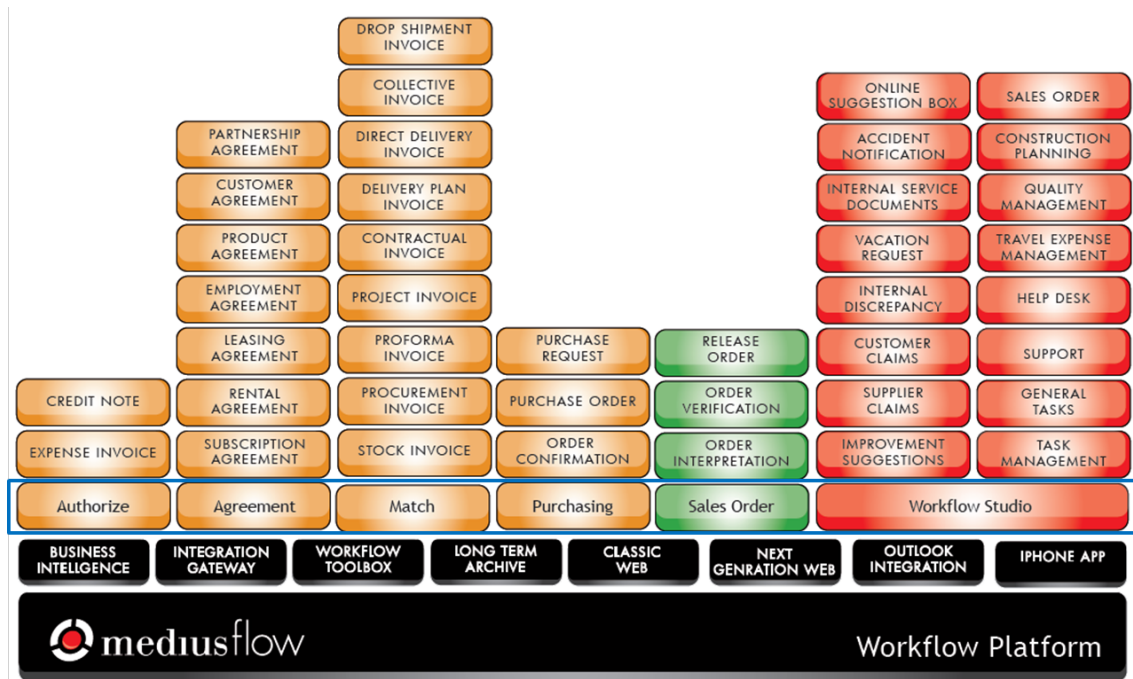
Figure 11 - The capabilities of Mediusflow. (Medius, 2012)

Authorize – In this module a user can authorize an invoice, meaning that the invoice sender receives payment. Mediusflow enables multiple people authorizing an invoice and to standardize the route of the invoice between these multiple people.

Agreement – In this module a company can store their business agreements in a way that makes them more accessible than physical storage on paper. In combination with invoice-modules it is thus possible to match invoices with agreements. It is also possible to receive reminders when agreements are about to expire, enabling the company to renew or terminate them on time.

Match – In this module an incoming invoice is automatically read and matched to purchase orders and goods receipts. If there are no deviations the invoice is then sent for authorization. If there is a deviation the invoice is sent to the appropriate person, depending on the nature of the deviation, enabling that person to focus on solving the deviation without spending time looking for deviations.

Purchasing – In this module the user can code and authorize all kinds of purchases already in the purchase phase. Thus streamlining the invoice handling and enabling automatic invoice matching, only having to handle invoices with some sort of deviation.

Sales order – In this module incoming sales orders on paper or pdf are scanned, verified and entered into the company's ERP solution and managed in the same way as EDI (Electronic Data Interchange) or e-business orders. If there is a deviation in the sales order, i.e. missing stock, incomplete delivery address et cetera, the sales order can automatically be routed to the appropriate person to be managed.

Workflow studio – This module is somewhat of a product within a product and enables flexible Business Process Management set up by the users themselves. For example if a project team member needs a document signed by all project managers, that team member can quickly create a form or document in Workflow Studio and set up an approval/input process including routing the form to the responsible project managers, enable their approval/input and then store the form globally for easy access by the entire project team. There are many other uses for this sort of system, for example vacation planning approval, travel expense management, help desk and others. In Workflow Studio a process can be initiated by an activity in another system, for example documents being scanned, incoming emails et cetera and not necessarily just by a user.

4.3.   Current delivery process at Medius

This section will provide an overview of the current delivery process at Medius, i.e. the project model used by Medius when installing Mediusflow at a customer. The overview will start with a presentation of the five overall steps and then, projected on a flow chart, drill down into the individual tasks performed under each step.

4.3.1. Overview of Medius Delivery Process

The current delivery process at Medius is called the *MWork model* and it is divided into five steps: *Pre-study, Planning, Execution, Testing* and *Closure* as seen in Figure 12.
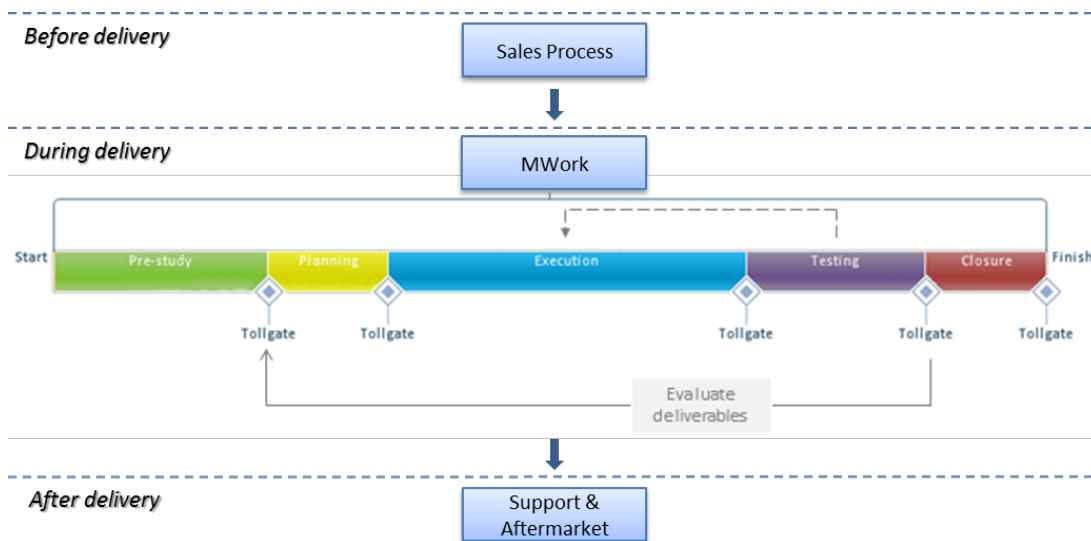
Figure 12 - The relationship between the sales process, MWork model, and the support & aftermarket (Adapted from Medius AB, 2011b)

In addition to these five steps mentioned above there are two other important processes: A *Sales Process,* before the Pre-study phase, in which the sales department sell Mediusflow to the customer and an *Aftermarket & Support* in which the customer is using Mediusflow and communicates with Medius via the *Medius Care* Support Department and the aftersales representatives.

Different projects require different approaches, mainly depending on the customer size and requirements such as ERP system used, number of invoices scanned, number of companies and such. Medius segment their customers into three different categories:

Small Business, *Professional* and *Enterprise*. Small business is mainly standardised products whereas Enterprise requires more customized solutions. As of right now each project is, more or less, carried out according to the MWork model disregarding the type of customer and the MWork model is supposed to provide an overhead plan on how to conduct implementation projects with the customer.

The five steps of the MWork model will be described in more detail in sections 4.5-4.9. As an overview, they consist of:

Pre-study – In this step, the project is handed over from sales and a Medius team is assembled. This team performs a pre-study with the customer's project manager in which requirements regarding functionality, integration and customization needs are determined.

Planning – This phase aims at establishing the project plan, bearing in mind the requirements from the pre-study.

Execution – This phase is when the project is actually conducted and Mediusflow is installed at the customer. This phase consists of a number of sub-processes: Installation, Configuration, Data capture set-up and training, Master data set-up, booking message set-up, cancellation message set-up, accrual accounting, customizations and lastly internal testing and approval.

Testing – This phase aims at letting the customer's super-users test the implemented Mediusflow, creating user accounts and letting those users test the functionality of the implemented Mediusflow.

Closure – The closure of the project contains the go-live, i.e. making Mediusflow fully operational, and the review & handover in which the project is evaluated and the responsibility handed over to the customer.

4.3.2. Flow chart of Medius' Delivery Process, MWork

To get a better idea of what the MWork model consists of, it will be presented in the form of a flow chart. Figure 13 shows an example chart where instead of stating process steps, each activity explains how to interpret the chart. The chart is to be read from the top down following the solid blue lines connecting the activities.

The chart is separated into five vertical columns, each representing a role in the delivery process with the name of the role at the top of the column. If an activity or a decision is situated in a column, it is to be performed by the role pertaining to that column. In the example in Figure 13, the first process step *Activity* is situated in the PM/App-consultant column, this means that it is the PM / App-consultant who performs this process step.
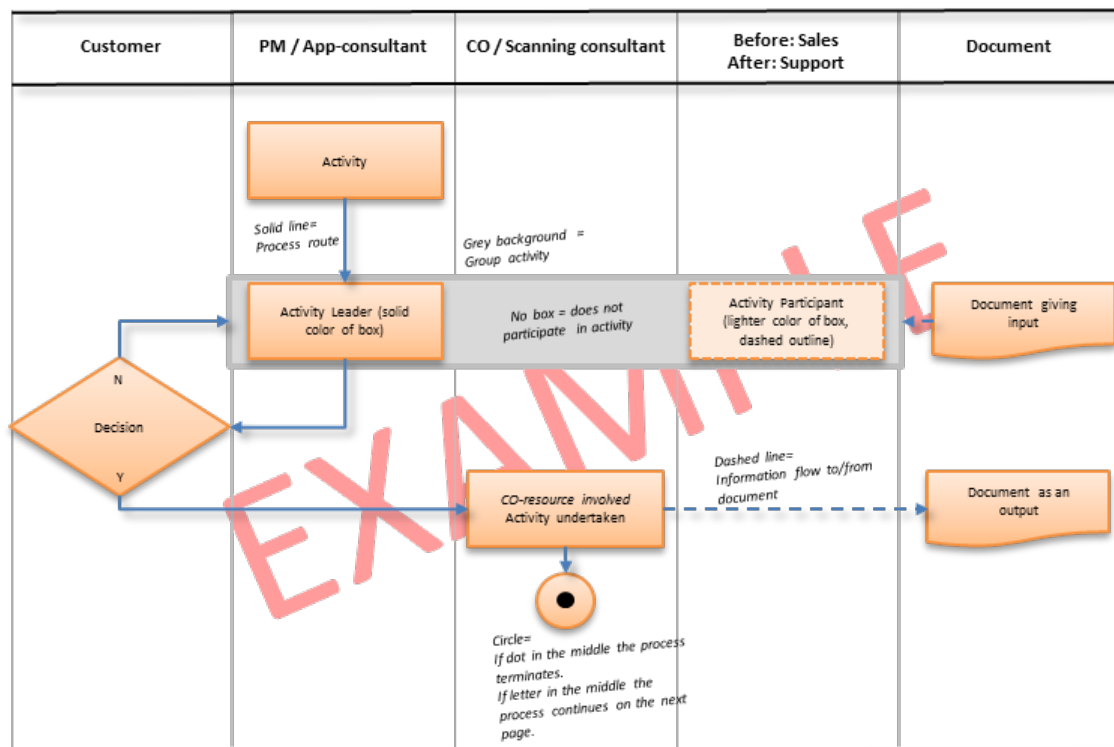
Figure 13 - Example of flow chart for explanatory purposes

The five roles of the chart are:

Customer – The customer who is purchasing Mediusflow. There is often more than one person involved from the customer's organisation, for example IT-specialists, invoice administrators, controllers or the CFO to name some of the most common. To enable a flow chart, which is easily overviewed, all these different roles are not explicitly presented. Instead, the role of the customer is basically that of the customer's Project Manager and the internal processes and communications within the customer's organisation are omitted.

PM/App-consultant – This role is the Medius Project Manager, abbreviated PM, and/or an Application consultant, shortened App-consultant, responsible for the application i.e. settings in Mediusflow. Note that the "consultant" is a Medius employee and not an external consultant. They are labelled "consultants" because they consult the customer. The reason for these two roles to be in the same column is because they often overlap and in almost every project the PM is an app-consultant. However, in larger projects there might be more than one app-consultants involved where one is the PM and the other(s) are regular app-consultants.

CO / Scanning consultant – CO is short for Central Operations which is a Medius-internal pool of Technical Consultants from where a project requests assistance during technically difficult parts of the delivery process. The technical consultants differ from app-consultants in the way that they have a more in-depth knowledge of Mediusflow, including how it integrates with different ERP-systems. There are four different departments within Central Operations: COINT, COPRO, CODES and COCUS where the CO is again an abbreviation for Central Operations and the remaining letters are short for Integration, Production, Design and Customisation respectively.

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Scanning consultant is a sort of technical consultant who specialises in the scanning software used by Mediusflow. The scanning software is used for scanning paper invoices and transforming them to electronic invoices inserted into Mediusflow.

In the flowchart, whenever there is an activity in the CO-column the *italic* header in that activity box indicates which CO departments are included in the task.

Before: Sales | After: Support – Before and after pertain to before and after the delivery process is initiated. In the first step of the flow chart, the *sales process*, this column means sales and in the remaining flow chart this column means support or aftermarket. Note that these two entities, Sales and Support, are not the same. The reason why they share a column is simply to save space since both of these functions only occur a few times in the delivery process.

Document – This column is for the project-specific documents. Generic documents such as routines are excluded. Dashed lines indicate information flow to or from documents. If the dashed line is drawn from an activity to a document, that activity generates input into that document. If the dashed line is drawn from a document to an activity, that document provides input to that activity.

The flow chart is split into three figures as seen below. Figure 14 shows the sales process, the pre-study phase and the planning phase. Figure 15 shows the execution phase. Finally, Figure 16 shows the testing phase and the closure phase.
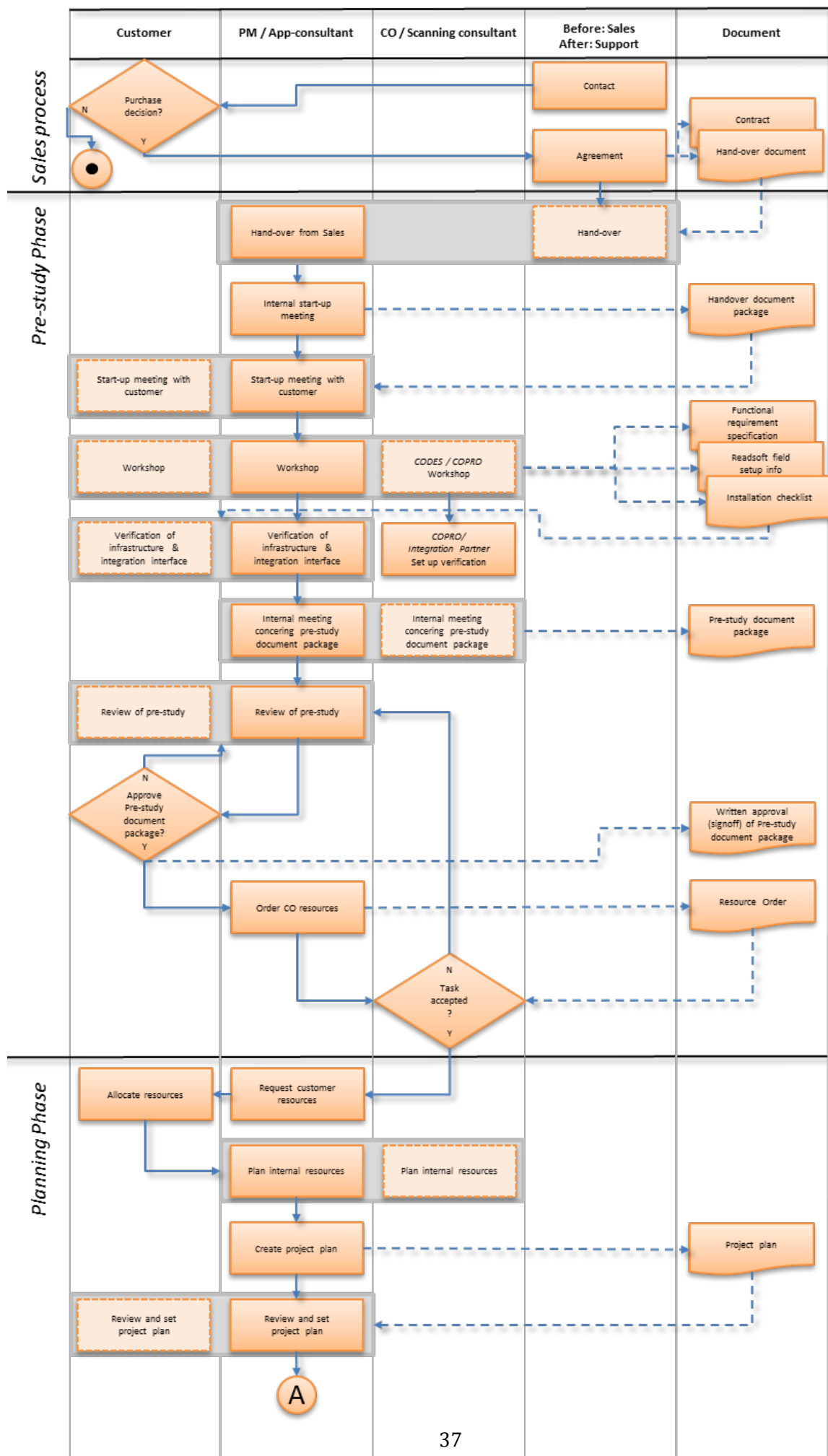
Figure 14 - MWork Flow chart part 1: From Sales Process to Planning Phase.
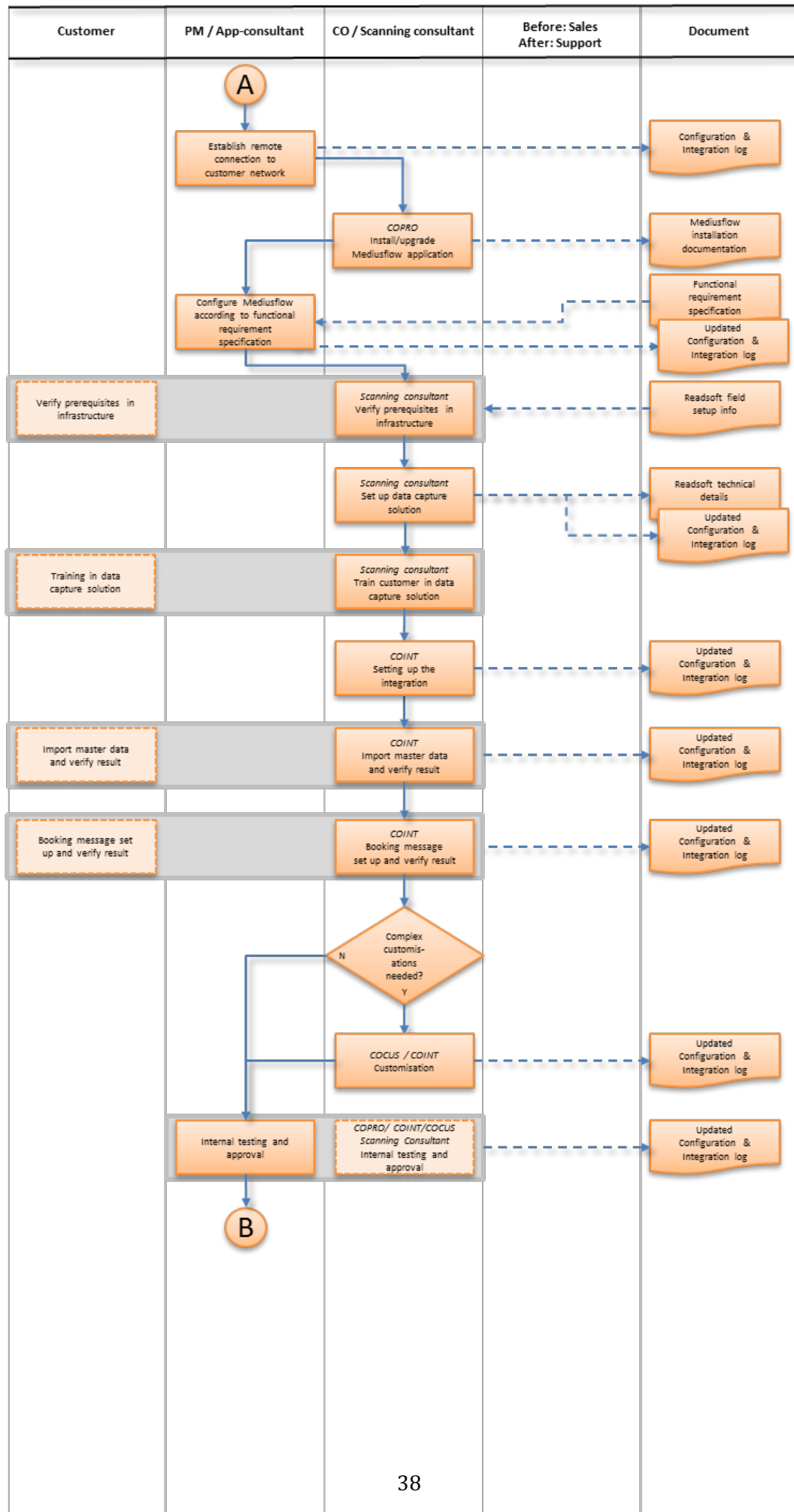
Figure 15 - MWork Flow chart part 2: Execution Phase.
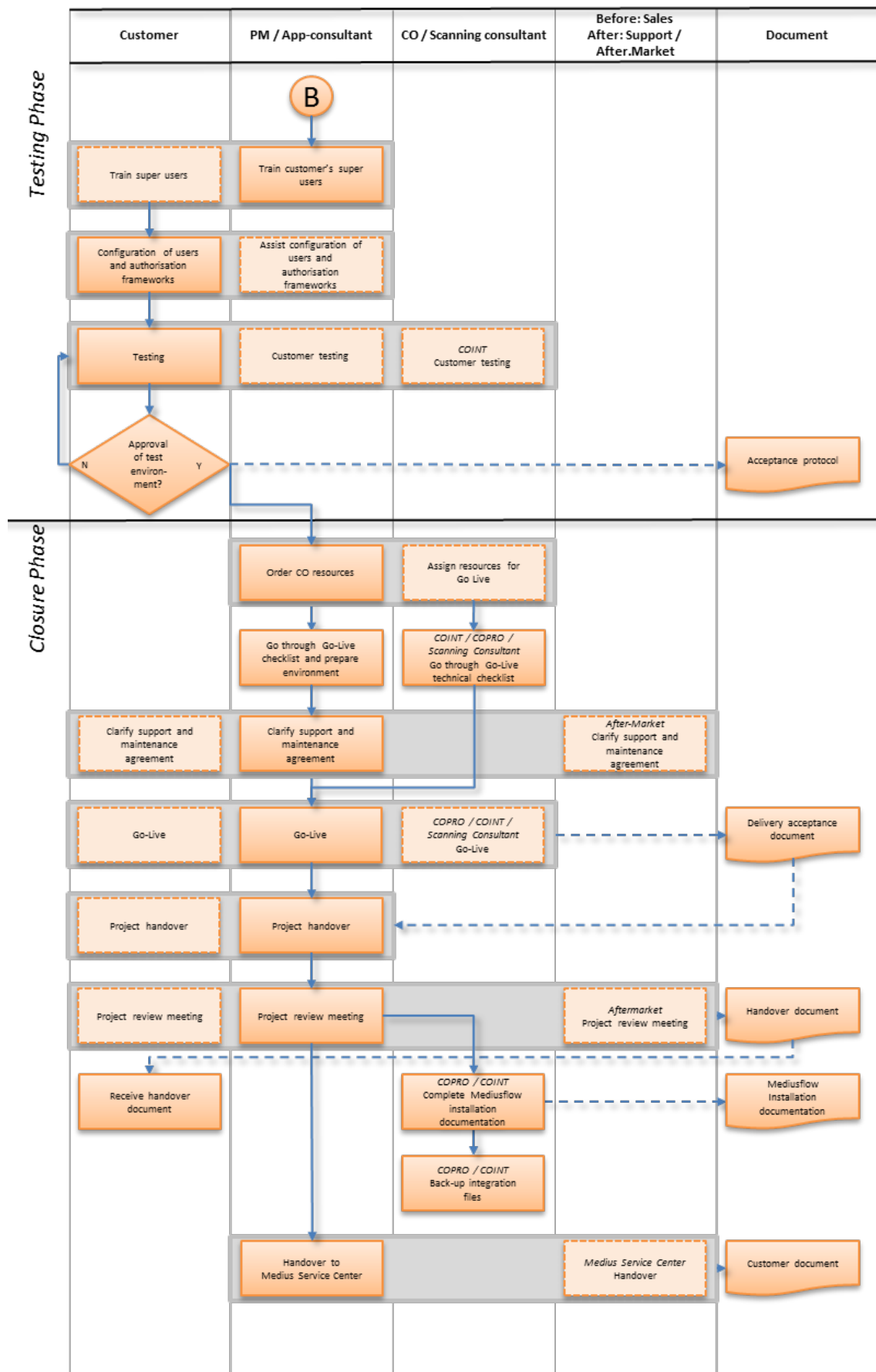
Figure 16 - MWork Flow chart part 3: From Testing Phase to Closure Phase.

4.4.   Sales process

The sales process is when Medius sells a project to a customer. Medius either contacts the customer themselves, receive a potential sale from one of their partners or are contacted by the customer. When contact is established with the customer, most of the time with a manager from the finance department, Medius often sends a sales representative to the customer to demonstrate Mediusflow. The number of such sales meetings with one customer differs and sometimes the potential customer is also introduced to a referential company, which already has a similar Medius-solution up-and-running.

Sales people at Medius state that the customers usually do not ask too many questions about the delivery process other than the lead-time of the project and how much the project cost will amount to. However, one customer explicitly mentioned that the sales people were very good at answering any questions that the customer might have had. This was even the reason why they selected Medius in the final selection between two IT solution providers. The sales price is based on an estimate and the sales personnel have a number of indicators which dictates project scope and consequently estimated cost.

The handover from sales to PM/App-consultant is usually performed via a quick meeting and a document containing the most important information about the customer.

One aspect of the handover is stated by the sales personnel to be particularly important and that is to maintain the communication between Medius and the customer, also after the contract is signed and the customer is handed over to the PM/App-consultant. The sales person has usually communicated quite intensely with the customer, often on a daily basis. If, when the contract is signed, the customer experiences "radio silence" from Medius, the customer might get anxious and feel left out. Therefore, sales people say the PM/App-consultant should contact the customer immediately after the handover to present himself/herself and to inform the customer of what the next steps will be and when these steps will be performed.

Another suggestion from the sales personnel regarding the sales process is to undertake a pre-sales workshop in which the customer discusses applicatory and technical aspects of Mediusflow with a PM/App-consultant and/or a CO-resource. This might enable a better scope that is more true to what is actually needed. The stated downside of this is the cost of sending more people to the customer.

The sales personnel also mention the importance of noticing that different departments or functions within the customer company might have different requirements regarding the functionality of Mediusflow. Such discrepancies might cause problems when configuring Mediusflow later in the delivery process, making some departments/functions hostile towards Mediusflow.

4.5.   Pre-Study phase

The pre-study phase is initiated in relation to the hand over from sales to the project team at Medius. The main objective is to define the scope for the project and to identify possible problem areas to minimise the risks. The focal activities are workshops and meetings between the customer and the project team. Especially the workshop is important because that is a meeting in which much of the functionality and integration requirements are specified. The final project plan relies heavily on the results of the workshop.

4.5.1. Pre-study according to MWork and managers at Medius

The project is handed over from sales to the PM in an internal meeting with the responsible sales person. The customer is presented for the PM and the customers´ expectations of the project are discussed, as are overall time frame and possible obstacles. The PM is furthermore provided with contact information to the responsible project manager at the customer. Once the PM has been provided with all the customer information he/she sets up a customer card on MediPedia, a Medius internal project management tool, and add project members to the project. If the project is handed over from aftermarket Medius Service Center should be informed about the project initiation.

The PM starts up the project in a Medius-internal meeting with the delivery manager to discuss time frame, budget, task distribution and responsibilities, customisations, version of Mediusflow and security requirements. Inputs to this activity are the handover document and the contract. If there are any issues to settle before the customer gets involved also CODES resources can attend to this activity. If the project is small though, there might not be a need for a start-up meeting if the PM is the only person in the project team, apart from possible CO resources.

The PM has a first meeting or contact with the customer to discuss the project, start investigating the true need of integration and inform the customer of their responsibilities and commitment to put hours into the project. This meeting also serves as preparation for the workshop and the PM gives the customer a set of documents including a technical checklist to be filled in before the workshop. If the project is small this meeting might be held in combination with the workshop, which is presented next.

The workshop, in which Medius and the customer discuss in more detail what the integration needs are and how the project will be carried out, is the responsibility of the application consultant. If needed and if the budget allows for it also CO resources might attend to this activity. Technical aspects and integration as well as organisational situation and administrative routines are discussed.

Medius then gains remote access to the client's IT-environment in order to work in it without having to be on-site. That way Medius can verify the infrastructure and the integration interface.

To complete this phase the PM specifies a pre-study document package, which he provides to the customer for review and approval. The customer then signs-off the pre-study package, i.e. the project plan including technical requirements, and the Medius PM requests the necessary resources from CO according to a defined order template.

4.5.2. Pre-study according to Medius' consultants

Depending on the size, complexity and number of people involved in the project, the customer start-up meeting is sometimes omitted. If the Medius team is only the PM, as is often the case in many *Professional*-size projects since the re-structure of CO, there is usually no need for a Medius-internal start-up meeting.

Sometimes, the project plan is discussed with the customer already at the start-up meeting or at least before the workshop. In this case, there is already something to build on when the workshop starts and it thus enables a better understanding of what needs to be done between Medius and the customer. The workshop tends to focus on technical aspects but it might be beneficial to also discuss the way in which the project will be executed.

The workshop is usually where discrepancies surface, be they integration-related or configuration-related. Integration-related discrepancies pertain to the integration between Mediusflow and the customer's ERP-system. Mediusflow can integrate with most standard ERP-systems but the customer might have a customised ERP-setup, which needs some workaround. It is common that customers with highly customised ERP-setups think their system is "standard", simply because they have not used any actual "standard" ERP-setup with which they could compare. Configuration-related discrepancies might pertain to the settings in Mediusflow not corresponding to what the customer requires or wanted.

4.5.3. Pre-study according to Customers

The overall picture that had been transmitted by the sales force of Medius to the customers during the sales phase is often somewhat different from the one presented by the consultants during the pre-study phase. Although most important areas had been up for discussion with the sales force it later turned out that some areas were not possible to go through with or would have to be treated differently from what had been presented. These areas were in all cases identified already during the workshop, where the consultants showed a great understanding and presented honest recommendations of what the customer really would need.

For two of the interviewed customers, the first activity where the customers were really involved was the workshop. The customer's preparation before the workshop was not experienced as any heavy burden, although the forms sent by Medius, containing information such as number of companies, number of invoices, type of ERP-system etc. came with little explanation.

During the workshop some customers felt that there were many decisions to be made straight away, with little knowledge of their importance. It felt as if the project was supposed to be defined during this short period of time and at a very high level of detail, even though the customers, at this point, had little understanding of the system.

Integration possibilities were not discussed to any further extent during the workshops, as Medius had already made it clear that they were going to handle that part separately, with as little involvement from the customer as possible. This was appreciated by the customer, who even stated that if integration possibilities had been discussed with the participants of the workshop they would probably not have had the technical competence to contribute to that discussion.

One customer had a small workshop with both Medius sales people and a technical consultant before the contract was signed. This reduced the risk of discrepancy between what the contract stated and what the customer really needed. That same customer also stated that the integration specifications were quite easy to understand and that they could have been even more in-depth. This was quite contrary to what the other customers had said and the reason for this could be the initial workshop.

4.6.   Planning phase

The planning phase uses the project scope from the pre-study phase as input for its activities. The purpose of this phase is to establish a project plan that can secure a successful execution of the project. Before this phase can be closed it is mandatory to get the customer to accept the project plan as an agreement to the presented activities and areas of responsibility.

4.6.1. Planning phase according to MWork and managers at Medius

The planning phase is initiated by a review of the resources that the customer is able to dedicate to the project. The resources required from the customer are however preferably already defined in the contract. It is normally estimated to be twice as much as the effort dedicated by Medius. The customer furthermore receives a document specifying their responsibilities along the project. If insufficient resources are detected this will if possible have to be dealt with by extra time from Medius' consultants. It will then also have to be analysed upon its effect on the project plan.

When the customer resources have been allocated the project manager plans Medius resources, if needed with input from CO. As resources have to be ordered from CO they need to be estimated by the PM and ordered accordingly. To make this task easier there are models presenting the activities that have to be carried out and how they are best synchronised with the CO-resources. Once resources have been ordered the PM will receive an answer from CO within 24 hours specifying the lead-time of the resources and the estimated days CO will need to complete the tasks.

Having resources allocated both from the customer as well as from Medius the project plan is created. For this task there are some templates available in the MWork document folder. It is especially important to consider the resource availability, any customisations as well as implications from the pre-study risk analysis. There are also possibilities to discuss any adjustments of the budget before finalising the project plan.

The final step towards a complete project plan is to review and set the final project plan. This is done by the PM in collaboration with the customer. The plan is presented to the customer to get a common understanding of the upcoming activities. It shall be pointed out that the plan is based on the set scope for the project and if any changes are to occur this will require additional time for planning, thus the project plan shall be adjusted accordingly. Once a common understanding for the project plan has been established the customer accepts the project plan and the planning phase is completed.

4.6.2. Planning phase according to Medius' consultants

The general feeling among Medius' consultants is that the project plan is not very firm and the projects are almost always following a different path than the one established during this phase. Reasons for this might be that it is many times impossible at this stage to know the outcome of each activity and how that will affect later events. Delays can sometimes occur due to the lack of or long lead-times of CO resources from Medius, but the feeling is that it is almost always due to difficulties from the customer to dedicate adequate resources at each stage.

To improve the professionalism some consultants argue for a stronger focus on reviewing and frequently updating the project plan along with the project progress. This would also make the project continuously clear to everyone involved. It has even been presented that in today's situation the initial project plan easily transforms into a checklist rather than a guiding schedule. However all consultants agree that it could be difficult to continuously update the project plan since neither the project group nor the customer is willing to prioritise such activities of updating and communicating new project plans as they normally work with a tight budget.

Many of the tasks that, according to MWork, should take place during the planning phase actually take place in the pre-study phase. Examples of such are that the resource

allocation is discussed and many times set already in relation to the workshop by the project manager in collaboration with the customer's project manager. Furthermore, if resources are fairly controlled and there are no possible objections from CO or any partner the resource plan is communicated along with the pre-study package.

It should be pointed out that the size of the project determines the efforts placed in the planning phase. Customers from the segment Professional normally prefer that Medius spend more time on executing activities rather than planning them, whereas Enterprise customers place higher demands on a thorough follow-up and documentation. Enterprise customers furthermore appreciate updates of the project plan and being informed every two weeks or so of the status of the project as well as what is expected of them and Medius respectively during next period of time.

4.6.3. Planning phase according to customers

One customer felt after the project that they should have involved more people from their own organisation already at this stage to get more widespread input to the project. It was explained as if you drive this kind of projects alone you become utterly responsible towards your own organisation for the success of the project. Furthermore you have to take many decisions that you later will have to justify to your colleagues and there is a risk of colleagues questioning why things were not done differently. If on the other hand more people would have been involved earlier, the needs and wishes of more departments could have been satisfied to a greater extent. On top of this the one person driving the project from the customer's side easily become the early super-user of the system and as such has to dedicate much time as an in-house support function, which can be experienced as a quite heavy burden.

The same customer also felt that the project plan was very clear at the beginning of the project and Medius' consultants showed a great interest in updating it and communicating it frequently. However later Medius' interest for the project plan faded and instead of updated it turned into an activity list. The customer's project manager explained that an updated project plan was not really for his own interest, but rather a valuable tool for him in his communication of the project progress to the internal organisation. Still the customer clearly presented that an updated project plan is best be based on basic information and it should not be updated at the expense of other value creating activities. This opinion was also shared by one other customer.

Another customer expressed his satisfaction with the low detailed project plan in their particular project, as it increased the project flexibility and helped to avoid unnecessary bureaucracy. It was however appreciated that dates for the overall activities were updated frequently or whenever there were changes in the time plan. It was believed that this was the easiest and best way to continuously work with the time plan as the actual dates for activities are many times the only concern for the customer in terms of what has an impact on their daily operations.

All customers felt that their input and concerns about the project plan were well taken into account already in the workshop during the pre-study phase. The general feeling was though that the time plan stated in the planning phase, even though it sounded reasonable at the time, had very low accuracy considering the actual evolution of the project.

4.7.   Execution phase

During the execution phase Mediusflow is installed and configured at the customer's servers. The purpose is thus to implement Mediusflow in accordance to the defined scope. Furthermore Master Data is evaluated and verified together with the customer.

4.7.1. Execution phase according to MWork and managers at Medius

The first step of the execution phase is that COPRO installs Mediusflow in the test-environment at the customer's servers. For this, the application consultant will have to set up a remote connection to the customer's network. When the installation has been completed the application consultant configures the system in accordance to the *Functional Requirement Specification*, a document produced in relation to the workshop. The customer is involved in this activity if any input was missed during the pre-study phase.

Next, the scanning consultant installs the data capture solution, i.e. the solution that scans invoices and makes them readable to Mediusflow – the most common of them being a program called ReadSoft. The scanning consultant furthermore trains the customer in how use it properly.

After that, Mediusflow is integrated with the customer's ERP-solution. There are different kinds of integration depending on if Medius already has an existing integration solution with the customer's ERP-system or if a new one has to be developed in-house or in collaboration with a partner.

Once integrated, master data, such as supplier information and currencies, is copied from the ERP-system to Mediusflow. After the set-up of master data the booking messages are set up, meaning that Mediusflow is able to send invoices back into the ERP-system for booking and payment after they are approved. The transferred information is verified and it is made sure that Mediusflow reflects the information in the ERP-system.

Lastly, any complex customizations are performed if needed and the entire Mediusflow setup is tested by Medius in the customer's test-environment until all parties agree that functions and their dependencies are working as expected.

4.7.2. Execution phase according to Medius' consultants

Consultants rely on COPROs' expertise in installing Mediusflow in the test environment. The execution phase is therefore in general not experienced as technically complicated, as long as no unforeseen events occur.

Different consultants work with documentation in different ways. Some prefer to have one large document containing all information of actions from both CO as well as from PM. Others instead prefer to separate the documents per departments to make it clearer and easier to follow up.

The consultants recognize a resource issue with scanning consultants to provide training in ReadSoft. They present this as a bottleneck issue since the scanning consultants are often out working and are many times hard to get hold of even to answer to the most basic queries. A suggestion was made to develop ReadSoft competence at the internal Support Center to avoid having projects on hold just because of lack of resources.

When customisations are needed the consultants are very pleased with the work of COCUS who they feel are adherent and act proactively, coming with recommendations and directions that make the consultants role as a link between the customer and COCUS easy. The consultants do however appreciate if customisations have been discussed already earlier in the project, e.g. during the sale phase, as the customers' lack of understanding for additional customisations and on-top activities otherwise potentially can cause some minor discussions.

About the only issue experienced with the internal testing of the system is the coordination of resources. The different departments CO and consultants have little insight in what the other part is really testing and to what extent. Furthermore the general feeling is that for this particular task it can sometimes be hard to get hold of CO resources when they are needed.

4.7.3. Execution phase according to customers

The customers trusted much in Medius' expertise when it came to setting up the remote connection to their system and install or upgrade Mediusflow and they preferred not to activate their own organisation more than needed. They did however assign the necessary in-house technical competence to assist Medius if requested. The issues that were detected during this task were successfully handled by Medius, as was expected by the customer since Medius had early in the project taken on responsibility for this activity.

Regarding the ReadSoft training the customers were unified in their opinion that they all experienced the training to be valuable and useful. However they all clearly stated that the training session was very quick and too many details were presented at once, which made it hard to remember them all afterwards. Some customers would have appreciated if time had been given to try out the basic functions after half a training session and later continue with a second training session for deeper knowledge. This was though the case for one customer, but even so, the period directly after the training sessions still failed due to the fact that ReadSoft was not available at all their locations immediately afterwards. Also, all interviewed customers stated that although the project milestones were pushed forward, the ReadSoft training sessions were not. This resulted in the ReadSoft training being held a little too early in the project life span.

Two customers feel that most of the queries they experience today relate to ReadSoft and they encourage Medius to develop ReadSoft knowledge among their support to avoid relying on the few persons at Medius that today possess this kind of knowledge. Today the feeling among the customers is that there is help to get, but it can be very hard to get hold of those particular persons at Medius with ReadSoft competence.

4.8.   Testing phase

The testing phase can be divided into two parts: train the customer and make them responsible for the solution set up and furthermore let the customer test and verify the solution set up. This phase will result in an acceptance protocol in which the customer approves that the test results are according to expected outcome. To make the testing part easier there are a number of test protocols at hand, however it is recommended to also use a project-by-project based test protocol, where the customer is able to test their particular solution.

4.8.1. Testing phase according to MWork and managers at Medius

The first task is to train the customers' super-users in using Mediusflow. The goal with this task is to make the super-users capable of later carrying out the testing themselves. The application consultant is responsible as a teacher and thus for preparing the customer and Mediusflow with relevant training material, e.g. scanned invoices and corresponding incoming deliveries for different scenarios. The application consultant is furthermore expected to encourage the testing to assure that the customer has understood the importance of this task and how it can improve the efficiency of the project process.

When the super-users have been created they will carry out the customer configuration. This means that they will set up users in the system, their authorisation framework as well as exception types and other parameters. If any questions arise it is good if the application consultant is available for support and guidance, preferably scheduled in advance.

The next step is to perform the actual customer testing of the system. Although carried out by the customer it is important that all parties are available to support. The PM's responsibility is to make sure that the customer tests the environment according to Medius' test protocols and that they also, as presented above, create their own test cases to verify expected behaviour and results. The application consultant and COINT can assist the customer in the testing activities if such assist is specified in the contract. Since CO resources are ordered in advanced the testing activities are preferably performed during a specified period of time with a clear deadline for this task.

The customer concludes the testing phase with an approval of the test environment. It is the project manager's responsibility to make sure that the customer signs the acceptance protocol. If there are open issues to the test environment or something in the design, logic, etc. is wrong the project might have to be brought back as far as to the pre-study phase, depending on the magnitude of the issue. In any case a change request is created, which defines if the issue is to be dealt with right away or to be handled in a separate project later on. Furthermore the implication this will have on the project plan and the budget must be discussed and sorted out.

4.8.2. Testing phase according to Medius' consultants

The consultants believe that the customer training is performed at the correct time in most projects, as the integration tests have been performed and the flow description is in place. In general one could say that the project manager makes sure not to train or test until he or she is certain that everything works. The consultants furthermore argue that the training in general is sufficient and that the customer has great possibilities to develop a deeper understanding on their own, using the manuals and training material provided to them during the training. As this also is a cost item for the customer they seem to be satisfied with the time dedicated to the training. Some customers might call for support and help, however they rarely require an additional full day of training.

The solution description in combination with training material in the form of manuals is the foundation of the training and focus lies on making the customer familiar and comfortable with it. However some consultants point out the importance of also providing the customer with PowerPoint material so that they easily can go back and find answers to their uncertainties.

For the testing activities the general test protocols are considered to be a reasonable starting point, however all consultants emphasise the importance of explaining to the customer that they need to build their own test scenarios and test protocols to assure that their particular situation is reflected in the testing. This is due to that the consultants possibly cannot picture all scenarios for every customer.

In general the consultants are satisfied with the testing phase and almost only point out the issue with customers not always understanding that they have the greatest responsibility in this phase. It is common that this phase transforms into a slow moving process as the customer realises that they do not have the sufficient time to dedicate. It was even suggested that maybe Medius should take a more active command and force the customer to move ahead by setting milestones, booking days for testing and setting time slots to discuss open issues. As the testing phase requires a sign-off of an acceptance test protocol by the customer the project is halted if the testing activities are not completed in time.

4.8.3. Testing phase according to customers

For the testing phase the customers dedicated much resources and involved many colleagues. This made the prestige of this task even greater as this was for many employees the first time they came in contact with the system and their opinion regarding the system was of greatest importance to how it would be received among the organisation.

The training session given to develop customer super-users was experienced as detailed, technical and not very pedagogical. One customer even stated that although Medius' consultants were very competent in their field they lacked some teaching skills. This argument was once again backed up with the fact that most of the pupils were completely new to the system and maybe the training session should have been set out to develop basic handling skills rather than a deep technical understanding. Another thing that made the training session fail in this particular case was that the day before the training was planned to take place the integration failed. This affected the reputation of the product throughout that particular organisation in a negative sense.

One customer stated that Medius' test protocols were not sufficient to test the system whereas another customer said they were indeed quite sufficient. The test-protocols contain many standard operations but since there seem to be exceptions in every project, there is still a need for customers to set up their own test protocols. Especially in projects where the customers' organisation is large or where there are multiple company entities involved, training super users well can pay good dividend. This was the case with one customer where two super users trained by Medius trained the rest of their organisation, more than 200 people.

4.9. Closure phase

The closure phase is the final step in the actual project. This is when the system is moved to the customer's production environment. The main event is the go-live, followed by the handover from the project team to the customer and the handover of the customer to Service Center and MediusCare. The phase is closed when the customer signs an acceptance of delivery.

4.9.1. Closure phase according to MWork and managers at Medius

To start the closure phase, the PM orders CO resources for the go-live activity. The PM, along with the necessary CO resources, goes through the go-live checklists. After that the support and maintenance agreements are gone through with the PM, the customer and the after-market department at Medius.

The main part of the closure is the actual go-live, where Mediusflow is, in ERP-terms, moved from the customer's testing environment to the production environment. In other words, Mediusflow is made operational and the customer starts using it for real with actual invoices. Necessary activities, such as profile creation in Readsoft, are also carried out. Once Mediusflow is operational in the production environment invoices are run one-by-one to make sure that everything is working as expected.

When the go-live is completed, CO conducts documentation and installation logs and hand them over to the customer. Medius has a hand over meeting with the customer and the customer is then supposed to run the system themselves. The PM also has a handover with the Medius Service Center, which is the Support function to which the customer can direct any future inquiries.

4.9.2. Closure phase according to Medius' consultants

Sometimes ordering the CO-resources can take some time, thus delaying the possibility to go-live. After the go-live, there are sometimes open issues, which need to be adhered to. Most of the time, these issues are minor and can be handled by the application consultant, or in some cases by CO resources, shortly after go-live. However, there are a fraction of instances when minor details make the customer refrain from accepting the go-live, thus hindering closure of the project.

The meeting after the go-live is somewhat redundant since the customer has been present at all the important stages of the project and has received training. Mostly, there is a need to hand over any documentation or logs and to introduce the customer to the support function.

After the customer is handed over to support, there are still some instances when former customers circumvent regular support channels and ask questions directly to the application consultant or CO resource who were involved in installing Mediusflow with them. Also, the handover to aftermarket could be improved in terms of what could have been done better during the project and how big of a possibility there is that the customer wants to purchase additional Medius solutions.

4.9.3. Closure phase according to customers

The go-live activity had few unexpected errors and the ones that even so were identified got solved within the day. What was presented though was that the go-live happenings had little reflection of for example the test protocols and thus gave no extended feeling of a secure system. It was therefore suggested that it might had been better to run through a special go-live protocol instead of treating the real incoming invoices.

For one customer some major known issues were still present at the point of go-live, which made the customer insecure of handing over the project to Medius' support function and they instead preferred to stay in contact with the project team at Medius, to

assure qualitative support. As it had been agreed with the customer that Medius would solve the remaining issues the contact between the customer and the project team at Medius went on for one month after go-live. This made the handover from Medius' project team to the customer somewhat arbitrary, as was also the case for other customers, and there was no particular point in time when the project was formally handed over to the customer. This was however very appreciated by the customer, who even claimed that if it would have been any other IT supplier they as a customer would probably had been left with the support function much earlier.

When the handover to MediusCare finally took place it was very informal in every case and although a first approach was made by Medius, the trailing activities have been weak or absent. In one case the customer has not yet been provided with support terms and in another case the customer has only received an e-mail with some vague information and no further actions.

4.10.   Inputs on Project Administration:

On top of the steps of the MWork model, consultants and customers were asked about their opinion on overall project administration. This input pertained to three particular topics: Changes of scope in a project, Gap between customers' believed needs and actual needs and Gap between customers' desire and Medius perception.

4.10.1. Change of scope in a project

Consultant's opinions

The consultants state that the scope almost always changes during the project, compared to what was agreed in the contract. During the sales process, consultants perceive that the actual requirements are not discussed in enough detail and this forces the scope to change. Sometimes this might make the consultant feel as if some expectation management is needed, lowering the customer's large expectations to fit reality, seldom a pleasant task. One idea, which came up in an interview, was that the sales process includes a checkpoint where the sales person discusses the potential sale with someone from the delivery team, e. g. an experienced PM/App-consultant and/or a CO-resource.

More than one consultant also pointed out that it usually takes quite a long time for the customers to test the system themselves, often more time than anticipated. During this time the customers often request support and the PM/App-consultant is more or less frequently receiving questions from customers. This time spent helping the customer is seldom billable and as the project is postponed, the cash flow is affected negatively. Ideally, all possible problems should be addressed already in the workshop and any other changes should be placed outside of the scope.

Customer's opinions

Customers state some of the integration requirements changed during the projects but that Medius seemed capable of adjusting these based on previous changes for other customers. One customer stated that there were quite large changes to the scope and believes the reason for this to be poor planning regarding which scanning software to use.

The customers interviewed had different reasons for choosing Medius over competing systems but what set Medius apart was to a large extent the ability to match rows on the invoice, the price of the project, the delivery capability and the reputation and

geographical reach of Medius. Two customers also stated that the Medius Sales People were very good at answering questions and generating quick responses to pre-sales questions.

Customers also state that the time allocated for their own training, and the training material provided for these events, are inadequate. More time to test is usually needed and the material should be more pedagogical and more extensive.

4.10.2. Gap between customers' believed needs and actual needs

Consultant's opinions

Almost every project has this gap, according to the consultants. It is mainly technical requirements that differ but there might also be discrepancies between what the customers' managers who ordered Mediusflow think of the program and what the people who will actually handle the invoices think of it. Electronic invoice handling is, according to one consultant, fairly novel compared to many other IT solutions and it might therefore be difficult for customers to visualise a future state to strive for. Therefore, the customer employees working with invoice handling is sometimes sceptical at first but after using Mediusflow for some time they usually see the benefits.

Customer's opinions

All customers state that there might be some discrepancies pertaining to the integration needs but also that there are customer-internal discrepancies in expectations from different departments. One customer stated that they realised after the project was closed that some users did not like how the system was set-up. These concerns could have been heard and mitigated in the pre-study phase but unfortunately the customer did not communicate enough internally to do so. This has led to a situation where some of the customer's users are not pleased with Mediusflow and see it as a lesser way of performing their invoice handling.

Another customer stated that they had performed quite an extensive internal pre-study where the opinions from all relevant departments had been heard even before choosing supplier of electronic invoice handling software. After having collected all these different opinions, Medius was chosen.

4.10.3.   Gap between customers' desire and Medius perception

Consultant's opinions

Consultants argue there might be quite large discrepancies. One idea of how to solve this might be to involve an app-consultant or CO-resource already in the pre-sales phase, i.e. when negotiations with potential customers are undertaken. Another idea is to have the customer install a standard solution first and then build in further adaptations. Consultants argue this would require good customer relations, as a happy customer is more likely to extend the scope and branch off new projects.

Customer's opinions

One customer was very happy with what Medius delivered and said that it, to everything significant, was in line with what they expected it to be. Another customer was a little more concerned that Medius had changed the scanning software and recommended a SaaS solution although it would have been better install Mediusflow locally at the

customer. The customer derives these discrepancies from poor communication in the sales process and workshop.

4.11. Inputs regarding overall future improvements

This section briefly presents the inputs from consultants and customers on how MWork can be improved in the future.

Consultant's opinions

Consultants believe that for the future it will be important to grow the enterprise segment and to start sales of Mediusflow Studio.

Today, consultants think ordering CO resources is a quite gruesome process as it might take a lot of time and effort. Sometimes it is frustrating when the technical consultant of a project is situated in another Medius office. It is so much easier when the staffed technical consultant is working in the same office as the PM/App-consultant because then they can just walk over to each other at the other side of the office instead.

Another thing which consultants believe might become increasingly important in the future is for Medius to be able to aid customers in improving other processes than their invoice processes. An experienced PM/App-consultant could analyse a customer's business processes to suggest improvements and Medius-provided IT solutions.

Customer's opinions

Customers are overall impressed and satisfied with how Medius has conducted the projects. They perceive Medius as communicative, easy to ask questions to, helpful and concerned with customer satisfaction. One customer said a more frequently updated project plan might have helped, if not for the project then at least to be able to communicate internally to management and the financial department.

4.12. Consultants overall input on Customer Satisfaction and Profitability

This section will present the consultant's input to the framework as derived from the interviews conducted. Firstly, the input on customer satisfaction will be presented, secondly the input on profitability and then thirdly, miscellaneous input.

4.12.1. Customer Satisfaction

One way of maintaining customer satisfaction in an increasingly fierce competition is, according to consultants, to be innovative and further develop the current software. This would pertain to increased graphic user friendliness as well as increased functionality.

SaaS-solutions, and remote access through smartphone apps, might be increasingly important as more and more companies choose to have their other IT sourced through the cloud.

Consultants also perceive product knowledge and professionalism as increasing customer satisfaction. This might include correct scheduling, personal relations and establishment of trust.

An idea, which was presented by more than one consultant, is to involve App-consultants already at one of the pre-sales meeting to better capture the customer's needs and requirements. For example regarding integration possibilities but also to present a simulation of Mediusflow, giving customers a better understanding of how Mediusflow can actually help their business. However, allocating such resources might of course be costly.

According to consultants, flexibility during the actual delivery process is important for increased customer satisfaction, both in terms of project management and product features. Mediusflow is considered user friendly and easy to reconfigure, there is almost never a requirement that is not configurable, according to consultants.

It is also important to communicate project status to the customer, both what is going well and what needs attending to. The sooner a potential problem can be addressed then the less of a problem it will be. Consultants usually communicate remotely via email or phone. When making decisions via phone, consultant usually request written verification via email for documentation purposes.

To maintain or increase customer satisfaction after the implementation is done, consultants emphasize a well-functioning support department and an after-market department which offer customers value through continuous follow-ups and additional Medius services. Today, some customers complain that they are not completely happy with the support function and try to circumvent them by directly contacting "their" old PM/App-consultant.

4.12.2. Profitability

Consultants interviewed state that adding more modules to an implementation project will increase profitability. However, since the scope is usually set it is difficult to add anything. Examples of added features could be increased number of modules or overtaking management of customer's ERP. In addition, there are instances when the contract states one type of integration but when the consultants implement Mediusflow there is a need for additional integration that might be costly. The consulting hours spent on fixing such integration might not always be billable. Therefore, being able to foresee and mitigate such integration surprises might increase the profitability.

One additional idea, which surfaced during the interviews, was to look into which solutions or configurations are standard for a certain type of project and thus "modularise" the offerings to fit certain types of customers. These "modules" could then be modified-to-fit according to the individual customer's requirements.

Consultants argue that better profitability, through time saving, can be obtained through better documentation of earlier configurations of Mediusflow so that when a configuration is needed the consultant does not have to "re-invent the wheel". Usually the consultants learn such configurations from each other but as the organisation grows there will be more difficult to spread such knowledge, resulting in double-work.

Regarding capacity management, some customers try to close projects as soon as possible whereas other customers try to extend project duration. There might be a number of reasons why but it is important to close projects so that consultants can focus on the next project. If not, consultants might not be able to allocate an adequate amount of time to each on-going project. Speaking of capacity, consultants state that CO might be generally overburdened and that it is difficult to request CO-resources in time. This does indirectly affect customer satisfaction negatively since customers might need CO-

assistance at critical stages such as testing. If these resources are not available the customer might need to postpone critical events. One way of reducing this hardship is to allocate CO resources from the same office as the PM/App-consultant, whenever possible.

Regarding time management, many projects seem to exceed budgeted hours when it comes to customer testing. Although the number of hours allocated might be enough theoretically, customer users still need to attend to their normal business while they are testing the system. Thus, the work burden might increase quite a lot and the testing phase is involuntarily extended. It is important for customer satisfaction to adequately communicate this and to provide pedagogical material and support, which helps the users to test and learn Mediusflow.

To increase profitability, consultants suggest additional sales to already existing customers. Since these customers are already familiar with Medius it should be easier to sell additional functionality to them than to contact new customers. In order for this to work there needs to be a well-designed hand-over from PM/App-consultant to the after-market department.

In addition, it is important that the testing phase, or any other project-phase for that matter, is kept within the budgeted time frame. Otherwise, consultants are not able to close projects and cash flows are impacted negatively.

4.12.3. Miscellaneous

Consultants argue that it is difficult to cut costs other than to try to avoid unbillable consultant hours logged to a project. One way of mitigating such hours could be to include an App-consultant and/or CO-resource earlier in the sales process, before the contract has been written.

In order to increase sales, there is a possibility to suggest additional sales during the workshop in the pre-study phase.

One interesting idea that came up was that Medius could offer to be an outsourcing partner for opening, scanning, coding and sending invoices directly to customer's Mediusflow. The economy of scale gained from centralising such activities could offer customer potential for cost-reduction.

4.13. Customers overall input on Customer Satisfaction

This section will present the customer's input to the framework as derived from the interviews conducted. Firstly, the input on customer satisfaction will be presented and secondly, miscellaneous input will be presented.

Note that the customers were not asked any questions regarding profitability. The reason for this is because profitability pertains to Medius and not the customer.

4.13.1. Customer satisfaction

According to one customer interviewed, it is important for a company providing an IT solution to find a good compromise between width and depth of the product/service provided. This was defined as the product/service being generic enough to cover the necessary business areas – width – but also customisable to perform well enough in critical areas – depth. The customer used an analogy of the paperclip-shaped Microsoft Office Assistant, "Clippy". In this customer's opinion Clippy was good for routine tasks but

as soon as he wanted to do something a bit more complex, Clippy would misunderstand and suggest things that were not at all relevant. This would be an example of when width surpassed depth.

It is difficult for the customer to grasp what they actually need, especially when dealing with a "wide" IT solution. Different departments of the customer might have different requirements and/or visions of how the IT solution should work. It might be beneficial for the customer to be able to see a simulation, or mock-up, of Medius in use to help understanding. It is also very important for the sales people to communicate what the system can do without emphasising on future functionality. According to one customer interviewed, many IT sales people tell grand stories of how future versions of a product will work but the customer is more interested in the functionality of today's version – the one they are paying for.

On top of technical requirements, customers seem inclined to judge a potential IT solutions provider based on reputation. All of the interviewed customers had heard of Medius through business connections, two had even been monitoring the electronic invoicing-industry for some time before deciding to go with Mediusflow.

Another aspect that could improve customer satisfaction before the delivery process would be to include a technically knowledgeable person in the process before the contract is signed. This would reduce the risk of the contracted technical requirements being the "wrong" ones. Any amendments to the scope mid-project might require approval from managers and such a decision process always takes time and might jeopardise the project deadline. Furthermore, deciding to buy an IT solution is not something that is done in an afternoon so in order to make the customer satisfied, the provider must be patient and supportive during the whole process and be able to give input on what the customer might need.

The training and testing is one of the most important aspects influencing customer satisfaction during the delivery process, according to customers interviewed. It is in the testing and training phases that users are familiarised with Mediusflow and their first impression often sets the tone of how they will perceive and work with the system later on. It is important to remember that although the customer's project manager might be in favour of the new IT solution, there might be other users within the customer's organisation who are a bit more sceptical to it. A poorly conducted training might make these users loose interest and might also offset possible gains in productivity.

Furthermore, all customers involved have stressed the fact that communication is the most important factor influencing customer satisfaction during the delivery process it is important for Medius to be available during the implementation process. Both communicating proactively to let customers know they are on top of things but also to respond to any questions that the customer might have. One customer said that they felt as if Medius, on a few occasions, did not have enough internal resources allocated to the project, that especially the CO-resources were tied up. The customer suggested that Medius design their organisation as they do Mediusflow, i.e. role-based rather than user-based, to reduce the need for individual's availability.

Regarding support, the interviewed customers all said it was important to have a well-functioning support and after-market function. Customers would like a personal support representative but they still think rapid responses are even more important. If Mediusflow is down it is difficult for customers to pay their invoices and failure to do so might result in economic problems.

Customers also seem positive to the idea of adding functionality to their existing Mediusflow or to install further Medius-provided solutions. They think that the aftermarket service visiting them 6-12 months after implementation is a good idea. However, customers feel that undertaking an IT-project is quite demanding, often requiring nearly double the amount of work compared to normal operations. Therefore, customers feel they need some time to let the implemented IT solution become norm in the organisation before undertaking any new IT-project.

4.13.2. Miscellaneous

One customer specifically pointed out during the interview that Mediusflow is not very user friendly. The customer thought it was a little difficult to fully utilise the functionality of Mediusflow and that the built-in help-section provided little or no assistance.

5. Analysis

This chapter contains the analysis and is where the theoretical framework is combined with the empirical data in accordance to the abductive research approach described in section 3.1.

The chapter is divided into three sections, corresponding to the three time phases of the framework: Before a project, During a project and After a project. Each time phase is split into the four parameters: Technology/Product, Service, Organisation and Customer Interaction as described when introducing the framework. The chapter is then summed up by the populated framework.

5.1. Before a project

This section will present the before phase of the framework. It is split into four headings corresponding to the four parameters of the framework.

Technology/Product

Regarding technological and product-related aspects, for IT suppliers in particular, a great deal of focus before initiating any project is on the R&D department. As mentioned by Artto & Wikström (2005) the importance of short product development cycles and measurements of product development strategies will have an impact on the performance of the business. Therefore the before-phase should reflect the overall company strategy in its product development activities.

The product development does not have a direct link to any particular project however a strong product development department can yield competitive advantage and differentiate a company from its competitors, as discussed by Artto & Wikström (2005). This could thus increase sales through an increased number of won projects. Consultants said in interviews that one of the reasons for Mediusflow's success is its user friendliness. Although Mediusflow might be more user friendly than many ERP-systems, one customer explicitly pointed out that the Mediusflow interface was not user friendly at all. On the other hand, another customer thought Mediusflow to be quite user friendly and did not wish to see user-friendliness impairing functionality. As consumer electronics are becoming more and more focused on user friendliness, perhaps professional systems require doing the same. It is important to imagine being in the customer's shoes, so to speak, and understand how the product can generate customer value.

One interesting product-related aspect that was mentioned in interviews with both consultants and customers was the possibility of showing the customer a functioning test-version of Mediusflow before the actual installation and set-up of Mediusflow in order to ease understanding of how the system will work. This can be comparable to a test drive of a new car or looking at a drawing of a house before building it. Artto et al. (2008) discusses the use of pre-delivery services to increase competitive advantage and such a test version could accomplish just that. Such a test could either be carried out on an external laptop, brought by Medius, or in more advanced cases a test-version installed at the customer. However, the latter option requires much of the same instalment as a full-

scale project would require and if the customer is not willing to pay there might be a blow-back in profitability for Medius.

Service

Regarding services offered in the before phase, Artto et al. (2008) argue there is a possibility of services positively affecting customer entry in the before phase of a project. One service which might increase the rate of customer entry, as well as mitigating the risks that contracted specifications are not matching what customers actually need, is to provide customers with consultancy services already before the contract is signed. This idea has been presented by both consultants and customers interviewed as a way of better aligning the project specifications with the actual project requirements. From a profitability point-of-view such a consultancy service, or pre-sales workshop, might result in extended scope because of the possibility to recommend more modules in Mediusflow. However, setting aside time for such a pre-sales workshop requires resources and it is also not certain that customers are willing to pay for such a service.

Another similar idea, which could be used to test pre-sales workshop ideas before using them on new customers, is to conduct improvement-workshops with existing customers who have been using Mediusflow for some time. Perhaps an after-market representative and/or PM/App-consultant could visit such a customer to have a closer look at the customer's business processes and recommend or example added functionality of Mediusflow or overtaking ERP.

Furthermore this involves the concept of segmenting customers. Segmenting customers can be carried out either because of the value the customers bring to the company or depending on what the customers expect and desire from a project, as discussed by Lambert (2010). A customer that wants low involvement and easy solutions shall also preferably be supplied with such solution. If customers are segmented depending on their value to the company the method how to calculate customer profitability should be clear in terms of time dimension, accounting theories and probabilistic items, as discussed by McNab (2006).

The business models of different projects might differ for several reasons, as argued by Wikström et al. (2010). Consequently, it is difficult to establish an overall company business model that is reflected in every project. Instead, different business models can be utilised to best fulfil the objectives of different projects. If for example the objective of one project is to take market shares or enter a new market the business model might put less focus on profitability and instead carry out activities that secure the deal at the cost of other objectives. Artto et al. (2008) also speak of this when they present the topic of service business. They argue that a customer entry today can generate future profit from sales of services.

As elaborated earlier by Artto et al. (2008), services can have an impact on every time-phase of project business. In particular it can be argued that the main impact during the before phase is on the entry of new customers and extended sales. Even though many services before the project-phase are carried out free-off-charge if the objective is to win sales and extend the scope of specific sales they can still lead to increased revenue for the project as a whole. An example for Medius might be to offer pre-sales workshops in which the scope is better aligned with actual requirements before the contract is signed. As mentioned by Håkansson & Snehota (1995) the Informality of business relationships makes it difficult to contractually control all aspects of a project. A broader agreement

based on interaction might enable increased customer satisfaction through better alignment of project goals. Preferably, this would also enable Medius to pitch added functionality, thus extending the scope.

Organisation

Regarding the organisational structure of a company there is no single best way to set up the organisation. Taken from the view of Artto & Wikström (2005) the important thing is instead to assure its alignment between the organisation and its environment. If for example the customers require quick decision-making, a flat organisation with delegated decision power, where the different areas of a company easily can communicate and react might be beneficial. At Medius, consultants state that it can sometimes be difficult to adequately allocate CO-resources and one customer also mentioned experiencing this. Having such overlap of corporate functions well-functioning is emphasised by Cova & Holstius (1993) as a way to strengthen the offer to the customers. Internal communication and joint activities is therefore recommended as a way to empower the offer and increase the product flexibility. In Medius' case, this could pertain to both CO-resource allocation but also to PM/App-consultants adequately communicating with each other. Especially for smaller projects it might become vital to assure that knowledge from different areas is brought to the project, even though the number of project members is limited. This can also be referred to as administrative effectiveness, meaning that in-house expertise in different areas will be reflected on the success of the project.

In a project-based business an entrepreneurial culture should encourage entrepreneurship and innovation to find efficient solutions and methods as mentioned by Cova & Holstius' (1993). A great focus related to the entrepreneurial culture will also be the documentation of findings and best practise. This will not only encourage the personnel to continued innovation, but also secure a firm base for spreading findings throughout the organisation.

The final aspect concerning the organisation and its employees is the personal readiness within the organisation. The marketing and sales division must have high product knowledge and furthermore develop negotiation and communication skills to interact and represent the company in negotiations with customers as discussed in Cova & Holstius' (1993) Generic Model of the Project Marketing Cycle. Marketing and sales people must be able to translate technical terms to a language understandable for the customers and vice versa. They must also have an understanding for the time-phases customers go through, also described in Cova & Holstius' (1993) Generic Model of the Project Marketing Cycle, in a negotiating process and match their activities to best match those of the customer.

Customer interaction

Zablah, Bellenger and Johnston (2004) argue that customer relationships can influence customer satisfaction and Håkansson & Snehota (1995) argue that customer relationships in the form of business relations show symmetry in terms of ability to assert influence over the other actor when they interact. Additionally, Waluszewski et al. (2008) argue that the greater the involvement of an actor in an industrial network, the greater the effects will be on that actors' resources, activities and the company itself. In the case of Medius, this could be applied to communication with the customer in the before phase. By

involving the customer and encouraging interaction, Medius can let the customer assert influence over how the project is undertaken and consequently increase the customer satisfaction because the project result will probably reflect the actual customer's needs to a better extent.

It seems as if Mediusflow implementation projects suffer from information discrepancies regarding how the project is specified in the sales contract versus what is actually needed by the customer. This has been stated both by consultants and by customers. As mentioned under "service" above, some of this discrepancy might certainly pertain to the issue of customers not knowing exactly what they need. However, customers also state that there are discrepancies in how Mediusflow was specified versus what is actually needed. The main concern is integration aspects but application aspects are also an issue, albeit to a lesser extent. Comparable to Gap 3 or Gap 4 of Zeithaml, Berry & Parasuraman's (1988) Delivery of Service Quality-model, it seems as if sales sell "one thing" and consultants then need to install "another thing" more accurately fitting the actual customer requirements. Herein lies potential for improvement. Since decisions made in the before phase affects how well the during- and after phases are carried out, customer satisfaction and profitability could be positively affected by better communication in the before phase. For example, Customer Satisfaction might increase due to more accurate goal-setting and less need for re-work. Profitability might increase because of more rapid implementation and project closure, plus less need for unbudgeted consulting hours fixing the integration/application. Besides the accuracy in communication also the timing has implications, as one customer explained that they actually choose Medius in their final selection between two suppliers because Medius was better in communicating and returning with quick answers to their questions.

Another important aspect of communication is the time it takes for PM/App-consultants to contact the customer after the sales handover. The sales people usually have frequent contact with the customer and if when the contract is signed the customer does not hear anything from Medius in days or even weeks, the customer might naturally start to feel anxious. Therefore, it is important for PM/App-consultants to contact the customer immediately after handover from sales to at least present him-/herself and to tell the customer what will happen next. This closely relates to McQuiston's (2001) model of Conceptualisation of relationship building and maintenance in which Open Lines of Communication, Personal Relationships, Trust and Shared Goals & Objectives are among the important factors. All of which are adhered to via that timely phone call.

One organisational aspect related to the customer interaction that Reich, Sauer and Yong Wee (2008) argue differs in IT-projects, compared to normal projects, is involving the customer's business people as well as IT people. Both consultants and customers state that sometimes the customer's business people, e.g. the soon-to-be users of Mediusflow, sometimes do not agree to how Mediusflow is set-up by the IT-people implementing it. This seems to be a special case of Gap 1 of the Delivery of Service Quality by Zeithaml, Berry & Parasuraman (1988) but instead of the service provider's managers failing to understand what is needed; the customer's managers and/or implementation team fail to understand what the users actually require. This could be mitigated by more accurately capturing the need of the users already in the before-stage. However, this discrepancy also presents a possibility for Medius to suggest process improvements, which could potentially save the customer both time and money. Perhaps the customer's old process was designed around a very rigid IT solution? The flexibility of Mediusflow might enable

much more simple business process automation, saving both time and money. One example is a customer who stated that they did not involve enough people/departments in the beginning of the project and thus, some inputs were missed out throughout the project.

5.2. During a project

This section will present the during phase of the framework, the phase during which the actual project is performed. It is split into four headings corresponding to the four parameters of the framework.

Technology/product

Entrepreneurial culture could be practiced in specific projects if the project members are encouraged to be creative and innovative also in the project-phase. Many solutions and ideas might develop along with the project and good ideas should be presented and evaluated, as suggested by Reich, Sauer and Yong Wee (2008). They state a driver of the entrepreneurial culture is the activity of adaptively re-planning through meetings to focus attention on problems and to continuously assure that all involved parties have a common view of the project plan. There must be a certain understanding for that the project plan might change during the project and adoptions can be necessary to fulfil deliverables in time. The customers interviewed expressed concerns about their limited knowledge regarding which products actually were available that might be useful for them. Therefore, Medius consultants have the possibility of adding/alternating the scope of a project to increase customer satisfaction and also to increase the profitability of the project by either increasing sales or lessen the need for consultancy hours. Although focus cannot be taken away from the core project, further solutions could still be recommended as ad-hoc projects or as extended scopes once the main Mediusflow implementation is complete. This is of course made easier as the consultants at Medius get a greater insight in the customer's situation as the project progresses.

Another topic that was discussed in interviews with customers was the customer's reliance on Medius' consultants' technical expertise and knowledge rather than the technology itself. Medius takes responsibility for the technical development and integration. It was however argued that there is a fine balance between user friendliness and technical flexibility and the general understanding was that although it is pleasant with user friendliness it was of greater concern to have a flexible system that could be developed further in the future if desired. However, this is contradictory to the user-friendliness developing in the consumer market. The customers overall opinion regarding the product functionality was that it must be possible to continuously work with the product in the future without installing a completely new product. Although this long-term focus should be present in all time phases, decisions might still have to be made during the project that have effects on future activities.

Service

Services related to the actual project-phase mainly aim at creating a greater customer value and increase the delivery efficiency as discussed by Artto et al. (2008). The support of services to the product can increase functionality as well as the perceived customer value of the product. At the same time as customer needs are better satisfied,

chargeable services will also have a positive impact on profitability. When it comes to delivery efficiency it mostly refers to training of the customer's organisation to smoothen the handover of the project. If the customer's organisation is well trained they will also experience greater value of the product and are thus better satisfied with their purchase. The training topic was heavily discussed during the interviews conducted with the customers. This is because, seen from the customer's perspective, the quality of the training phase has an impact both on the potential to which the IT solution can be used in their organisation, but also on how positively the IT solution will be received among the employees. The training phase is often the first time the actual users of the system come in contact with its functionality and as they are the ones grading the product, their opinion really counts. The customers were very pleased with the consultants' knowledge, but felt that consultants were not always able to express their knowledge and transfer the knowledge properly. As the training provided by Medius is not experienced as very pedagogical there could be improvement possibilities in developing teaching skills among the consultants.

Perhaps a knowledge management-system such as described by Laesvirta & Ribière, (2008) would enable transfer of teaching skills regarding information materials. Such a system could also be used to enable transfer of application setup knowledge between PM/App-consultants and as a knowledge pool for new employees. Consultants state that the Medius-internal culture is one of sharing and helping each other out. This is of course very good but as the organisation grows, both in terms of headcount and in geographical distances, the transfer of knowledge might need to be handled in a more formal way.

Artto et al. (2008) furthermore argue for innovation and learning possibilities through services, as the consultants get a greater insight in the customer's business. Medius still has much to learn cross-project wise and a good way to start is to embrace Artto et al.'s (2008) suggestion to accumulate knowledge and develop capabilities along with any single project and then spread best practise throughout the internal organisation. In relation to an increased understanding for the customer's business Medius furthermore has the possibility to encapsulate the customer and create a long-term competitive advantage as specialists on the customers' operations and processes.

Organisation

Time management is a topic that Medius might have to look into as the number of projects increase. It is clear that some resources, such as CO-availability, are scarce and that the utilisation rate for different resources varies much from time to time. Therefore it has become a fact that the desired resources are not always available at the time needed. The customers expressed a special concern for thorough planning of activities, maybe not for the customer's project team, but rather when other employees at their company were involved. This is due to that all time they spend in a project is time added on top of their normal duties. Multi-project management is mentioned by Artto and Wikström (2005) as one of the key aspects in the area of processes. This in particular can refer to the ability to work with quantitative decision-making, something that Medius has to face as the number of simultaneous projects increase. Medius scarce resources are sometimes a hinder to the project progress and improvements in multi-project management on a management level at Medius could yield results not only affecting the profitability, but also increasing the

customer satisfaction, as customers would be better satisfied with Medius' resource planning.

When it comes to the project plan, customers and consultants alike stated that it is difficult to fully adhere to the plan throughout the project. Being able to change the project plan mid-project without losing the focus is what Reich, Sauer & Yong Wee (2008) talk about when they suggest adaptively re-plan using meetings to focus attention. By being able to adapt to the customer's situation, particularly staff availability in the testing phase, Medius could enable higher customer satisfaction through increased sense of service and also higher profitability due to more consultancy hours billed. There might also be a possibility of adding other modules or functionality to the scope, which could also increase both customer satisfaction and profitability.

Profitability concerns the organisation in the during-phase and focuses there on maximising profitability within the project scope instead of, as in the before-phase, a measurement to segment customers and focus activities accordingly. As profitability is built up by cost and revenue it depends much on how the contract for compensation is established with the customer as well as a cost control during the project without jeopardising any promised deliverables. In the during phase Medius sometimes lack focus on the time dimension arbitrated by McNab (2006) as current period and instead justify actions by considering present value or lifetime value. Although such approaches secure a profitable project in the long run, customers have mentioned that Medius sometimes performed actions that they did not fully expect as free-of-charge or as included in the contract. A reason could be that Medius is still a young company and the utter objective is to satisfy the customer, however thoroughly considering cost items in a project could increase also the short-term profit of a project.

Following the previous argument, the business model and thus the objectives of any particular project should be articulated and communicated internally in the organisation at the supplier so that the involved employees are aware of the goals and know which measurements are important in complex situations. If for example profitability of the project is the most important measurement the project team must be consistent with cost items and might have to prioritise activities depending on their contribution to profitability. At the same time, as articulated by Wikström et al. (2010) projects can have different business models and objectives, not always striving to maximise direct profit.

Internal communication throughout the organisation is elaborated by Prencipe and Tell (2001), who present a useful collection of learning typologies where Medius has clearly taken the first step to experience accumulation, but just merely touched the knowledge articulation and knowledge codification. During a project time must be given to communicate and articulate knowledge through *Learning by reflecting, thinking, discussing* and *confronting*. Although it might seem as unnecessary time initially it is still believed to develop the project routines in the long run and enable the final step of knowledge codification through *Learning by writing, implementing, replicating* and *adapting*.

Customer interaction

Communication and interaction between the customer and the supplier is of most importance throughout the project-phase. Communication is at its best direct and clear to everyone involved in the project, to minimise time spent on miss-communication and the overall time spent on communication. Both the customers and the consultants enlighten

the communication as one of the cornerstones to a successful project. The consultants encourage communication of project status as long as it is simple and does not take valuable time from the core project. The customers agree that such communication should not come at the expense of project activities and although the interest is great for more frequent project updates, they still claim that it should in that case be based on basic information to avoid making the communication very administrative.

Furthermore it can be valuable to set communication frames early in a project. In such, it is decided when and how the continuous communication will be carried out throughout the project. It came out from the interviews that communication between PM and the customer sometimes could be as much as three times or more a day and many times just minor topics were discussed. Still this implies that other activities will have to be put on hold just to attend to a brief phone call. This could be seen as a great loss of time for the consultants as they are continuously interrupted in their daily work. If a frame for communication would be set early not only the short interruptions will be minimized, it also opens up a greater possibility to document and follow up the topics that are discussed with e-mails or other means of written documentation.

The gap-bridging activities during the project-phase will relate not only to the supplier's management perception of customer expectations, but also to internal activities at the supplier. Gaps in interpretation might occur at different areas of the supplier, mainly in the articulation of quality levels from the management and how the service is actually performed to the customer.

Artto and Wikström (2005) talk about inter-organisational collaboration between different entities in a project relationship. They mention that there is no single best structure to set up a virtual organisation and argue that it must continuously be fit to its environment. In every project Medius face a new kind of inter-organisational collaboration in the form of a virtual organisation that is rapidly built up and dissolved after project closure. During the project one could therefore argue that Medius must take special concern to the requirements needed every time such an organisation is set up. Although both customers and consultants seem to be satisfied with their counterpart, project progress could still many times be derived to the efficiency of the virtual organisation. Through improved inter-organisational collaboration Medius could expect effects on management of networks, contacts, information and knowledge. Improved inter-organisational collaboration could according to Artto and Wikström (2005) refer to contracts, knowledge transfer or information systems established between organisations.

The definitions and usage of CRM are many, as stated by Zablah, Bellenger and Johnston (2004), and it might be a good idea to decide upon how CRM is to be used in any particular project. This will make it clear to what level the supplier and the customer are supposed to integrate and during what time frame the relationship is desired to be explored. Thus the definitions and objectives with the relationship will be clear to all involved entities. This does not mean that any relationship shall be treated offhanded, however it could have implications on the level of integration of information systems and information sharing as the cost for such is expected to yield benefits over a longer time period.

The project of implementing Mediusflow aims at building a business relationship, e.g. a customer relationship as mentioned by Håkansson & Snehota (1995), where the customer is willing to add extra functionality or purchase other services from Medius. This closely relates to what Reich, Sauer and Yong Wee (2008) said about planning for post-

delivery, if Medius undertake the project with the intention of establishing a continuous relationship with the customer, a greater emphasis will be put on enabling future purchases and consequently the customer satisfaction needs to be constantly adhered to.

5.3.   After a project

This section will present the after phase of the framework. It is split into four headings corresponding to the four parameters of the framework.

Technology/Product

Customers state they might be interested in additional functionality of their already installed Mediusflow. One customer did want an extended scope already when implementing the current Mediusflow set-up but due to budget limitations the scope was narrowed. Consultants and managers interviewed state that selling additional Mediusflow functionality or related projects might be a good way of expanding business. Doing so can increase the lifetime vale of a customer, as discussed by McNab (2006). Because the customer is already familiar with Medius and Mediusflow, expansion-projects will require less effort than regular projects, say consultants.

Examples of added functionality, as stated by customers, include increased scanning capacity, the Purchase Order-module and transition from Saas to local installation. However, one consultant said that customers are increasingly requesting Saas so it might still be a good idea to offer both Saas and local installations.

Another aspect, which was highlighted by two of the interviewed customers was the importance of forward integration. A set-up of Mediusflow installed today must be able to cope with future updates of Mediusflow or other software.

Service

Just because the implementation project is over, the Lifetime Value (i.e. Business value) of a customer, as introduced by McNab (2006), might not necessarily be over. Several services can still be offered post to the project closure and lead to new business opportunities. This can relate to both maintenance activities offered over a contractual time, as the current Medius licenses and support agreements, but it can also be used as a competitive advantage where unique supportive products can be offered to the same customer in new projects in the future as mentioned above under Technology/Product. If used appropriately, such services can have a positive impact on both customer satisfaction as well as on profitability. Suggestion on such a service was mentioned under the before phase earlier in this report where an after-market representative and/or a PM/App-consultant would visit existing customers to host a workshop in which they show the customer which additional services Medius can offer. Example of such services being added functionality of Mediusflow, overtaking ERP or installing Mediusflow 11.

Another idea, presented by a customer, was for Medius to host or attend seminars or conferences where they invite existing customer to participate. The customer said that many people are probably happy to attend such a seminar for half a day. This might also be a way to increase the life-time value of existing customers as it might enable further sales and sharing of experience between customers, leading up to more sales.

Organisation

Knowledge is acquired through experiences in any project, some of greater importance than other. The documentation of such experiences can be a time consuming activity. An important task for any organisation is to find ways to ease this activity and assure that time is spent in the best way possible and that experience is really utilised in following projects. This therefore puts high demands on user-friendly internal information systems where experiences can be documented, stored and accessed when needed, closely related to the topic of knowledge management as discussed by Laesvirta & Ribière (2008). This is in line with what Prencipe and Tell (2001) refer to as learning processes and where Medius has the potential to become a learning organisation and move further in from knowledge articulation to actually document and codify knowledge.

The project information can furthermore be used for training and increased learning purpose but also to identify future business potential for existing customers. Any aforementioned improvement to either the before, during or after phase relies on internal communication functioning properly. In the after phase, communication is essential in order to explore the business potential of existing customers, preferably via the use of a CRM-system as described by Zablah, Bellenger and Johnston (2004). Communication throughout the organisation after project closure span all the way from the project team and aftermarket, who are or have been in contact with the customer, down to R&D and marketing, who clearly needs to hear the voice of the customer to get a better insight in what is desired from the market.

A topic that was discussed in some interviews was the customers' unawareness of whom to contact at Medius to solve certain issues. As it is desired to run all cases through the support center, the customer must be well informed of whom to contact to solve more complex or special tasks. It is also desired to get direct information of how long the lead-time a customer can expect before being attended.

Customer interaction

To find out the experienced customer satisfaction and to understand the customer's perceived value of the project the customer satisfaction must be measured, as mentioned by Farris et al. (2010). For this activity, measurement areas must be established and the actual measurement activity must be carried out together with the customer. Although the result will not have any impact on the closed project it is important to understand how the customer perceived the project to counteract eventually loose ends in future projects and to learn how to improve customer satisfaction of future projects.

Customers seemed to welcome the idea of closer follow-ups with after sales after installation of Mediusflow is completed and the project closed. Asking customers to submit their ideas on how to improve and for them to rate Medius achievements might serve as input on how to improve for future projects. Managing such inputs would be vastly simplified by incorporating a well-functioning CRM-system as discussed by Mithas, Krishnan & Fornell (2005).

Furthermore, to ensure continuity as described by Håkansson & Snehota (1995) the selling company can continue to interact with the customer to maintain the customer relationship even after the project is over. Medius' customers for example mentioned a reasonable contact time-frame for discussing future projects or improvements of about once every six months.

5.4.　　　Populated framework and returning to the research questions

This section will present the results from the sections above in a summarised form to populate the framework. The framework is split into two parts to fit the page, Figure 17 illustrates customer satisfaction and Figure 18 profitability.

In addition, the three research questions presented in the beginning of the thesis will be answered one by one in this section. These questions directed the thesis progress and formed the base for the analysis and the framework that was conducted and produced.

Customer Satisfaction

Before

Technology/Product
- R&D to maintain competitive advantage.
- User friendliness.
- Pre-sales workshops.
- Match project scope to customer needs.

Service
- Pre-sales consultation.
- Improvement workshops.
- Segmenting & Business Models.

Organisation
- Resource allocation.
- Entrepreneurial attitude.
- Personal readiness.

Customer Interaction
- Involve the customer.
- Align sales promises with deliverables.
- Inititate contact quickly.
- Involve all relevant departments.

During

Technology/Product
- Scope flexibility and possibility of additional functionality.
- Consultant's knowledge of the product and how to install it.

Service
- Process improvement help.
- Knowledge exchange.

Organisation
- Time and resource planning.
- Flexible project plan.
- Knowledge management to spread information.

Customer Interaction
- Clear communication.
- Communication frames.
- Bridge the gaps.
- Inter-organisational collaboration.
- CRM and bulding a relationship.

After

Technology/Product
- Extended scope and additional functionality.
- Generic workflow.
- Forward integration.

Service
- Maintenance and updates.
- Seminars or other follow-ups.

Organisation
- Documentation and knowledge management.

Customer Interaction
- Measure and follow up on customer satisfaction.
- Continuous communication with existing customers.
- CRM-system to handle customers and enable future business.
- Maintain customer relationship.

Figure 17 - The framework for creating a delivery process, Customer Satisfaction.

Profitability

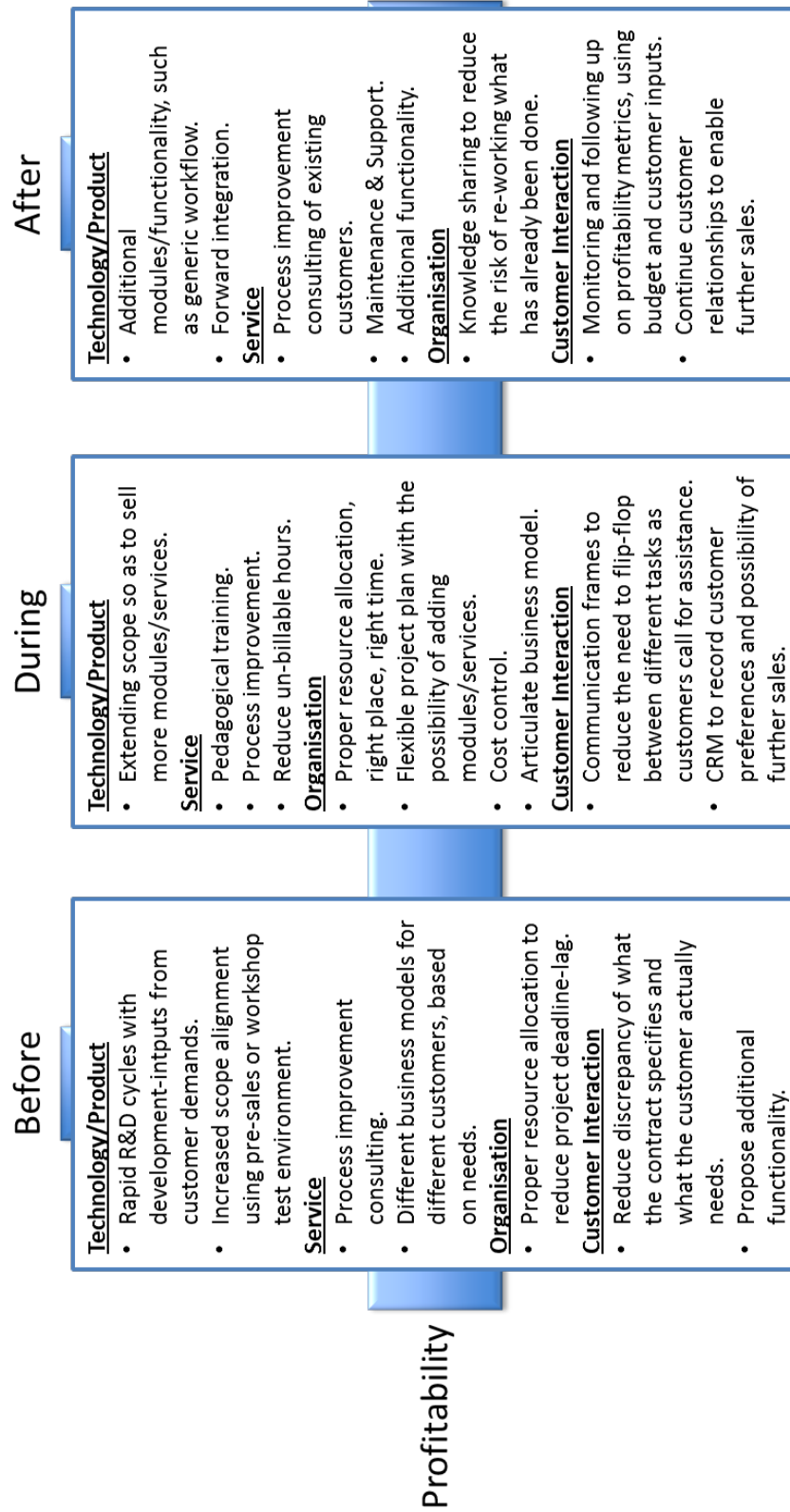| Before	During	After
Technology/Product • Rapid R&D cycles with development-intputs from customer demands. • Increased scope alignment using pre-sales or workshop test environment. **Service** • Process improvement consulting. • Different business models for different customers, based on needs. **Organisation** • Proper resource allocation to reduce project deadline-lag. **Customer Interaction** • Reduce discrepancy of what the contract specifies and what the customer actually needs. • Propose additional functionality.	**Technology/Product** • Extending scope so as to sell more modules/services. **Service** • Pedagogical training. • Process improvement. • Reduce un-billable hours. **Organisation** • Proper resource allocation, right place, right time. • Flexible project plan with the possibility of adding modules/services. • Cost control. • Articulate business model. **Customer Interaction** • Communication frames to reduce the need to flip-flop between different tasks as customers call for assistance. • CRM to record customer preferences and possibility of further sales.	**Technology/Product** • Additional modules/functionality, such as generic workflow. • Forward integration. **Service** • Process improvement consulting of existing customers. • Maintenance & Support. • Additional functionality. **Organisation** • Knowledge sharing to reduce the risk of re-working what has already been done. **Customer Interaction** • Monitoring and following up on profitability metrics, using budget and customer inputs. • Continue customer relationships to enable further sales.

Figure 18 - The framework for creating a delivery process, Profitability.

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5.4.1. Research question 1

The first aspect is to find out how to define Customer Satisfaction and Profitability for Medius and relate that to theory as well as the views of their customers.

Definitions of Customer Satisfaction and Profitability have been given in the theory chapter and used throughout the master thesis as the primary concepts to consider for a sustainable delivery process. Customer Satisfaction is defined by Farris et al. (2010, p. 57) as *"Customers/…/whose reported experience with a firm, its products, or its services exceeds specified satisfaction goals"*.

Medius, albeit a little vaguely, define Customer Satisfaction as the ability to serve a customer in the short-term with the possibility of still serving the customer in the long-term.

Profitability is defined by McNab (2006) simply as how much a customer contributes to profit. However, there are different measuring decisions linked to profitability and how these measurements can be used to assert control of a project. As quoted by McNab (2006, p. 13) "*What gets measured gets managed*".

Medius definition of profitability is future oriented, where future revenue of customers' existing business as well as their lifetime potential is taken into account. McNab (2006) refers to this time dimension viewpoint as *present value* and *lifetime value* and means that, although appreciated, profitability must not always come in the short run.

The empirical data gathering has been conducted with these two concepts in mind and both customers and consultants interviewed have given their opinion on Customer satisfaction. Overall customer satisfaction is regarded as quite high and Medius seems to be able to deliver good customer satisfaction to their customers. As for profitability, it is obvious that Medius will have to economise their resources and not allocate an extensive amount of un-billable consultancy hours to a project. Although doing so might add to customer satisfaction, there needs to still be a reasonable profitability in each project.

5.4.2. Research question 2

Customer satisfaction could in a longer-term perspective generate faithful customers that continue to purchase from Medius also in the future. Therefore a sub-problem to analyse will be to look at aspects that satisfy customers in the short-term as well as encourage them to continuously turn to Medius for future solutions.

What satisfies customers in the short-term has been discussed in the Before Phase of the framework presented above. Short-term customer satisfaction relate mostly to how available Medius consultants are, how well they communicate with the customer and how well the project is executed.

For long-term customer satisfaction, this report has discussed after-market and support functions during the After Phase in the framework presented above. Customers are satisfied to have good support and feel taken care of after the actual installation of Mediusflow is performed. Being offered additional functionality to the existing Mediusflow installation seems to enable increased customer satisfaction and of course this would

enable increase sales for Medius. Furthermore, some of the aspects mentioned in the before phase above, such as R&D and planning, seem to enable increased customer satisfaction also in the long term. R&D will enable better products for the future and adequate planning, not to mention pre-project communication, will be able to ease the project implementation and consequently raise customer satisfaction.

Another important aspect concerning customer satisfaction is the interaction by the customer in the relationship between the customer and Medius. The supplying company, in this case Medius, need to be responsive to customer demands throughout the entire process and encourage the customer to interact. The customer relationship is a two-way street and by taking the view of the customer, understanding their needs, the selling company can achieve increased customer satisfaction.

5.4.3. Research question 3

Profitability is an objective that many times has to be compared with and tampered with to also fulfil other objectives of a project. However, an interesting question that has emerged is to find out how companies providing IT solutions can take a view on profitability in relation to other objectives.

The theory chapter discusses different business models intended to achieve different goals. For example, a short-term profitability project business model might have to occasionally succumb to a project business model for increasing market share if expansion is more important than profitability. There was one example at Medius where a project was sold with a very tight budget but even though the profit was very small, the PM/App-consultant working on the project was new and learnt how to conduct a project. Looking at the long term, that consultant learnt a lot and will be able to land more profitable projects for the future. However, Medius must obviously still conduct profitable projects to enable a continuation of the company.

One interesting aspect that was mentioned by both consultants and by customers was the fact that most customers seemed willing to consider additional functionality to their existing Mediusflow set-ups. This would enable sort of a razor-blade strategy where the initial project of installing Mediusflow can be conducted with a little lower profitability to enable more sales. Then, conducting projects intended at adding functionality will be less time-consuming for Medius since they already know the customer and because Mediusflow is already installed. Such additional sales can then drive customer profitability.

6. Discussion

This chapter will be in the form of a SWOT analysis highlighting the strengths and weaknesses of the current delivery process. This chapter will also look on the opportunities which could arise from improving the delivery process, along with the threats of not doing so.

6.1. Strengths

Content – The current delivery process has rather good content in the sense that the steps included enable a fairly smooth implementation of Mediusflow. Experience among the consultants fill in the gaps and overall the delivery process achieves rather good customer satisfaction.

Knowledge – Consultants seem to be generally well-educated on the current delivery process, how it works and what it is supposed to achieve. In one aspect, this makes it easier to spread changes throughout the organisation since consultants can relate to the current process.

Reasonable communication – The current delivery process seem to enable adequate communication although it is still up to the individual consultant how the communication is performed. Often, the project plan is omitted and project progress is communicated via action lists updated at frequent meetings. Although this might work with short term tasks, it is still important to keep the bigger picture in mind and not to lose sight of the objective.

Solid base – Based on what interviewees have said, the current delivery process seems to fulfil its goal rather well but there is of course no such thing as a perfect process. The current delivery process provides a solid base on which to build a well-functioning future process.

6.2. Weaknesses

Accuracy mismatch – It seems as if the current delivery process suffers from some information discrepancy regarding what is being sold to the customer compared to what the PM/App-consultant, together with the customer, finds during the workshop. This usually relates to integration aspects and ReadSoft, not so much to application aspects. These discrepancies cause delays which amplify during the project, causing further delays and incur unnecessary extra work and costs.

Resource restraints – It seems as if many projects suffer from resource restraints, especially human resources restraints. CO-resources seem difficult to get a hold of when they are needed. One possible reason might be the bureaucracy in communication between CO and PM/App-consultants which makes communication less efficient. However, even if CO could plan their time perfectly there is still the risk of the project running behind and therefore the planning attempts to fail. Hence, the accuracy mismatch mentioned above might indirectly incur resource restraints.

Structure – Although the current delivery process seems to have all the necessary parts, it still seems to be missing some structure and enable jumping between tasks during projects. This is not necessarily a bad thing because some flexibility is needed to cope with

project-specific alternations and unforeseen events. However, a more step-by-step-structured process would help new employees to better work with the model and to ensure continuity in delivery quality.

Workarounds – Although there is a current delivery process it seems as if there are quite many workarounds, i.e. alternations, from the intended process. Closely related to the structure-issue, this is not necessarily a problem as long as the delivery is accurate and of good quality. However, there is a risk of overlooking something if there are too many workarounds. Also, repeatability and transparency could be reduced if every team does whatever they want. In addition, if one team or consultant has a superior way of working, and the rest of the company works in a sub-standard way, it is a shame not to share it with the rest of the company. As with the structure, there needs to be some wiggle-room for customer specific needs but a good process is repeatable and could ensure superior delivery quality.

6.3.   Opportunities

Budget control – The delivery process could be used to monitor the on-going cost of a project, and hence indicate if the budget is about to be exceeded. If the budget is about to be exceeded, noticing this in advance could reduce the risk of Medius having to make up for the shortfall since it is possible to communicate with the customer the reasons for falling behind.

Business opportunities – A delivery process that enables additional sales and extensions of scope could help generating new business. The PM/App-consultant's primary objective is naturally to deliver Mediusflow but they could also assist in process improvement and sell the customer additional consulting hours and/or software.

Clear communication – Establishing communication frames could increase efficiency in the delivery process. Naturally the consultants need to be available for urgent issues from the customer but having clear communication frames could help the consultants to focus on their own work in-between these communication frames.

Competitive advantage – As the competitors are closing in technically it is increasingly important to excel at delivery. The opportunity lies in the ability to out-deliver competitors and it is an argument for why the delivery process is important.

Experience accumulation – As the organisation grows there is less possibility to share experiences over a cup of coffee or by the desk. This might cause best-practices and bright ideas to pass unnoticed. An opportunity to change this is to incorporate experience accumulation, paired with the proper documentation, within the delivery process. Although much of the process in the current delivery process is documented, there is still a possibility to increase sharing of experience, especially between offices in different parts of the world.

Flexibility – As mentioned earlier, it is important to have a good structure and avoiding too many workarounds. However, the delivery process needs to be flexible to account for customer-specific requirements and unforeseen events. Also, a flexible delivery process is one which could enable additional functionality of Mediusflow through either scope-enlargement or starting side-projects when the main project is finished.

Knowledge articulation/codification – Closely related to Experience accumulation, knowledge articulation means to reflect on knowledge accumulated and in the case of the delivery process this could mean sharing best practice between employees

and discussing methods to solve problems together. Knowledge codification, i.e. translating these methods into documentation or training material, could result in the possibility for employees to learn from more experienced employees.

Learning purpose – A well-defined delivery process will enable new employees to learn the job faster and easier. This reduces the risk of "beginner mistakes" and the anxiety of new employees could be lessened.

6.4. Threats

Bypassed – One of the threats to consider when designing the delivery process is that it is bypassed, i.e. not used or subject to massive workarounds, for some reason. There is no real point in having a delivery process if it is not adhered to by the people supposed to work with it. Therefore, it is important to include the opinions of the people with experience of the process when trying to change it.

External inability – If Medius delivery process becomes substandard compared to that of competitors, Medius risk lagging behind in the competition. This thus incurs an external inability to properly deliver Mediusflow.

Internal inability – Whereas external inability means losing to competitors, internal inability means being unable to function properly within Medius. With a sub-standard delivery process there is a risk for Medius-internal communication not functioning properly. For example, the allocation of CO-resource mentioned earlier or the discrepancy between sales and PM/App-consultants.

Lowered innovation – If the delivery process is not continuously improved, there is less likelihood of innovation and consequently increased risk of falling behind the competition. As an example of how to mitigate this risk, a knowledge management system for customer input and consultant suggestion could be implemented.

The SWOT analysis is summarised in Figure 19 below.

Increase or explore	Reduce or mitigate
Internal Content Knowledge Reasonable communication Solid base	Accuracy mismatch Resource restraints Structure Workarounds
External Budget control Business opportunities Clear communication Competitive advantage Experience accumulation Flexibility Knowledge articulation/codification Learning purpose	Bypassed External inability Internal inability Lowered innovation

Figure 19 - SWOT analysis of the current Medius Delivery Process.

7. Conclusion

This chapter will conclude the master thesis.

7.1.   Concluding remarks and value of study

The purpose of this master thesis was double. It was a symbiosis between aiding Medius in improving their delivery process and contribute to the academic zeitgeist of delivery processes for project-based IT solutions.

Project based IT companies, like Medius, work in an evolving and interesting business climate. Competition is tough and it is becoming more and more important to differentiate your products and processes to gain and maintain customers. The delivery process thus has a great impact on how the customers perceive the IT supplier. This thesis contributes with a framework for creating a delivery process for project based IT companies. Based on interviews and academic literature the parameters are defined that have an impact in different time phases in relation to the delivery of an IT solution.

Although this thesis mainly considers the situation of one particular company, input has still been gathered in a general sense. Thus the framework can also be considered to be applicable for other companies working under similar circumstances in the same industry.

The time phases, defined early in the thesis, are *before*, *during* and *after* a project is carried out. They are important to consider separate but they also have an impact on each other. Customer satisfaction and profitability were found to be impacted mainly by the parameters technology/product, service, organisation and customer interaction. The interrelation between customer satisfaction and profitability were furthermore discussed as both a constructive and sometimes destructive relation. This thesis also evaluates the delivery process for Medius in particular and provides them with direct recommendations of how they could improve their delivery process to better satisfy their customers and/or boost profitability. The recommendations are mostly related to communication, documentation, training, internal competence development, extended business, experience documentation and knowledge management.

7.2.   Future research

This thesis provides a good base for project based IT companies in their development of a successful delivery process. However the parameters that were evaluated in this report were company-specific. To make the framework more general in an applicability sense one could argue for a wider approach towards parameters that are taken under consideration. The parameters presented in this thesis were technology/product, service, organisation and customer interaction, although many other parameters are mentioned in literature, e.g. norms and values, documentation, empathy, pricing, promotion, etc. For an overview of possible other parameters, see Appendix B – Possible parameters for the framework.

To get a greater understanding for the most important implications in different time phases related to a project a suggestion is to take a quantitative approach to the data

collection. That would provide a more illustrative result, although the results would still have to be argued for in a qualitative manner.

A deeper investigation could be used to find metrics for how to measure customer satisfaction and profitability. Metrics could then be used to define targets and provide a balance between different objectives.

8. Recommendations

This chapter contains the recommendations to Medius. The recommendations are based on the findings of the analysis and the empirical data gathering.

Improve handover from Sales to PM/App-consultant – Both in terms of time spent on briefing the PM/App-consultant and also how the handover documentation is designed. Today, a discrepancy between what sales people sell and what consultants need to install seem quite common. This could be mitigated by aligning the sales people and the consultants further. How to actually improve the handover is best left to the consultants and the sales people themselves, having them share what they need to do their job and enabling them both to work out an improved system. However, one particular aspect which seems to re-occur is how the integration between Mediusflow and the customer's ERP system is defined. It seems as if this aspect often needs adjusting during the project.

Define project business models – Standardise different project business models which go beyond that of Medius. For example, a customer which is a small one-man operation or a customer which is a multi-national conglomerate have very different needs and wants. By introducing standard project business models it is possible to answer "why?" Medius is undertaking a project. Is it to gain market share? Is it because the customer is very profitable? Is it because it is just "good business"?

Look into the possibility of a pre-sales workshop – Having a workshop before the contract is signed, attended by Medius consultants, might increase the accuracy of the scope and contract plus enable additional sales by pitching added functionality to the customer. Such a workshop would most probably reduce lead time, cost and the need for re-work due to reduced risk of integration and application problems arising later in the project. However, having such a workshop might be costly and time-consuming if no sale is guaranteed. Medius should try it out on a smaller type of project with experienced personnel to properly investigate the possibilities and the trade-off between a potentially costly pre-sales workshop and a potentially less costly project.

Establish first contact immediately – If PM/App-consultants are not already involved in the sales process or in a workshop as the one described above, they need to contact the customer as soon as possible to introduce themselves. By explaining to the customer what the customer needs to do and when the customer needs to do it, the customer will feel more at ease

Define communication frames together with the customer early on – Defining how the communication between customer and Medius should be carried out during a project could save a lot of time and effort. Consultants should be able to answer emergency questions but being contacted by customers any time of the day might be very bothersome for the consultant. The other way around, the customer might not always have time when Medius wants to talk to the customer. Therefore, establishing communication frames could benefit both the consultants and the customers.

Promote customer-internal consensus early – Make sure that every relevant opinion in the customer's organisation regarding how Mediusflow should be set-up is heard early in the project. Otherwise there is a risk of customer's users saying "but this should have been set-up differently!" during the testing phase and losing faith in the

system. However, just because all opinions have been heard it does not mean the best set-up is made. There might be even better ways of setting up business processes than mimicking the current ones, thus creating a need for business process reengineering-competence within Medius.

Look into the difficulties in allocating CO-resources – It seems as if there are still some kinks from reorganising CO into a service organisation within Medius. For projects to progress smoothly and be flexible the rigidity of CO needs to loosen and communication needs to ease. Firstly, a location, for example Gothenburg, should to the furthest extent possible be assigned CO-resources located in Gothenburg to ease communication. Secondly, the resource-ordering process should be speeded up; possibly by introducing staffing managers with no other responsibility than to allocate CO resources between projects. Having Medius-internal lag between different departments affects the delivery capability negatively and will in the end affect the customer satisfaction negatively.

Consider the customers' full potential in a project – The potential of a customer in a particular project, apart from the core project, can for example be future sales or increased scope of a project. As the consultants work with their customers they get a great insight in their customers' business and processes and they have the possibility to be adherent to what the customers might be interested of in the future. This can be documented, spread internally at Medius and used successfully, without jeopardising the core project. Many times the customers are even unaware of the available features on the market and Medius consultants should not hesitate to present other products as suggestions for future projects.

Allocate enough time for testing – Testing has proven to be a highly complex task for the customers and they claim that, as testing is added on top of their normal duties, it can sometimes be hard to prioritise the enough time for testing when needed. Testing is therefore many times a reason for slowing down the project. Medius' consultants must therefore clearly present the great customer involvement in the testing early in the project and also set fixed dates for when the testing needs to be performed. It could also be useful to find a strong leader at the customer who has the ability to force the testing internally. Furthermore continuous feedback with the customers regarding the testing progress would better make sure that the plan is followed.

Improve training material – The training material is considered as somewhat vague and not enabling enough follow-up possibilities of the training sessions. The training material is supposed to back up the training sessions and the customers would appreciate more and better structured material that they could use on their own. As one suggestion was stated a web based training module or some kind of interactive option.

Educate consultants in pedagogical teaching skills – Although very pleased with the consultant's knowledge in their field the customers still feel that the consultants are not always able to project and transfer their knowledge in a pedagogical way. The general feeling was that the training sessions were too technical and with little consideration for that for many customers this is the first time they get in contact with the system. It was suggested by the customers to educate the consultants in basic teaching skills to better connect with their pupils. The training should of course be adapted to the customer's knowledge and familiarity with IT solutions, however improved teaching skills can still be applied regardless of the customer's level.

Increase focus on maintenance to increase profitability – Medius possesses expert knowledge in their field. Not only regarding the implementation of the system, but also the implications and possibilities of the same. The customers even mentioned that Medius' consultants had a great understanding for invoice handling processes and finance. Therefore the possibility to develop an outsourcing function for running the processes on their customers' behalf cannot be disregarded. Given a reasonable customer base interested in this function, Medius could reach good economies of scale and thus not only provide best in class service, but also at a fair price for the customers.

Measure customer satisfaction – As a part of the after-market function customer satisfaction could be measured, goals established and ways to reach the targets discovered. Customer satisfaction is considered by Medius to be one of the most important aspects in every project, but still there is no documented way to measure it. There is in pipeline a development of ways to evaluate customer satisfaction. In such it is important that all departments are given the possibility to participate with their input. Furthermore, and maybe even more important, is to establish an easy and constructive way to collect, document and analyse the results.

Develop ReadSoft competence within the service center – Customers claimed that many of their queries are related to ReadSoft topics. However to get hold of ReadSoft competence at Medius can be a hard task, often requiring many days of searching and waiting, because the few people at Medius with ReadSoft expertise are heavily booked and often out of the office. Although one day of waiting might not seem much, it can still have a substantial impact on the customer's business. It was therefore suggested by the customers that Medius develop ReadSoft competence within their regular support center. This would make it fairly easy for the customers to get answers to basic questions.

Work with knowledge management – Although encouraged there seem to be lack of organisation when it comes to gather and store experiences and knowledge at Medius. Many consultants develop their own knowledge as they work with different customers, but it is many times hard to spread best practise throughout the company. It is mentioned in literature that through experience documentation and knowledge accumulation a company has much to gain implementing some low-cost initiatives. This must be developed and driven from a management level to get the adherence from the employees. Once in process Medius will be able to better introduce new employees as well as assure best practise in everything they do.

Start introducing Mediusflow 11 to existing customers – When the next version of Mediusflow is released it is good to first approach already existing customers. The version 11.0 is expected to be somewhat revolutionary with many new features and a great support from the customers can be needed. Once this pilot group has been handled successfully other customers can be approached with a better internal support.

Aftermarket continuous contact – The customers appreciate a quick approach from the aftermarket once a project has been closed. Mainly to get the feeling of having a personal contact at Medius with whom they could discuss future events. The continuous contact is believed by customers to be appropriate once every half a year.

Standardise internal documentation – It is obvious that the internal documentation is not standardised enough. This might create problems in larger projects or as the organisation grows in the future. Standardised documentation will not only make the projects clearer, it would also enable the possibility to involve other employees in absence of another as well as improve efficiency in training new consultants.

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Appendix A – Key words when searching in databases

Business models
CRM
Customer interaction
Customer profitability
Customer satisfaction
Customer relationships
Competitive advantage
Delivery process
Electronic invoice handling
Inter-organisation collaboration
Knowledge management
Measuring customer satisfaction
Project Business
Project life-cycle
Project organisation
Segmenting of customers
Service quality
Services in project business
SWOT analysis
What is project business
IT projects
IT Consultancy
Quantitative customer satisfaction
Qualitative customer satisfaction

Appendix B – Possible parameters for the framework

Customer satisfaction	Implication
Budget	Project is kept within expected budget
Capability	Ability to solve customer needs
Collaboration	Collaboration capability
Communication	Effective and accurate communication
Continuous improvement	Develop together with the customer
Correct scheduling	Ability to accurately plan activities
Customer interaction	The communications and interaction with customers
Customer relationship	Long-term perspective on a relationship
Customisation	Ability to adapt products to customer needs
Delivery time	Rapid implementation
Documentation	Continuous documentation of project progress
Empathy	Understanding for the customer
Hand-over	Quality and simplicity in hand-over between process steps
Innovation	Ability to find creative solutions/routines to problems
Knowledge	Knowledge about products and the customer´s business
Mutual dependence	Mutual dependence between customer and supplier
Norms & values	Norms and values
Organisation	The supplier´s internal organisation
Personal relationships	Ability to build personal relationships
Process effectiveness	Perform the right tasks at the right time
Process efficiency	Perform the tasks the right way
Product development	Innovation and development of new products
Products	Width and depth of product portfolio
Professional respect	Respect for knowledge, routines and customer´s situation
Project complexity	Ability to solve complex issues
Project group dynamic	Ability to build and work in a virtual organisation together with customers
Quality	Product quality
Reliability	Ability to deliver what they promise
Resources	Availability of resources and ability to use them effectively
Responsiveness	Responsiveness to customer wishes and needs
Scheduling adherence	Ability to work according to project plan
Service	Services provided in combination with a product
Shared goals and objectives	Shared views of a project
Strategy & Philosophy	Goodwill and reputation on the market
Support	Quality and availability of support services
Technology	Right technique, integration and solution
Terms of payment	Terms of payment
Top management involvement	Presence of top management and decision power in a project
Training	Quality of training sessions
Trust	Keep promises and work in the best interest of the customer

Profitability	Implication
After-market sales	After-market sales
Budget	Follow a clear budget
Competitive advantage	Possibility to gain customers or price satisfactory
Correct scheduling	Ability to accurately plan activities
Customer interaction	The communications and interaction with customers
Customer relationship	Long-term perspective on a relationship
Customer segmentation	Directed sales towards different customer segments
Innovation	Innovation in routines and processes
Intrapreneurship	Innovation in routines and processes
Learning	Ability to learn from past experiences
Multi-project management	Ability to handle many projects simultaneously
Negotiation skills	Skills in negotiating with customers or suppliers
Pricing	Pricing of products and services
Process effectiveness	Perform the right tasks at the right time
Process efficiency	Perform the tasks the right way
Project complexity	Complexity of a project
Project group dynamic	Ability to build and work in a virtual organisation together with customers
Promotion	Promotion of products or of the company
Requirement precision	Ability to understand and specify the real customer need accurately
Resource planning	Dedicate resources accurately
Return purchase/updates	Gain returning customers
Sales efficiency	Efficiency of sales force to win projects
Scheduling adherence	Ability to follow project plan
Services	Offer and get paid for product related services
Terms of payment	Terms of payment
Trust	Keep promises and work in the best interest of the customer
Work load/capacity utilization	Employee work load

Appendix C – Interview guide for interviews with consultants

Background

1. What is your background?
2. What are your areas of responsibility at Medius?
3. Why do you think the customer choses Mediusflow instead of another solution?

Project administration

4. How are people staffed to different projects?
5. How are the individual responsibilities decided within the project groups?
6. How does the project group communicate internally?
7. How does the project group communicate the project progress with the rest of Medius?
8. Does scope and time plan change during the project?
9. Do the projects stay within budget and is the budget continuously monitored during a project?
10. How did you experience discrepancy (so called "Gaps") in the following two scenarios?
    a. What the customer thinks they need <> What the customer really needs?
    b. What the customer wants <> What you (Medius) thought the customer wanted?

Delivery process / MWork

Hand-over from sales

11. How is the handover performed?
12. Do you feel as if the sales people have understood the customers situation and needs?
13. Is the handover documentation sufficient?
14. What could be improved?

Pre-study

Internal start-up meeting

15. What do you do at this meeting?
16. How are Medius employees staffed to the project group?

Start-up meeting with customer

17. What are the necessary preperations for the start-up meeting?
18. Which are the participants in the start-up meeting?
19. Do you feel as if the consultants usually have the same picture of the project as the picture painted between customers and the sales people?
20. What documents do you bring to the customer?
21. What (information, documentation) do you bring from the start-up meeting?
22. What could be improved?

Workshop

23. What are the preparations for the workshop?
24. Who participates in the workshop?
25. What types of customer prerequisites are discussed (integration aspects, resource requirements etc.)?
26. What (information, documentation) do you bring from the workshop?
27. What could be improved?

Integration verification

28. What are the preparations for the integration verification?
29. Who participates in the integration verification?
30. When is integration aspects first discussed?
31. Which integration problems are usually identified?

Pre-study package approval

32. How do you perform the pre-study package approval?

33. When is the pre-study package document approved?
    Ordering CO-resources
34. How are CO-resources ordered?
35. What problems can arise when ordering CO-resources?
36. What could be simplified?
    Planning
37. How do you determine and communicate what resources the customer need to bring to the project?
38. How are the CO-resources allocated to the project?
39. What is usually included in the project plan?
40. How is the project plan shared and communicated to the customer?
41. What could be improved?
    Execution
    Installation/configuration of Mediusflow
42. What type of documentation is made from the installation/configuration?
43. What could be improved?
    Data capture set up and training
44. What Readsoft training of the customer is undertaken and how much value does it bring to the customer?
45. What documentation is made from the data capture set up and training?
46. What could be improved?
    Customisations
47. How do you treat customer-specific customisation requirements?
    Internal testing and approval
48. How is the internal testing performed?
49. What sort of documentation is made?
50. What could be improved?
    Testing
    Training of Super-users
51. Who performs the training of super-users?
52. Is the training usually undertaken at the right time in the project life-span?
53. What documentation is used during the training?
54. Does the customers usually require extra training and if so, what training?
55. What problems can arise from the training of super-users?
56. What could be improved?
    Customer testing
57. What test protocols are used in the customer testing?
58. What is tested?
59. What sort of support do you give the customer during their testing phase?
60. What documentation is made?
61. What could be improved?
    Closure
62. Are there usually CO-resources available for the Go-live?
63. How is the project handed over to Medius Support?
64. Who participates in the Go-live?
65. What problems can arise during the vid Go-live?
66. How is the project handed over to the customer?
67. How does the handover to aftermarket work?
68. What could be improved?
    Support and follow-up
69. How is the continuous communication with the customer performed?
70. How would you like to improve the continuous communication with the customers?

About the future

71. What sort of customers do you think will be increasingly important to have in the future?
72. What are the aspects affecting customer satisfaction, positively and negatively?
73. Do you think changes in work routines could increase the efficiency of the delivery process and if so, how?
74. Would increasing the number of modules in the Mediusflow set-up generally increase process efficiency at the customer?
75. Would customers benefit from workshops regarding additional Mediusflow functionality?

Appendix D – Interview guide for interviews with customers

Background

1) What is your role in your company?
2) Were your expectations adhered to already in the initial phases of the project?
3) Were you continuously updated of the project progress during the project?
4) Does Mediusflow help you in your daily work?
5) Did the project accomplish its goals?

Buying process

6) Why did you choose Mediusflow?
7) Who was involved in the decision to go with MediusFlow?
8) What other suppliers were investigated and on what grounds were they evaluated?
9) What did you think of the buying process? (communication, knowledge of the sales people)
10) What were the central issues during the negotiations?

Project administration

11) What were your responsibilities during the project?
    a) Did you understand your responsibilities?
12) How did Medius inform you of their expectations on you?
13) Who was staffed to the project from your organisation and why were these people chosen?
    a) Who was the overall project manager in your company?
14) How did you communicate within the project group, both internally and with Medius?
15) What was good about the Medius delivery process and how it was performed?
16) Did any major issues arise?
17) Did the scope and time plan change during the project?
18) Did the project stay within expected budget?
19) How did you experience discrepancy (so called "Gaps") in the following two scenarios?
    a) What you thought you needed <> What you really needed?
    b) What you wanted <> What Medius thought you wanted?

Pre-study

20) Do you feel as if the consultants had the same picture of the project as the picture painted between you and the sales people?
21) What preparations had you made for the workshop and how did Medius communicate what was expected of you for the workshop?
22) What sort of requirements did you discuss?
23) How were the integration aspects discussed the first time?
    a) What major integration issues were identified?

Planning

24) What resources did you dedicate to the project?
    a) Did you lack any internal resources or competences?
25) Was the project plan clear and sufficient?
    a) How were your wishes adhered to?

Execution

26) How much were you involved in the installation of Mediusflow?
27) Did any issues arise?
28) Was the Readsoft training clear and sufficient?
29) Was it complicated to integrate Mediusflow with your ERP-system?
    a) How involved were you in the integration?

Training-/testing phase

30) What were you responsibilities during the training?

31) Did the training you received help you in your daily work?
32) Was the training performed at the right time in the project life-span?
33) Who received the training?
34) What documentation did you use during the training?
35) Would you have wanted more training and if so, what?
36) Were Medius test protocols clear and sufficient?
37) What additional test protocols had you created?
38) Was there enough time allocated to testing?

Closure

39) Who participated in the go-live?
40) Did the go-live go as expected?
41) Was the hand-over to support/Medius Care sufficient?
42) Was there a clear hand-over from Medius to you?

Support/follow-up

43) How do you communicate with Medius today?
44) When do you contact Medius?
45) How do you feel about the support from Medius today?
46) How would you like to improve your continuous communication with Medius?

About the future

47) Looking at the whole project, what would you like to improve?
48) Would increasing the number of modules in your Mediusflow set-up increase your process efficiency?
49) Would you benefit from workshops regarding additional Mediusflow functionality?

Appendix E – Interview guide for interviews with managers

1. About (The manager)
   a. What is your Background?
   b. Which are your responsibilities?
2. About Medius
   a. How are Medius creating value for their customers?
   b. What are Medius' competitive advantages?
   c. What does Medius offer?
3. (The managers)'s particular project
   a. Organisation in project
   b. Background?
   c. Goal?
   d. Timeplan?
   e. Project phases?
   f. Experiences from earlier projects?
   g. Traps to avoid?
   h. How is best practice communicated?
4. MediusFlow 11
   a. How do you define MediusFlow in terms of service/product?
   b. In what way is MediusFlow 11 contributing with value in comparison to earlier versions?
   c. How will MediusFlow affect the existing customers?
   d. Why would some customers decide to stay in older versions instead of upgrading to later releases of MediusFlow?
   e. When will MediusFlow 11 reach the market?
   f. What separates MediusFlow 11 from competitors' products?
5. Customers today and in the future
   a. How are customers and projects distributed within the company?
   b. How are customers segmented and what implications does it have?
   c. Which customers are believed to be most important in the future?
   d. What problems do you experience with customers today?
   e. What would you like to improve in customer relationships?
   f. How is the continuous communication with customers carried out?
6. Internal communication
   a. How well are sales, consultants and developers communicating?
   b. How well do different parts of Medius communicating? Both geographically and between different departments.
   c. Who is responsible for the internal communication?
   d. Are there discrepancies in (so called *gaps*) in how information is communicated and interpreted?
7. Competitors
   a. How have competitors been evaluated?
        i. What was discovered?
   b. Who are the most significant competitors?
   c. What are competitors better at?
   d. What would you like to improve to better compete in certain areas?
8. Delivery process @ Medius
   a. How was it first constructed? By whom, when, how and why?
   b. What is good about it?
   c. What is bad about it?
   d. What would you like to improve?
   e. What do the customers think of it?
   f. How accepted is the delivery process within Medius?
   g. Where and when do problems occur?
   h. How is the collaboration with the customer built up in the delivery process?

    i.   How does the virtual organisation with the customer communicate?

    j.   What part of the customer's organisation normally takes place in the project team?

    k.   How is the virtual organisation adapted throughout the project lifetime?

    l.   How are customer desires taken into account throughout the project?

    m. How flexible is project scope and time plan throughout the project?

    n.   How flexible is budget throughout the project?
  - i. What parts are missed by setting a fixed budget early, if done?

    o.   How is the hand over from the project team to the customer and to aftermarket service at Medius carried out?

    p.   How are projects followed up after project closure?

9. Customer satisfaction
   a. How is customer satisfaction measured today?
      - i. According to this measurement, how satisfied are the customers?
   b. How would you like to improve measurements of customer satisfaction?
   c. What are the customers best satisfied with?
   d. What are the customers least satisfied with?
   e. How has this developed over time?
   f. What are your goals for the future in terms of customer satisfaction?
   g. How well do you compete in customer satisfaction in comparison with competitors?
   h. What affects customer satisfaction positively and negatively?
   i. What service that Medius offers best satisfies the customers?
   j. How do you experience discrepancies in the following scenarios:
      - i. What the customer needs <> What the customer thinks they need
      - ii. What the customer communicates that they want <> How Medius interpret what customers wants
   k. How do you work with customer relationships continuously?

10. Profitability
    a. What does Medius charge for?
    b. What cost items does Medius have?
    c. How is profitability measured in a single project?
    d. How is profitability distributed over time (sale, delivery, aftermarket)?
    e. At what level of detail is profitability segmented (revenue/cost)?