

MASTER

Adapting the sales approach to the customer's buying behaviour a case study

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Adapting the sales approach to the customer's buying behaviour: A case study

Master thesis report – Innovation Management



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Abstract

Efficiency in buying and selling complex professional services has become very important over the last decade. Professional services have a high impact on the client's organisation. To maintain efficiency in convincing customers to purchase professional services, providers of consultancy services require a new sales approach. This study investigates how to adapt the sales process to the customer's buying behaviour. This is done through a case study at NIC group, a provider of professional services in finance and purchasing. NIC group is looking for a strategy to convince customers of their solution to optimize the 'Source-to-Pay' process. To develop this strategy, this study has identified five aspects that relate to the buying behaviour of customers, i.e. buying process, Decision Making Unit, Source-to-Pay maturity, technology and need fulfilment. Through 21 interviews and a survey among 91 respondents, this research has tested the need for such a solution and the possibility to segment customers based on these buying behaviour aspects. Five clusters of organisational variables were found to predict maturity. These indirectly predict the use of technology and customer needs. Based upon our findings a new Source-to-Pay maturity model is suggested and a new sales strategy for NIC group is proposed.

Management Summary

Introduction

The services industry is one of the most important sectors in the Netherlands and is still growing. Professional services make up an important part of this industry. NIC group, a provider of consultancy services in purchasing and finance, is currently looking to improve their sales strategy. Most companies perceive purchasing and finance as decentralized silo's. Yet, both functions seem closely related. Therefore, it seems necessary to better the orchestration within NIC group to sell a complete purchasing and finance professionalisation solution. Based upon the foregoing, the following problem statement is presented:

NIC group lacks a strategy to convince prospects to purchase their complete purchasing and finance solution.

To solve this problem, it is important to prove that there is a need for this service. Second, an efficient manner to convince customers to purchase the solution is required. Therefore, the following research question was derived:

What professional purchasing and finance services do prospects need and how can NIC group fulfil this need?

It is expected that an effective solution can be offered through combining the current services offered by NIC group. The so-called 'Source-to-Pay' process seems to describe this interface between purchasing and finance on which NIC group provides consultation. It is expected that consultancy services on this process are best sold through a sales process that can be adapted to the customers' buying behaviour. For these reasons, the objective of this study is three-fold. First the Source-to-Pay process is explained. Second, the needs for professional services related to Source-to-Pay are identified. Finally, we wish to contribute to literature on selling customer specific solutions.

Theoretical Background

The review of existing literature is divided in three bodies of literature, i.e.: purchasing professional services, marketing professional services and selling professional services. The review identified five important aspects related to the customer buying behaviour. These aspects and their relations provide the input for our research model (depicted in Figure 1 below). Additionally, literature on marketing revealed practices on how to identify customer needs and how to segment customers. Finally, a review on sales literature provided insights in what sales strategies can be applied, how sales relates to purchasing and how cross-selling can be enhanced.

Our findings from literature resulted in the research model, which provides the input for the empirical part of this study.

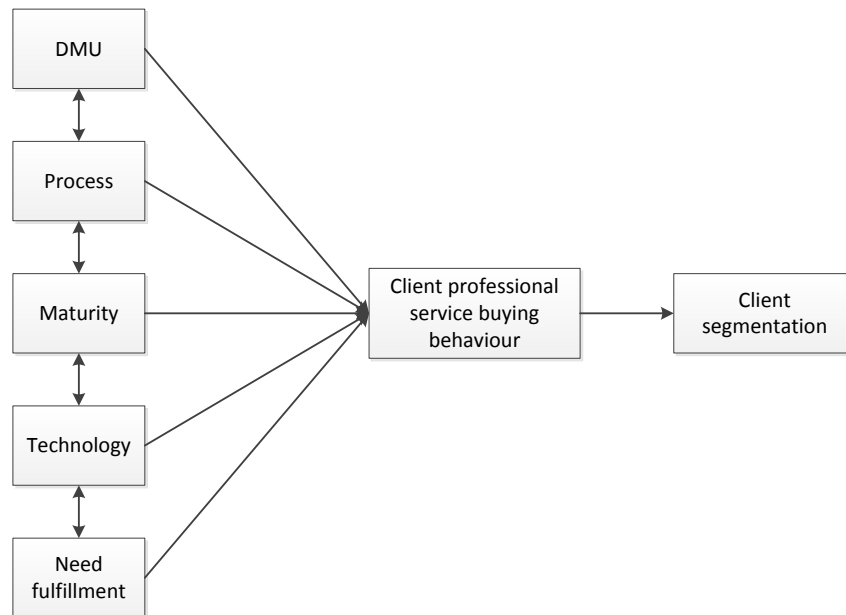


Figure 1: Research model showing the buying behaviour aspects and their relations.

Methodology

To meet the objectives of this study, an empirical research was conducted. The empirical research consisted of two parts. The first part was made up of qualitative interviews. The interviews served to establish the interviewees' Source-to-Pay process maturity and their specific needs in terms of Source-to-Pay solutions. In total 21 interviews were carried out.

The second part consisted of a survey that was conducted to substantiate the findings of our interviews. In total 91 responses were gathered from companies ranging in turnover size from 0.4 million to 2 billion. Statistical means were applied to analyse the data.

The focus of the empirical research was on the Source-to-Pay process and the buying behaviour aspects.

Discussion and Conclusion

Our research confirmed that the Source-to-Pay process indeed relates to the main purchasing- and financial administration processes. Moreover, there seems to be a need for consultation on this process. Two specific needs were identified. First, there is a need to optimize the processes that help to automate the client's invoice processing. Second, there is a strong need among clients to professionalize contract and supplier management.

Unfortunately, it seems impossible to segment customers based on their buying process and DMU. Evidence suggests that the process is too general while the DMU's within organisations vary too much. Nevertheless, five clusters were identified based on organisational variables. These clusters explain an organisation's Source-to-Pay process maturity. This maturity was found to relate to the technology and satisfaction variables. As maturity relates to preferred sales strategies as well, the clusters can help to define an initial sales strategy. However, additional customer information should be gathered to improve the sales approach continuously.

Cross- and up-selling initiatives serve this purpose. Therefore, it is recommended that NIC group changes its targets to better motivate the units to cross-sell. Additionally, sales employees should be incentivized and trained on cross-selling and to recognize customer's needs. For identifying the needs, it is advised to fill out the Source-to-Pay maturity model regularly for each customer. Personal recognition and financial rewards should be used to motivate employees to cross-sell.

To support this new approach, it is advised to set up a NIC Group wide sales team. Information on customer needs should be shared with this team. Based on this information, the team decides on a follow-up plan. This requires a good collaboration between the various NIC Group units. Managerial support and reduction of the collaboration barriers is required. This means that information sharing should be facilitated and rewarded and political barriers should be levered.

Preface

This report contains the results of my graduation project in completion of the master Innovation Management at Eindhoven University of Technology. The thesis has been carried out at NIC group in Eindhoven, the Netherlands. Throughout this project I have learned a great deal on how challenging it can be to execute your own project while dealing with limited time and multiple sources of information. In this, it is clear to me that I could not have brought this thesis to a successful ending without help. On this note I would like to express my gratitude to all people who have supported me during this master thesis.

First, I would like to thank NIC group for granting me the opportunity to conduct this research. In special I would like to thank my company supervisors, Jelle Wenselaar and Willem van den Adel for their full support. You have provided me with the freedom to perform my research as I preferred, while guiding me in the right direction. I want to express my gratitude for providing me with the required customer contacts for my research as well. I have learned a great deal from you on how to convince customers while professionally approaching them. Additionally, I would like to express my thanks to my colleagues at NIC group who provided me with valuable input, reviewed my work and made my days more interesting and fun.

Second, I would like to thank my supervisors at the Eindhoven University of Technology. Special thanks go to my first supervisor Arjan van Weele, who regularly provided me with helpful feedback and guidance. Without your help, I would not have been able to make the decisions that have helped me to successfully complete this thesis. I would like to thank my second supervisor Michel van der Borgh as well. You have provided me with valuable feedback, insights and helped me in deciding on my research approach, structure and methodology.

Furthermore, I would like to thank my friends, girlfriend and family who supported and motivated me throughout this thesis and listened to both, my enthusiasm and complaints. Special thanks go to my flat mate Corbin Joosen, who took time to endlessly discuss my issues and provided me with his opinion whenever needed. Finally, I would like to thank everyone who acted as interviewees and who filled out my survey.

Tom van Holten

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1 Introduction

The services industry is one of the main business sectors in the Netherlands. In 2016, 73.1% of the Gross Domestic Product of the Netherlands was generated through the provision of services. Furthermore, about 50% of the purchases companies make, are service related. Thus, many costs and profits are related to services (Bals, Hartmann, & Ritter, 2009). Moreover, many services affect the buying firm's value proposition to their customers nowadays (van Weele, 2009). This suggests that the importance of the purchase and thus sales of such services have increased drastically.

Other research suggests that there is a growing need for improvement of the collaboration and interface between the finance and purchasing functions (Minter, 2009). Most companies still perceive these functions as decentralized silo's. Yet, both functions are closely related and viewing them through separate lenses does often not improve the general business (van Bommel, 2016). From these findings it can be concluded that there might be a strong need for advisory services in the field of purchasing and finance. Companies do not always seem to recognize the need for improvement in this field, yet selling such services can be troublesome. Therefore, it is important for companies that operate on the interface of purchasing and finance to set up an efficient sales process. The goal of that sales process is to influence the customer such that his final decision is geared towards adoption the offered solution (Farrell & Schroder, 1999; Venkatesh, Kohli, & Zaitman, 1995). Moreover, Venkatesh et al., (1995) indicate that successful influence strategies are those that attempt to internalize favourable attitudes. To achieve this, this research tries to develop a sales process that can be adapted to customers' buying behaviours. First, the need for services that professionalise the interface between the finance and purchasing functions should be proven.

To create a stronger link between purchasing and finance, the overlapping processes have to be identified and aligned (van Bommel, 2016). This is where professional services in this field can prove their value. The 'Source-to-Pay' process has lately been recognized as an umbrella process for purchasing and financial administration processes. Moreover, governance for this process seems to be valued (Kirchmer, 2017). This process contains the strategic sourcing process, contract management, operational purchasing, handling payments and the spend analyses. Process automation software providers often view this process as two separate processes. Namely, the 'Procurement-to-Pay' - and the 'Sourcing' cycle (Smith, 2014). The term appears to be well known in practice, but it is not yet clearly described in literature. During this research, the Source-to-Pay process will be identified and its appliance in practice will be tested.

Even if the need for consultancy services that combine finance and purchasing can be proven, it is not expected to be sold without any objections. Literature broadly recognizes the influence of a buying centre or decision making unit (hereafter referred to as DMU) during the purchase of a service (Crow & Lindquist, 1985; Farrell & Schroder, 1999; van Weele, 2009; Venkatesh et al., 1995). This DMU consists of multiple individuals that together represent the organisations functions (Farrell & Schroder, 1999). The selling organisation should always consider this DMU in its sales approach. Additionally, when buying services these client organisations go through a purchasing process. This process in general consists of eight separate steps (van der Valk & Rozemeijer, 2009). Early literature has already argued for purchasing parties to maintain different relations and strategies towards their suppliers

(Kraljic, 1983). More recent literature now describes that a similar approach is applicable for the selling party. It seems that the purchasing process strongly relates to the sales process. Moreover, it seems that adapting the sales process to a customer's buying process increases sales efficiency. These findings show that knowing the buyers' behaviour benefits the seller considerably (Paesbrughe, Rangarajan, Sharma, Syam, & Jha, 2017; Simkin, 2008; Viio & Grönroos, 2013).

In selling consultancy services, the main task of the sales force is to show the added value of the services to the customers. Subsequently, the selling company flourishes through capturing a proportion of this added value (Töytäri & Rajala, 2015). Previous research has not yet developed an explicit sales process for services to achieve this. No sales process that is adaptable to different buying behaviours has been developed yet. A major objection is the challenge to quickly identify the buying behaviour of a potential customer. Segmenting customers could lever this objection.

Thus, the objective of this research is three-fold. First, the steps in the Source-to-Pay process are identified and its appliance in practice is validated. Second, the needs for consultation on this process are identified. Finally, the missing pieces in literature on a sales approach that can be adapted to a customer's buying behaviour will be filled in.

This study is conducted at NIC group. NIC group is a Dutch firm that provides consultancy services in the field of purchasing and finance. This research will focus on the development of a sales strategy for NIC group that can be adapted to their customers. However, as a broad range of customers is considered, it is expected that the results could be applied to different fields and industries.

1.1 Business case

In an ever changing world where business process efficiency is one of the major motivating factors in private companies (Gábor & Kó, 2016), NIC group is no exception. Their drive to increase business efficiency is reflected in their support for this research. Recently, NIC group has been reorganized after they acquired 'NIC Finance Projecten' and found NIC staffing, NIC academy and 'Best Deal'. NIC group consists of seven separate businesses now. These seven businesses are depicted in Figure 2 below.

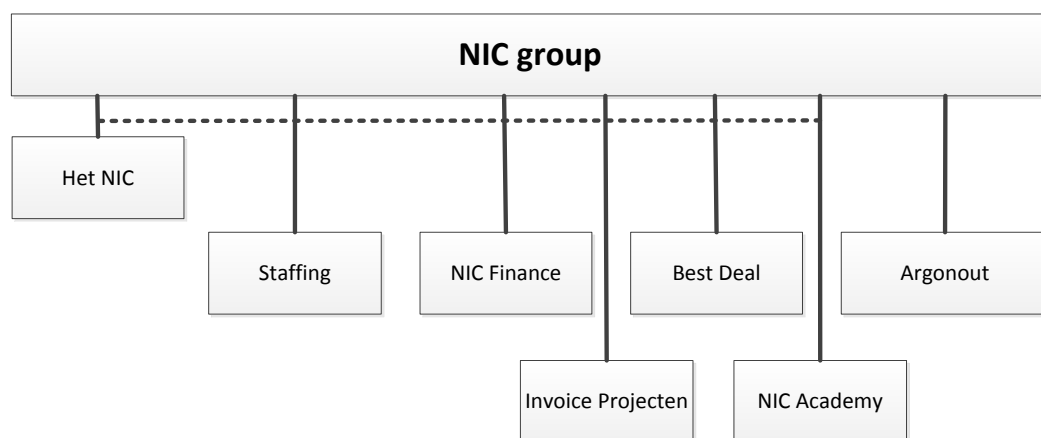


Figure 2: NIC group structure

The companies in NIC group are briefly introduced:

- Het NIC: This is the main unit of NIC group. It was founded in 1921 as “Rijksinkoopbureau”, as which it operated as a public company that was tasked with the sourcing of selected goods and services for governmental organisations. The company has been privatised in 1989 and renamed to “Nederlands Inkoopcentrum N.V.” (NIC). Although the company is now privately owned, their customer base still largely consists of companies that operate in the public sector. Their core business is to help customers to execute legal tender procedures, optimize the purchasing organisation and perform spend analyses.
- NIC Finance Projecten (NIC F.P.): NIC F.P. was acquired by NIC group in 2012, before that time the company operated under the name ‘Finyard’. They specialize in retrieving excess payments for other organisations and doing tax scans and statement research. They do this through expertise and tooling on a ‘no-cure-no-pay’ basis. Next to these core services, they provide customized services in the field of quotation, credit- and debit analyses. Although NIC F.P. serves organisations in the public sector as well, they operate mainly in the private sector. They focus on organisations that process a lot of invoices as their ‘no-cure-no-pay’ principle yields the highest profits through such organisations.
- NIC Staffing: This company provides third party employees to its customers for temporary functions. This can be full-time, part-time or on secondment. They hire out employees from NIC group and independent contractors.
- NIC Academy: One of the new organisations within NIC group. NIC Academy operates as an educational centre for skills and competences in the field of purchasing and finance. They provide group training on location and at NIC group offices. Next to providing services to individual customers, they organize free training for trade organisations’ members.
- NIC Invoice Projecten: The second new company in NIC group. ‘NIC I.P.’ was founded due to the need of NIC Finance Projecten to optimize the ‘Purchase-to-Pay’ cycle. This cycle focusses on the process to accord and process invoices. Although the company was founded from a NIC F.P. need, it is closely linked to Het NIC as well. That is, it operates in the knowledge field of operational purchasing (purchase) and finance (pay).
- Best Deal: Best Deal provides a collective purchasing solution. Organisations that do not have the size or interest to negotiate contracts themselves can register with Best Deal. Best Deal provides an online platform where they can order any kind of product for well negotiated prices and conditions from 42 suppliers. They perform the contract and price negotiations for their customers and serve them as if they order from one single supplier.
- Argonout: Argonout provides social medical support. They have been active in this branch for over 50 years now. Their services are in the form of consultation on income, labour, Dutch integration, wellbeing and social participation.

Although Argonout is an official subsidiary of NIC group, it will not be taken into consideration during this research. It performs its business completely autonomous of the other business units and will continue to do so. Moreover, the owners have voiced their intend to sell this unit as soon as an acceptable offer is received (Wenselaar, Hendricks, van der Linden, & Schurgers, 2017).

The other business units have a much stronger relation. They focus on purchasing and financial consultancy services. Lately, the importance of the interface between these functions is being recognized more often in literature (Alvarenga, 2014; Gerardo & Spanyol,

2008; Minter, 2009). This supports the feeling of NIC group board that their companies could benefit from cross-selling. They feel that through optimizing purchasing, the financial risks in invoice processing is reduced. In turn, they expect that spend analyses become more beneficial and easier to perform. Therefore, it seems NIC group could provide a complete consultancy solution for the Source-to-Pay process (Wenselaar et al., 2017).

To provide consultancy on the interface between finance and purchasing, knowledge between the units must be shared. The establishment of NIC Invoice Projecten already shows the intent to do so. This new unit focusses on automating the invoice processing process. This requires het NIC's knowledge on optimizing the operational purchasing process and NIC F.P.'s knowledge on reducing risks on invoice processing.

To effectively market this complete solution, NIC group requires an effective sales approach. Currently, the different units of NIC group follow their own sales strategies. For starters, Het NIC targets the Chief Procurement Officer (hereafter referred to as: CPO) while NIC Finance targets the Chief Financial Officer (hereafter referred to as: CFO). In turn, Best Deal targets end users and purchasers. From this it is unclear who should be targeted for a group wide solution.

The CPO mostly does what the board tells him and has little engagement for strategies other than cost reduction (van Weele, 2015; Deloitte, 2017). The CFO seems to have a narrow view as well. His focus is argued to be on processes directly related to finance only (Alvarenga, 2014; Minter, 2009). Moreover, Anonymous (2010) shows that the CFO does not yet consider the CPO to be a strategic business partner. Only 28% of the CFO's seem to believe that purchasing has a significant impact on risk exposure (Minter, 2009). These findings show that both functions might not foresee the benefits of professionalising the interface between purchasing and finance.

Moreover, the main sales for Het NIC is conducted through customers' offer requests, the managing consultants and NIC Staffing. In this, NIC Staffing seconds Het NIC consultants. There are no formal sales procedures and sales strategies. However, all consultants get a basic sales training and are informed to keep an eye out for potential leads.

NIC Staffing performs acquisition for NIC Invoice Projecten as well. They actively sell their Procure-to-Pay solution. This is the first step in selling a solution on the intercept between purchasing and finance. NIC Finance Projecten also refers customers to NIC Invoice Projecten. They base their referral on the errors they found in their customers' invoice processing. For their own sales NIC F.P. uses an external party to do cold acquisition. Additionally, they have a small internal sales force for warm acquisition. Best Deal has an internal and external sales force who both follow a formal process. Both sales forces focus on different targets. Their individual performance on those targets is rewarded through financial incentives.

The above described situation shows that the sales approach is scattered. The various approaches are reflected in the behaviours of the directors. Discussions with the management of NIC group showed that their objectives are not aligned. They are all focused on increasing their own turnover. For this purpose, some directors track the (potential) turnover they generated for, and get from other units. They only seem willing to provide each other with leads if they get enough leads in return (Wenselaar et al., 2017). This contradicts the wish to operate as a group and provide a group-wide solution.

1.2 Business Problem Statement

The above described scattered sales procedures and miss alignments form the main issues in selling a business wide solution for NIC group. However, the services they provide clearly are complementary. It seems that NIC group can provide consultancy services that cover the complete intercept between purchasing and finance.

Although proof of customers' needs for this complete solution is still required, existing literature already provide some insights. The CFO function seems to be taking on more responsibilities, which means he could use additional support from the CPO whenever possible (Alvarenga, 2014). Moreover, the Deloitte (2017) study results showed that 60% of the CPO's believe their team is incapable to deliver the procurement strategy. They feel that their budgets to train employees are too low and that salaries are not competitive. They stress the lack of data integration, understanding of data technology, periodization, poor system adoption, analytic skills and tooling. Finally, Pezza & Jan (2012) showed that optimizing the invoice processing significantly reduces financial administration costs.

Based on this literature, there indeed seems to be a need for the complete solution provided by NIC group. This solution would solve some of the major challenges that CPO's and CFO's are currently facing. However, it is rather unclear how NIC group should provide such a service to their customers.

The problem NIC group is facing is captured in the following statement:

NIC group lacks a strategy to convince prospects to purchase their complete purchasing and finance solution.

1.3 Research Question

To find a solution to the above described problem, a more generally formulated research question should be answered. This main research question is defined as follows:

What professional purchasing and finance services do prospects need and how can NIC group fulfil this need?

To answer this research question, several underlying questions should be answered first. These underlying questions are combined in the following six sub research questions;

1. *Who are the prospects for professional services that serve the interface between finance and purchasing?*
2. *What services do these prospects need on that interface?*
3. *Why do these prospects need these professional purchasing and financial services?*
4. *How can NIC meet these customer needs in an efficient manner?*
5. *What sales reorganisations are required to meet these needs?*

2 Systematic Research Approach

2.1 Research approach

The research question derived in chapter 1.1 is guiding throughout the research. To form an answer to this research question, the sub research questions need to be answered. Although these questions are more precisely conveyed, they come down to the following; Who, what and How to offer a consultancy service on the interface between finance and purchasing. To answer these questions this report has been divided in two research sections.

First existing knowledge on the subject is gathered. This information will help to gain a better understanding of the key factors in selling processional services. Additionally, it will be used to identify key decision factors in the purchasing process. Finally, it helps to acquire and enhance the subject vocabulary.

To focus the wide field of research that relates to the problem statement of this research, three bodies of literature are identified:

Purchasing professional services

To develop an effective sales model Paesbrugghe et al. (2017) argue that the sales approach should depend on the purchasing steps the customer goes through. Combined with the findings of Simkin (2008) on how to segment customers based on their purchasing process, this idea is fundamental to this research.

Moreover, purchasing literature provides insight in strategic aspects of the purchasing approach. Analysing exiting literature will provide insight on how processes related to the Source-to-Pay cycle should best be organized. Additionally, it will provide insight in the current ways of organizing these processes. This will provide a solid base to test where companies stand in practice and what their needs in this field are.

Marketing professional services

The close relation marketing and sales hold cannot be denied (Moncrief & Marshall, 2005). Marketing provides insight in how maximal adoption can be achieved. In this research, the marketing aspect of analysing customers' needs stands central.

Additionally, segmentation is an important aspect during this research. Through segmentation the prospect can be targeted effectively without having extensive knowledge of that customer.

Selling professional services

The research conducted in the field of sales is very wide. Our review will focus on identifying the main sales strategies described in literature. Additionally, a basic understanding of the sales process is formed. To complete the required knowledge, the concept of cross-selling is researched.

Second, as existing literature cannot answer the research questions in full, an empirical study is performed. This empirical part focusses on identifying the buying behaviour of customers. The results from the literature review are used to guide this empirical research.

The empirical research serves two main goals. First, it serves to identify potential customers and their needs for professional services. Second, it serves to identify the customers' buying behaviour. This is expected to facilitate customer segmentation to enhance the sales process. In addition to these main goals, the empirical study will determine to what extent the Source-to-Pay process captures the interface between purchasing and finance.

2.2 Research objectives

The main objective of this research is to enhance sales for NIC group through a group wide approach. The first step to achieve this objective is to identify the needs for a solution that NIC group can provide as a group. Specifically, this means identifying the needs for professional consultation services on the interface between purchasing and finance.

Related to this objective is the second objective: the validation of the assumption that NIC group can effectively meet these needs. In this, it is important to show that the knowledge possessed by NIC group is sufficient. Therefore, the solution that serves the customers' needs must first be specified. Additionally, this research will identify through which channels NIC group can best reach out to potential customers for this solution.

Based on above described findings, this study attempts to develop a sales approach that can be applied for several customer segments for NIC group. This means that the sales process can be adapted to the customer and his purchasing process. However, more factors influence the decision to adopt a new solution. Therefore, the customers' buying behaviours are to be identified in a broader sense. Subsequently a segmentation based on this buying behaviour is strived for. A sales approach for each of these segments can then to be developed. The final goal is to develop an improved sales approach for NIC group that matches customers' needs and buying behaviours.

In Figure 3 below the research objectives and their relation are presented graphically.

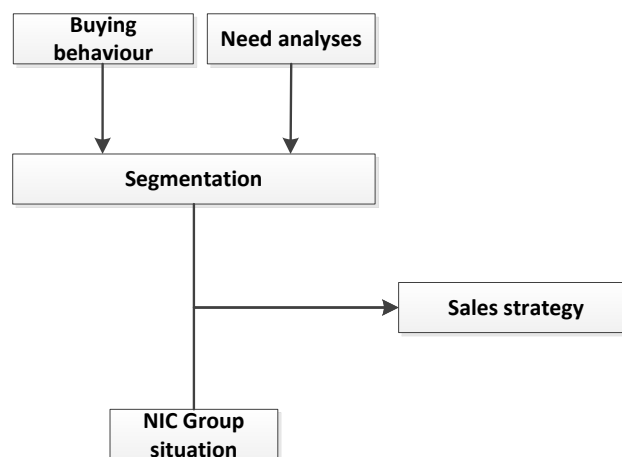


Figure 3: Research objectives and their relations

2.3 Research Methodology

This research is structured along the research cycle described by McKenzie (2000). First the problem statement is described and research questions are defined. These research questions provide the base for the systematic research approach. The data collection phase is

twofold. On the one hand, data is gathered from existing literature. On the other hand, an empirical study is performed to gather additional data specific for this research.

For answering the research questions, this research slightly diverges from the research cycle described by McKenzie (2000). The research questions are answered after the results from the empirical research are reported. These answers combined with the recommendations for NIC group fulfil the research objective. This means that a new sales approach for NIC group is provided.

For the empirical research, a top-down approach for information processing and knowledge ordering in the form of the scrum process is chosen. Scrum is a framework for managing projects in an iterative and incremental way. This means that you will work for a brief period of time (i.e. a 'sprint' or 'iteration') and then demonstrate the product increment at the end of each sprint. Scrum divides the work into manageable chunks. The primary difference between defined (e.g. waterfall/ spiral) and empirical Scrum approaches is that Scrum assumes that the analysis, design, and development processes in the Sprint phase are unpredictable (Schwaber, 1995). This process is divided in two main steps.

First, qualitative one on one interviews are conducted. Data analysis is conducted throughout the interviewing phase. Based on this interpretation the interview design is enhanced in an iterative fashion.

Second, a survey is conducted. This survey aims to substantiate the data gathered in the interviews. Again, the data analyses and interpretation is iterative with the survey design and development. If data seems to be missing, questions can be added. However, previous questions are never changed or removed to reduce the chance of missing data.

In general, this research is of an exploratory nature. First a pre-understanding is gathered through discussions with members of the organisation. During these discussions, the situation of the business case is better understood, general purchasing processes of customers are identified and available knowledge on customers' needs are conversed. Furthermore, during the empirical research part of the study, the interviews are performed in a qualitative exploratory fashion. The main purpose is to discover new ideas and insight and thus an exploratory form of research is best applicable (Jaeger & Halliday, 1998). A qualitative approach is chosen as it is proven valuable in acquiring an in depth understanding of human behaviour and the reasons for such behaviour. This supports the objective of gaining insights in customers' needs and decision-making behaviour.

The second part of the empirical research, the survey, follows the guidelines of descriptive research. The survey results in quantitative data supplemented by qualitative comments of the respondents. The descriptive nature is required as the survey aims to substantiate the interviews results with a larger quantitative data set. Due to a structured design, the collected data should be statistically inferred. This supports a descriptive research approach. In such a descriptive research, the respondent should be unaware of the exact purpose of the study. This must be taken in account in the survey design and request for participation (Knupfer & McLellan, 1996).

Although the above described process is interactive and cannot be modelled exactly, the model in Figure 4 below provides a best possible graphical overview. Although the process is of an interactive nature, the graphical representation and the report itself are structured in

sequential steps. This better shows that the standard research steps are executed, which eases reading the report.

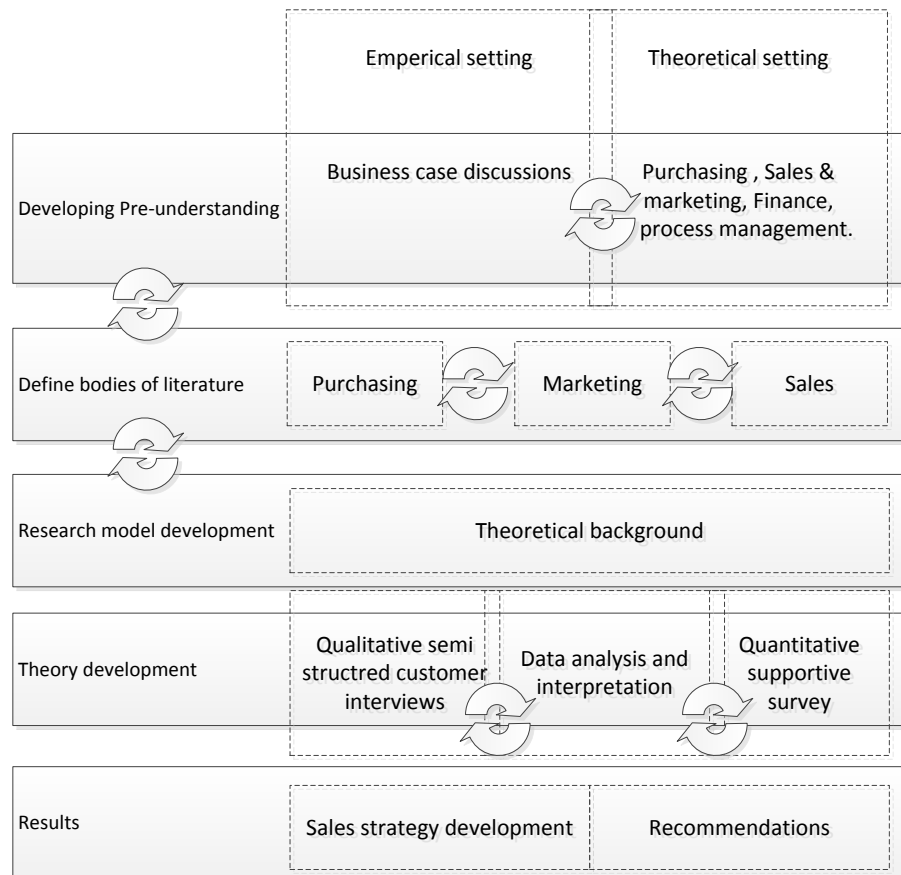


Figure 4: Graphical representation of the research process.

2.4 Literature search strategy

As previously explained in chapter 2.1, the first part of the research focusses on existing literature. For this purpose, three bodies of literature that best match the research questions were identified. This helps to develop a thorough understanding of the already available knowledge. To ensure efficiency in the identification of relevant literature, a systematic search strategy is applied.

The literature search is mainly facilitated by two search engines. The first search engine is the TU/e Library search. This is a discovery system that searches a large number of worldwide literature databases. It includes the complete article catalogue of the Eindhoven University of Technology. Second, Google Scholar is used. Scholar identifies the most relevant literature available on the world wide web for the search term based on a search algorithm. Per literature body specific search terms were applied. In Appendix A the structured search strategy is explained in detail. Appendix A also contains a table that summarises the search terms that resulted in relevant literature used in this research.

Since the quality of articles differs, it is important to verify the reliability of the potential literature. For this purpose, selection criteria for each literature source are applied. These selection criteria include content-related criteria as well as quality-related criteria. Based on these criteria literature is included in the thesis or rejected. These selection criteria are

described in detail in Appendix A paragraph two. A table that summarises the selected literature and their values on the selection criteria is presented in Appendix A as well.

2.5 Report Outline

This report contains seven chapters. The first chapter, chapter 1 "Introduction", first introduces the research topic. Additionally, it explains the business case from which the research topic originates. Based on this business case a problem description and research questions are provided.

In chapter 2 "Systematic Research Approach", the research approach is detailed. This includes the research objectives, -methodology and the applied search strategies. In this chapter explains the relation between the research questions, the objectives and the applied research method.

Chapter 3 "Theoretical background" focusses on three bodies of literature. This chapter introduces the required theoretical knowledge to achieve the objectives. This chapter results in a research model that provides the guidelines for the empirical study.

In chapter 4 "Methodology" the empirical research design is presented and methods for the analyses are depicted. Additionally, the scope for the empirical research is defined. Subsequently in chapter 5 "Results", the results from the empirical study are described.

In chapter 6 "Discussion & Conclusion" the implications of the results are discussed. This discussion is divided in two sections, the theoretical implications and the managerial implications. In the managerial implications paragraph, both the general implications and the recommendations specifically for NIC group are provided. Subsequently this chapter provides answers to the research questions. Finally, the final conclusions are provided.

In the last chapter, chapter 7 "Limitations & Future Research", the limitations of this study are depicted. Additionally, a proposition for future research is provided.

Below, in Figure 5 a graphic representation of the thesis outline is presented.

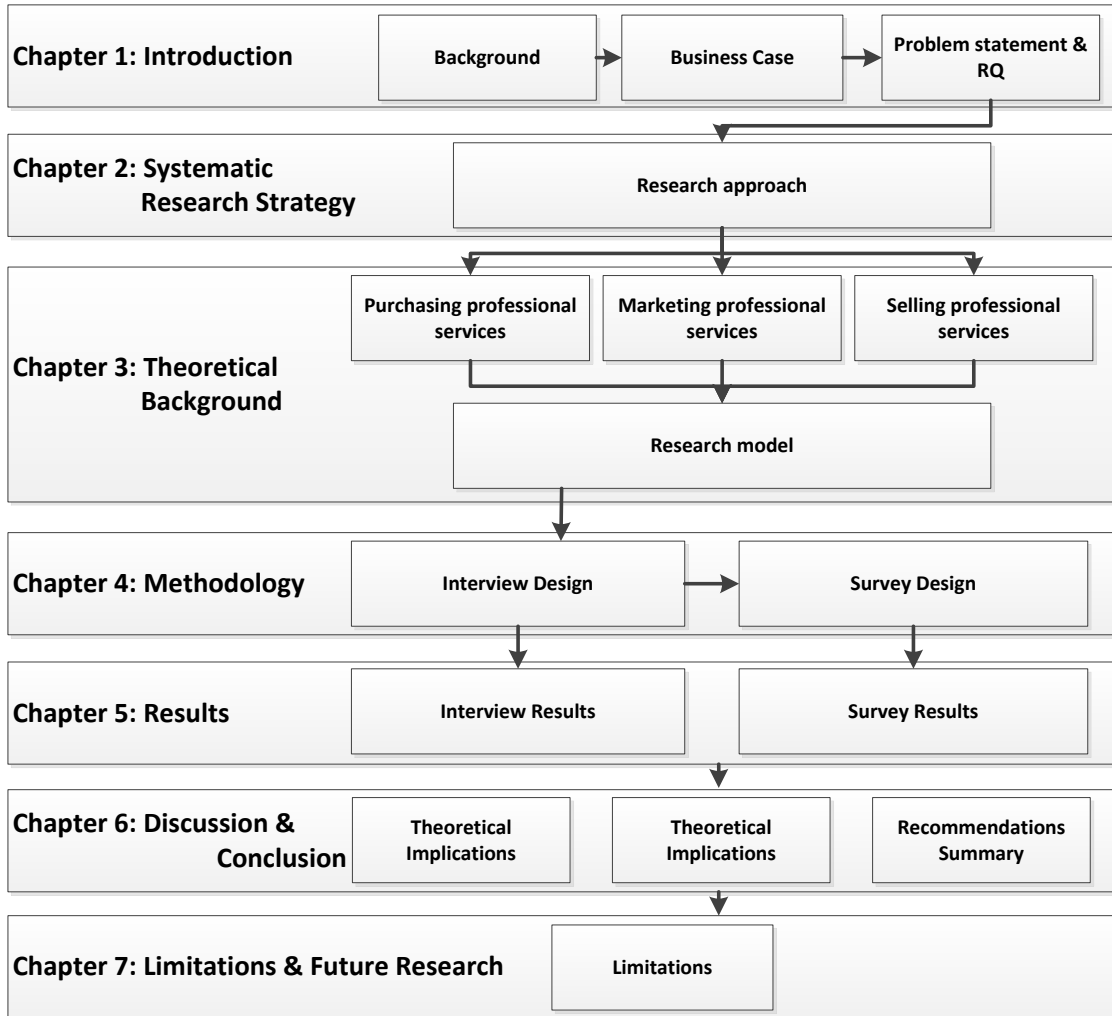


Figure 5: Graphical representation of the report outline.

3 Theoretical background

Through meeting customers' needs, sellers can deliver value for which the customer is willing to pay. Thus, only through delivering to their customers' needs, the selling party can meet their own needs. Sellers should understand customers' needs and the search process they go through to satisfy these needs. This helps them to determine what value ought to be added and how to accomplish this (Sashi, 2012). Hence, prior research by Sashi (2014) shows the interactive relation between need identification and sales process management. Besides this, others have argued the benefits of connecting sales to the buying process (Paesbrugghe et al., 2017; Rackham & DeVincentis, 1998; Simkin, 2008; Viio & Grönroos, 2013), herewith showing the importance of this relation. Although most salesmen realize that they should adapt their work on an individual level, adaptation on process level remains scarce. This inhibits many sales organisations to achieve maximum sales efficiency (Viio & Grönroos, 2013). By being able to adapt the sales process to the buying process, the buying behaviour can be better managed. However, this requires in-depth knowledge on both the buying and sales processes.

As discussed in chapter 2.1, the theoretical framework for this study is based on three aspects in existing literature. First the main aspects related to the purchase of professional services are depicted. Secondly, the main aspects of selling professional services are considered. Finally it is widely accepted that sales and marketing cannot be separated (Rouziès et al., 2005). Thus, the marketing aspects related to the sales of services will be described as well. Based on these main subjects this chapter provides the theoretical knowledge base required to develop a research model that helps to answer the questions derived in chapter 1.1.

3.1 Purchasing Professional Services

An effective sales strategy starts with an understanding of the buyer (Paesbrugghe et al., 2017; Viio & Grönroos, 2013). Based on their buying process, the influencers and the strategy every buying organisation will react differently. To develop a better understanding of these aspects Webster, Frederick, & Wind, (1972) show four organisational variables. The actions of the organisational buyer reflect the influence of these four variables: (1) people in the organisation; (2) the buying tasks at hand; (3) the organisation structure, and; (4) the used technology. Together these variables create a unique situation for every organisation. Only when the seller thoroughly understands these variables, the customer's buying centre can be influenced. If one can influence their final decision, he can influence the sales outcome (Hidalgo, 2015; Paesbrugghe et al., 2017).

3.1.1 People in the organisation

This organisational variable refers to all actors in the buying organisation. However, for this research the focus is on the actors in the purchasing process. These actors are represented by the roles in the buying centre, as will be introduced next (Webster et al., 1972). The buying centre has also been defined as the Decision Making Unit (DMU) and consists of five roles: Users, Influencers, Deciders, Buyers and Gatekeepers (van Weele, 2009). This DMU is in line with the first organisational variable (e.g. people in the organisation) by Webster et al., (1972). These actors together decide whether to purchase a product or service or not. Put another way, to improve your sales it is important to have a good understanding of the DMU you are dealing with. As mentioned in the introduction (Chapter 1), this DMU is to be influenced to successfully close a sale.

During the purchasing process, the 'buyer' is the one who is in contact with the seller. He executes the negotiations, does contract development and places the actual order. Although this often is the main contact person for suppliers, the other actors should not be disregarded. The professional buyer acts as a facilitator for the entire purchasing cycle. In the context of this thesis his or her most important responsibilities are the following (van Weele, 2009):

- *"Identifying new, potential suppliers and business partners for the company's changing business needs*
- *preparing a list of approved suppliers in co-operation with the internal customer, and after that drawing up requests for quotations and preparing their evaluation together with the user, as well as selecting a supplier by mutual agreement*
- *preparing and carrying out the contract negotiations as well as drawing up and reviewing the terms and conditions of the contract."*

Often the buyer also acts as the Gatekeeper (Chand, 2016; Crow & Lindquist, 1985). The gatekeeper is the person who controls the flow of information from the supplier to the rest of the DMU. Moreover, one person can take on several roles in the DMU. Thus the size of the decision making unit depends on the actors and the roles they take on. Crow & Lindquist (1985) show that the higher the educational background of the buyer, the smaller the DMU. Similarly, they show that the lower the education, the less confident the buyer and the less authorization he has. This implies that a well-educated buyer takes on more roles and thus less people are needed in the DMU.

To better understand the organisational buyer, the applied buying style can be identified. An important aspect is the negotiation style of the organisational buyer. Perdue, Day, & Michaels, (1986) describe five different negotiation styles: (1) Collaborative; (2) Competitive; (3) Sharing; (4) Accommodative; and (5) Avoidant. In Appendix B these styles, when they are applied and their effect on the selling party are described. In the context of this thesis it is important to realize that such styles exist. Logically they affect the communication with the buyer. Therefore, in a sales process that can be adapted to several buying organisations, these negotiation styles must be accounted for. In practice however, Perdue et al. (1986) found that the accommodative and avoidant negotiation styles are rarely used.

Furthermore, every person has his or her own priorities and working styles. To better understand these perspectives, it may be argued that the DISC model can help to identify the communication styles. This model segments people in four groups (Sugerman, 2009):

- *Dominance (D)*: these people are direct and do not hesitate to be forceful. This person is result oriented and will push to keep things moving.
- *Influence (I)*: these people are outgoing and lively. They are extrovert individuals that love to be around people and are very enthusiastic.
- *Conscientiousness (C)*: conscientiousness people have an eye for detail and are very analytical. They take time to do their job and focus on improving quality as much as possible. In general they are focused on logics instead of emotions and feelings.
- *Steadiness (S)*: being emotional, showing empathy and letting other be in the limelight are characteristics of people in the steadiness category. They prefer a stable and predictable environment where everyone gets along.

These styles can be mapped in four quarters. The horizontal axis represents a persons responsiveness, while the vertical axis represents assertiveness (see Figure 6 below).

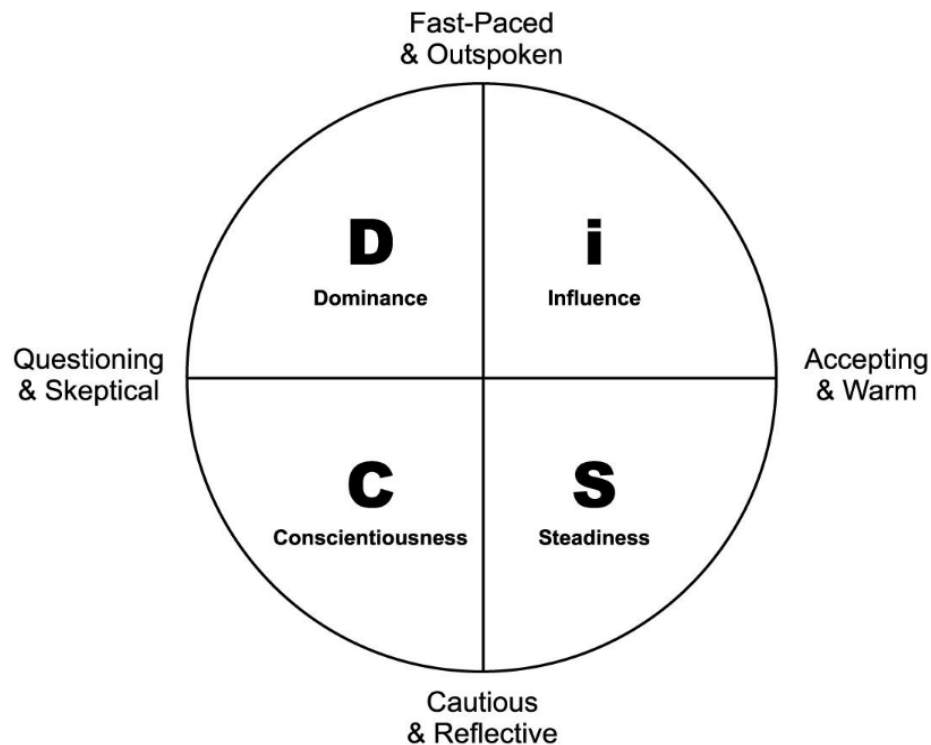


Figure 6: Communication styles DISC (Sugerman, 2009).

Knowing the personality of the buyer can help to improve your sales approach. Certain types of people can better interact with each other. If opposing characters meet, a more diplomatic approach is required. The two individuals need more time to connect on a personal level than (Sugerman, 2009). The perceived similarities (rather than true similarities) between a sales representative's characteristics and the buyer's characteristics increase the level of trust and enhance sales performances (Dion, Easterling, & Miller, 1995). Thus, by understanding the personal characteristics, the sales rep. can react to these favourably.

However, the person fulfilling the buyer's role often is not the decisionmaker. This is reflected in the fact that the buyer only has final authority in 25-40% of all purchasing decisions. Depending on the sort of buying task and the stage in the buying process, different functions are involved in the process. Throughout the purchasing process, the engagement of these functions varies. From the findings of Naumann et al. (2015) it can be concluded that the most knowledgeable and responsible departments are involved in the specification and identification phases. Thus, in the context of this thesis it is expected that the CFO will be involved in these process stages. As this thesis also includes purchasing consultancy aspects, it is expected that the CPO will be involved in these phases as well. Therefore, sales representatives must be trained to identify the individuals that influence the purchasing-decision. Moreover, the sales pitch should be adapted for these different influencer (McWilliams, Naumann, & Scott, 1992).

McWilliams et al. (1992) suggest that the seller must understand the needs and decision criteria of each member in the DMU. The main idea is that each member is concerned about significantly different issues. Therefore, the buying company should be viewed as a group of

individuals that each have their own interests, knowledge and decision criteria. In the context of this thesis, this means that to successfully sell a service, multiple individuals should be considered. The question is, which sales strategy will succeed in doing so?

This sub-chapter has shown that there are many aspects of individuals in the DMU that must be considered. The buyer will be the main contact person for each purchasing process. Nonetheless, one should realize that he is often not the decision maker. As this thesis focusses on the interface between purchasing and finance, the individuals involved in that field are of importance. The empirical part of this research will investigate who is involved in the decision-making processes and what their needs are. That will help to determine who should be contacted in what situation. It is expected that someone high in the organisation with a more general overview of the financial and purchasing processes, such as a CEO or CFO will be a key influencer. Either this person or a representative from his or her department is expected to be the buyer. Based on their negotiation and communication styles and connection to others in the DMU, different sales strategies should be considered.

3.1.2 Buying tasks

Every purchasing decision can be considered as the outcome of a buying task. However, they can be categorized in three general types of buying tasks situations (Crow & Lindquist, 1985; van Weele, 2009):

- New task purchase: a new task purchase decision is defined as the task for a firm to buy a product or service that has never been bought before. The process requires extensive problem solving and is characterized by a high degree of risk and uncertainty.
- Modified rebuy: a modified rebuy is the purchase of a non-routine product or service, but with which the firm already has some familiarity. A modified rebuy holds lower uncertainty than a new task purchase as the company already has an idea of how to value the product or service.
- Straight rebuy: a rebuy is the purchase of a routine product or service that has been bought before. In this transaction, the uncertainty is low as terms and conditions are known and registered in contracts. These purchases only go through the final stages of the purchasing process.

For each of these three categories a different approach is usually taken. As described above the uncertainty involved in these buying tasks largely reflects the difficulties associated with the buying task. Moreover, Johnston & Bonoma (1981) show that next to uncertainty, the novelty, complexity and the importance to the organisation have a strong effect on the decision making process to buy a product or service. When these factors increase, the purchasing process will be more complex. This results in the steps taking more time to perform. Additionally, more actors will be involved and contracting and monitoring becomes more difficult and time consuming.

Due to the differences in service characteristics opposed to products, the purchasing process for services is different as well (van der Valk & Rozemeijer, 2009; Smeltzer & Ogden, 2002; van Weele, 2009). Van der Valk & Rozemeijer, (2009) state that the purchasing process of services is more complex than that of purchasing goods. It is harder to specify the service,

define the content of the service level agreement and to evaluate the service. Therefore, they extended the traditional purchasing process with two additional steps (van Weele, 2009):

- Request for information
- Detailed specification

To anticipate on your customers buying process, the seller should first understand this process. When the buying process is understood a non-ad-hoc adaptive sales process can be developed (Viio & Grönroos, 2013). This extended service purchasing process is graphically depicted in Figure 7 below.

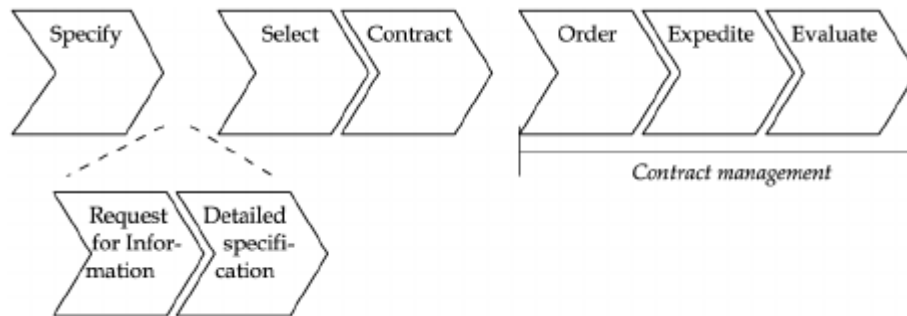


Figure 7: Service purchasing process (van der Valk & Rozemeijer, 2009)

The first step in the process, the specification is extremely different for the purchase of a service. This difficulty is largely caused by the intangibility characteristic of a service (van der Valk & Rozemeijer, 2009). Moreover Johnston & Bonoma, (1981) claim that the complexity of a purchase has a strong effect on the final decision of the buying centre. Therefore, it is important not to discard this complexity when selling services. It is argued that a useful method to specify the services is the service classification framework (van Weele & van der Valk, 2010 based findings of Axelsson and Wynstra, 2002). This method focuses on the first three steps of the above depicted process, the specification, request for information and detailed specification phases. It is suggested that one should specify key performance indicators (hereafter: KPI) that are aligned with the buying organisations goals. These should be used to measure supplier performances. In general, these aligned KPI specifications can be classified by the following four specifications:

- Input specification: focuses on resources and capabilities of the supplier.
- Throughput specification: focus on supplier processes needed to produce the service.
- Output specification: focus on the functionality or the performance of the service.
- Outcome specification: focus on the economic value for the customer to be generated by the service.

These four specification categories can be combined in two strategic approaches. The first two specification categories (i.e. Input- and Throughput specification) can be classified as behavioural focused KPI. Second, Output- and Outcome specifications can be classified as performance focused KPI. By covering all four of these specification aspects both the behaviour and performance of the supplier are contracted. Therefore, it is best to strive to include all four of these aspects in the specification. This helps to put the right governance structure in place during the contract and contract management stages. As a consequence,

monitoring the encounters between the service providers and business becomes easier (van der Valk & Rozemeijer, 2009; van Weele & van der Valk, 2010).

Although these categories provide a basis for buyers, specifying professional services remains challenging. Especially for complex professional services early supplier involvement is highly important (K. Scholten, Faber, Bijl, De Haan, & Kirchhoff, 2016). Moreover, early supplier involvement requires good inter-personal relationships (Terho et al., 2012). Van der Valk & Rozemeijer, (2009) and Scholten et al., (2016) argue that it is important that suppliers with a high willingness to collaborate are selected. Due to the difficulties faced in the specification phase, this is especially important during the initial stages of the purchasing process. From a selling perspective these findings mean that it is important to be willing to collaborate.

During the selecting and contracting phases, the specification should allow for improvements. This implies that buyers might be unable to come up with a detailed specification for selecting the right supplier upfront. Additionally suppliers might have to be preselected such that they can engage in the specification phase (K. Scholten et al., 2016). Therefore, the first stages should be considered as iterative. During the order and expedite phases, one should realize that the buyer-seller relation is important. A good relation helps to overcome information asymmetries and opportunisms (Glückler & Armbrüster, 2003). However, the sort of relation that is required can vary from a close informal relation to a distinct and professional one (Werr & Perner, 2007; Gelderman, Semeijen, de Bruijn, 2014).

Similar to the effect on the process, the buying task situations also affects the size of the DMU. McWilliams, Naumann, & Scott (1992) show that the size of the DMU significantly increases for a new task purchase compared to a rebuy or modified rebuy. It is expected that this effect again can be related to increased complexity and uncertainty. The reason for this is that increased information availability reduces uncertainty. As information is diffused throughout the organisation, more actors should be involved to reduce uncertainty. Furthermore, in uncertain decision making, the authority is spread throughout departments and thus more decisionmakers are involved. For a routine product, all information is available within the purchasing department and often no special authority is required. Consequently, no individuals from other departments have to participate in the DMU.

Finally, to categorize the sort of service that is to be purchased, Fitzsimmons, Noh, & Thies, (1998) have developed a classification matrix. They define six sorts of services based on the importance of the service and the focus of the service. The importance is qualified as either being high or low. The focus can be on property, people or process. In the context of this thesis the focus is on providing consultation services on linking financial invoice processes with the purchasing process. Such a service can be classified as a professional service. Fitzsimmons et al., (1998) found that such professional services have a high importance to the buyer. This means that for such organisations it is important to develop a relation with the supplier. Furthermore, for services that are more critical to the business it is expected that senior managers are more involved than for less critical services (van Weele, 2009). Moreover, a smooth implementation of processes and software packages seemingly requires support from C-level management (Ahmad & Pinedo Cuenca, 2013; Sharma & Yetton, 2003; Thong, Yap, & Raman, 1996). This implies that c-level management is involved in the implementation of the total solution offered by NIC group. This means that the selling company should always consider c-level management as actors in the DMU.

To further increase sales efficiency, the seller can focus on meeting criteria used by the buyer to select consultancy services. Dawes, Dowling, & Patterson (1992) show that the two most important choice criteria are the consulting firm's general reputation and its reputation in a specific functional area. The third most important criteria relate to the buyer personally knowing the specific consultant who will work on the project. This indicates that it is relatively important that the consultant has positive personal contacts and a strong network. Other crucial factors are the prior experience with the consulting firm, the consultant and their relative experience in the client's industry. On the other hand Dawes et al., (1992) found some reasons to reject a consultant as well. The first two reasons to reject relate to the lack of adequate relevant industry experience. Second, the lack of understanding the problem and clients' needs is found to be a major reason to reject a consultant. Finally, price can be a reason to reject.

The main elements of each buying task are represented in the purchasing process. A general process has been identified by literature, but every company will utilize its own, customized version. Findings from van Weele (2009), van Weele & van der Valk (2010) and van Weele & Rozemeijer (1998) remark that more mature organisations have a stronger focus on performance specifications. However, they still considering the other three specification categories as well. This focus is resembled in the contracts a company has negotiated. As these aspects seem to relate to the buying behaviour of a customer, this might mean that these contracts provide a way to segment companies' buying behaviour.

3.1.3 Organisation structure

Regarding the third organisational variable (e.g. organisation structure (Webster et al., 1972)) the purchasing maturity plays an important role in the purchasing organisation. Koivisto, (2013) shows that more than 15 purchasing maturity models have been developed over the last three decades. The first maturity model that has been recognized was Reck & Long's, (1988): "Strategic stages in the development of a purchasing function" (Axelsson et al., 2005; Rozemeijer, 2000; Schiele, 2007; van Weele, Rozemeijer, & Rietveld, 1998). Paesbrughe et al., (2015) have used this classification framework (Detailed in Appendix) as a lens through which to view the evolution of the purchasing function. Subsequently, they have successfully matched this framework to certain sales strategies. However, they have failed to include the criticality of the to-be purchased solution in their model and used a framework that has not been empirically tested (Paesbrughe et al., 2017; Kirstin Scholten et al., 2016).

In this research the purchasing model of Van Weele & Rozemeijer, (1998) which combines previous maturity models will be considered (Koivisto, 2013). The reason to do so is its completeness and the fact that it has been tested (Bemelmans, Voordijk, & Vos, 2013; Kirstin Scholten et al., 2016). It offers a clear overview of six stages in the purchasing maturity and it includes organisational aspects such as decentralized vs. centralized and functional vs. cross-function focuses. A graphical representation of this model and the main stage of some main industries can be found in Figure 8 below.

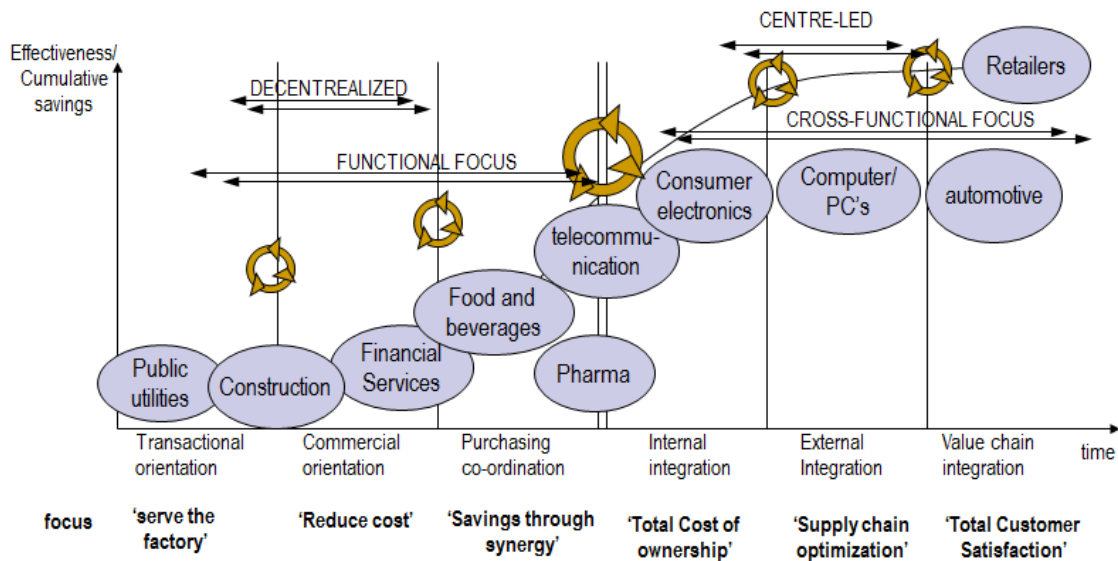


Figure 8: Purchasing maturity model (van Weele, 2009)

Van Weele & Rozemeijer, (1998) defined the following stages in their maturity model:

Stage 1 (Transaction orientation):

The primary task of purchasing is to find appropriate suppliers for raw materials and supplied components. There is no explicit purchasing strategy in place.

Stage 2 (Commercial orientation):

Purchasing strategy at this stage is characterized by a sharp focus on low prices. The culture is that of playing hard negotiations with many suppliers.

Stage 3 (Co-ordinated purchasing):

Led by a strong central purchasing department to implement uniform buying policies and systems, the emphasis here lies on cross unit co-ordination and compliance with nationally negotiated contracts.

Stage 4 (Internal integration):

The emphasis is on cross-functional problem solving with the objective of reducing total life cycle cost and not just the unit cost of components.

Stage 5 (External integration):

An explicit outsourcing strategy is combined with extra attention to collaborate with supply chain partners on product development and preproduction planning.

Stage 6 (Value chain orientation):

Delivering value to the end customer in order to satisfy the needs in end-customer markets. Subcontractors seek for support among their suppliers.

Based on the model of van Weele & Rozemeijer, (1998), Bemelmans, Voordijk, & Vos, (2013) have developed a quick scan tool to assess a company's maturity. Based on twenty characteristics a company's purchasing maturity can now be mapped quickly.

In line with the organisational structure variable (Webster et al., 1972), Johnston & Bonoma (1981) show that the level of formalization and centralization of the customer's organisation affects the DMU. They express four significantly important structural dimensions of the buying centre:

- Extensivity – The total number of employees involved.
- Connectedness – The communication between actors in the buying centre.

- Vertical involvement – The number of hierarchical layers involved in the buying centre.
- Lateral involvement – The number of different departments and divisions involved.

The level of formalization positively correlates with the extensivity, the connectedness and the lateral involvement. Furthermore, the level of connectedness increases when the customers' organisation is more centrally organized. As shown by Bemelmans et al. (2013) formalization and centralization in turn are predictors of the purchasing maturity. This shows that the extensivity, lateral involvement and connectedness are closely linked to the purchasing maturity. Thus, the structure of the DMU seems to relate to the purchasing maturity. Additionally, Bemelmans et al. (2013) remark that purchasing maturity is determined through the formality of an organisation (i.g. decentralized vs. centralized). Thus, it seems logical to conclude that insight in the purchasing maturity provide insight in the structure of the buying process and the DMU. This makes the purchasing maturity an important aspect in this research.

The main aspect on which the purchasing organisation can be judged is the purchasing maturity as it contains a broad range of elements. Previous literature provides an indication that this maturity is a strong predictor for the DMU. As mentioned in the introduction (Chapter 1) the DMU has to be positively influenced to realise a successful sale. As the DMU consists of multiple roles that can be hidden from the seller (Chapter 3.1.1), a DMU predictor would prove to be useful. As tested methods to determine the maturity already exists, these can be used to predict the DMU. That is, if it can be proven that certain DMU setups relate to certain maturity phases.

3.1.4 Used technology

Professional services such as provided by NIC group require personal contact between the buyer and seller. As a matter of fact, creating value for the customer through such services requires a thorough understanding of their organisation. Although numerous technologies are used to contact and connect with suppliers, they cannot substitute the personal interaction (Wenselaar et al., 2017). However, due to technology developments such as the internet, buyers can now access information much easier. Grewal et al. (2015) define two forms of digital technologies that have a disruptive effect on the classing buying process: *digital information technologies (hereafter: DIT)* and *digital manufacturing technologies (hereafter: DMT)*. Both technologies have been enabled by the spread of the internet.

With DIT they refer to the integration of telecommunications, computer systems and data that enable forms to access, store, transmit and manipulate information. Examples are smartphones, VoIP, social media, cloud computing and big data. These technologies help firms to access, curate, manipulate and transmit information in real time which helps to improve business process productivity. DMT on the other hand relates to technologies that help companies to design, manufacture and acquire objects independently. Due to these technologies companies can quickly prototype and are less dependent on production suppliers (Grewal et al., 2015). Especially DIT provides more power to buyers than ever before. Through having quick access to information from multiple sources, data on competitive offerings is available at any time. This helps to increase the purchasing process efficiency. Furthermore, it helps to involve more people throughout the organisation in the buying centre. This helps to increase the buying quantity and drop prices (Grewal et al., 2015). Finally, online communities and reviews help buyers to evaluate their suppliers.

Moreover, Grewal et al. (2015) state that there are buyers who perform their complete information gathering through the internet. With advances in DIT less and less personal contact is required. In some cases, new task purchases for services can even be performed without personal contact with the seller. For example car repairs can now be ordered in detail through the internet using the FIXICO app (Wenselaar et al., 2017). The online purchase of such services had been perceived as impossible until recently. This might mean that there might be an innovative way to define the exact need of a customer for professional services through the internet. However, this aspect is not included in the scope of this research. Still, the use of technology in purchasing processes will be taken in to account.

Although many companies are implementing IT solutions to improve their purchasing, it seems that IT itself is not the improving factor. Through implementing IT solutions companies start thinking about their purchasing processes and strategies. Having clear and organized processes is required to successfully implement the IT solutions. Therefore, the implementation of such systems leads to organisational improvements. These improvements, not the actual system leads to improved performance (Rodríguez-Escobar & González-Benito, 2015). Similar conclusions can be drawn by performance measurements based on the purchasing maturity. The higher the maturity, the more IT-systems are used (Kirstin Scholten et al., 2016). This could mean that the maturity is a latent variable that represents the implementation of processes and IT-systems. These two aspects among others indeed seems to be the underlying factors of the maturity according to the stage descriptions.

Recent technologies reduce the need for personal interaction with sales representatives and increase the efficiency in buying tasks. This does not only affect the way one should contact his or her customers and organize the sales processes, it also shows a certain need. There always is a strive for more efficiency, which seemingly can be achieved through technology. In providing consultation to increase efficiency in the Source-to-Pay process there might thus be a need for certain technologies. In answering the second sub research question through empirical research, this need should be considered. However, not the need for a specific technology should be researched. The underlying issue that can be solved with new technologies should be discovered. Moreover, the findings in this sub-chapter indicate that there is a link between the buying behaviour, purchasing maturity and used technology.

3.2 Marketing Professional Services

Marketing and sales are interrelated. Thus, it is important to review marketing strategies and its aspects to develop a fitting sales strategy. This relation is particularly shown in the current literature trends on including buying behaviour and customer analyses in the sales process (Moncrief & Marshall, 2005). Paesbrugghe et al., (2015) have already shown that it is beneficial to develop a sales process that is adaptive to customers' buying processes. However, a structured adoptive process is proven to be better than ad-hoc adaptation (Viio & Grönroos, 2013). Yet, it is not possible, nor necessary to develop a separate but structured sales process for every individual customer. To more efficiently serve your customer it has been argued to apply customer segmentation (Dibb & Simkin, 2008; Hidalgo, 2015; Simkin, 2008). Additionally, it is important to understand value of your offering. Determining this value can be done by researching your customers' needs and validating your offer accordingly (Woodruff, 1997). Correspondingly, the to be purchased product or service (the need) was found to strongly influences the DMU. Thus, it is important to know your customers' needs. They seem to provide valuable insights in the buying behaviour of your customers.

3.2.1 Segmentation

Although the buying situation for every customer is unique, segmentation has been accepted as an effective method to apply general strategies to individual customers. However, companies and researchers are still focused on individual-level characteristics of performance and its predictors, often losing sight of the customer. Losing sight of the customer can lead to miss alignment of the sales strategy and thus losing potential customers (Sigh & Koshy, 2010). Comparable results arise from marketing research. Leading strategists argue that product, market and customer characteristics alone will not suffice as indicators of customer behaviour. Thus, target market strategies should be aligned to the behaviours and attitudes of potential customers (Simkin, 2008). In addition Simkin (2008) states the following: “all too often business-to-business marketers utilize little more than trade sectors or product groups as the basis for their groupings of customers, rather than customers' characteristics and buying behaviour”. In contrast to B2B marketers, the academic world does not refer to such groupings as segmentation. Literature shows that only a true segmentation focused on customer's needs, expectation, aspiration and share of wallet will help to achieve the following benefits (Hidalgo, 2015):

- create barriers for competitors;
- deliver a focused product and service proposition that is differentiated from rivals' proposition;
- build stronger relations with the most attractive customers;
- increases revenues and share of wallet from targeted customers;
- helps to determine who not to chase for business;
- helps to prioritize resource allocation and marketing spend on the most worthwhile opportunities;
- establish commitment and alignment within the organisation.

Thus B2B practitioners require a process that readily creates market segments containing only customers that share characteristics, needs, buying behaviour and decision making attributes (Simkin, 2008). Although the “how” on such market segmentation has been described in literature, it does not yet provide a sequential way of organizing the acquisition process accordingly. This research will fill this literature gap by linking sales and acquisitions strategies to general market segments that are based on customer characteristics and buying behaviours.

Previous chapters have identified a wide variety of aspects that define customer buying behaviour. This indicates that there are numerous varieties of such behaviour, which is in line with findings from previous literature (Fader, Hardie, & Lee, 2005; van Weele, 2009; Webster et al., 1972). It stands to reason that one cannot develop processes and strategies for each individual customer. Segmentation provides a solution to this issue. Through segmentation, customer specific needs can be met in an efficient manner without redeveloping strategies and processes for each individual customer.

3.2.2 Need identification

In general literature agrees on the fact that a product or service has to solve a problem at a competitive cost to succeed (Armstrong, Adam, Denize, & Kotler, 2015; Du, Jiao, & Tseng, 2003; Griffin & Hauser, 1993). This shows the importance of understanding the problems customers are dealing with. This is where the selling party can show their added value. If a

customer can be convinced that the offered solution solves their problem at a reasonable cost, they are likely to adopt the solution. Therefore, the offered solution should match the exact needs of the customer. Thus, the importance of understanding the needs of a customer.

However, the processes of developing and offering a solution is not as straight forward as it may seem. Identifying customers' needs can be very difficult. Consumer needs are broadly categorized as being implicit or explicit (Kumar, Shah, & Robinson, 2011), sometimes also referred to as latent and expressed needs (Zhou, Jianxin Jiao, & Linsey, 2015). Implicit needs are needs for which the customer is not aware of a solution, or not even aware of the problem. Explicit needs are needs that the customer can explicitly voice. It goes without saying that determining the implicit needs is much harder than finding explicit needs. To find such needs one has to understand the semantic implications associated with use cases (Zhou et al., 2015). However, meeting implicit needs can provide much more competitive advantages as these needs are not as easily satisfied. As a new product or service has to be three times as beneficial as the current solution: a new product or service that meets an implicit need has a much higher chance to succeed. To identify such implicit needs text mining mechanisms are applied to interviews, surveys or focus groups (Kumar et al., 2011).

Still one has to know what to ask for in a qualitative research to find these implicit needs. To identify these needs Woodruff, (1997) has developed five research questions. These questions focus on how value is currently created for the customer and how additional value could be created. This approach fits this research as the tendency is to combine existing knowledge within NIC group to meet additional customer's needs. Through answering these questions, needs and their priorities can be identified. The five questions derived by Woodruff (1997) are the following:

1. what is valued by the target customer?
2. what value dimensions that the customer wants are the most important?
3. how well are we doing in delivering these value dimensions?
4. why do we deliver as we do?
5. what are target customers likely to value in the future?

Research by Griffin & Hauser (1993) shows that one-on-one interviews are the most cost efficient manner to gain insights in customer needs. In such qualitative interviews, the customer should be asked to consider a situation where needs might arise. The interviewee should then describe its satisfaction with the execution of process or task and the related issues. Based on his or her inputs both explicit and implicit needs can be identified. Moreover, between 10 and 30 customers should be interviewed for approximately one hour to provide a typically sufficient set of data. By interviewing approximately 12-15 customers 80% of the needs can be identified. To capture about 90% of the needs, approximately 20-22 customers have to be interviewed (Griffin & Hauser, 1993).

Even when a need is recognized and a matching solution is offered, the decision to purchase the solution is not certain. It is suggested that many companies show intentions to buy complex products that solve their solution. However, these complex solutions often are not purchased. In general, less complex solutions that offer a high value as well are actually purchased (Arts, Frambach, & Bijmolt, 2011). This difference shows the importance of the distinction between the actual purchase compared to the intention to purchase. To derive at

the actual purchase decision a customer goes through three phases: (1) Awareness of the solution, (2) consideration of the solution, and (3) the actual adoption of the solution.

A customer cannot skip any of these three stages. Therefore, customers should first be aware of the needs and the solutions to fulfil these needs. Generating awareness for implicit needs can be difficult. Therefore, it is harder to sell solutions that satisfy these implicit needs. It is the task of the selling company to create this awareness. Only through creating awareness the solution is considered and eventually adopted (Arts et al., 2011). The main course of generating awareness is through promotions. Promotions however can be very diverse. This study will not go in to detain on how to apply promotions to create awareness. However, the importance of creating awareness should be noted.

After awareness has been generated, the customer should be convinced to consider the solution. Consideration depends on the provided benefits and compatibility of the solution. However, for the actual adoption Gourville (2006) identified eight barriers that should be overcome before the solution is adopted. These barriers originate from customers who do not want to part form the current situation (barriers 1-4) and suppliers who miss perceive the need of the customer (barriers 5-8). These barriers are the following:

1. customer is sceptical about performance of the solution.
2. customer does not feel the need for the solution.
3. the current solution satisfies.
4. status quo is preferred, customer does not want to diverge from the current situation.
5. the supplier is over convinced of the solution.
6. the necessity is imperfectly perceived by the supplier.
7. the supplier is dissatisfied with the alternatives, while the customer is not.
8. supplier views their solution as the benchmark, customers often do not.

3.3 Selling Professional Service

Comparable to the purchasing process described in chapter 3.1.2, a general sales process has been developed. This process is defined by seven steps (Åge, 2011):

- prospecting;
- pre-approach;
- approach;
- presentation;
- overcoming objections;
- close; and
- follow-up.

Although in general these seven steps are always followed, the execution can differ per firm. These sales processes guide sales representatives in selling a solution to potential customers. In doing so, it is helpful to have a more defined and formal sales process or sales workflow. Matching this sales process to the customers buying process is found to increase sales performance (Giacobbe, Jackson ., Crosby, & Bridges, 2006; Viio & Grönroos, 2013). However, as the buying processes applied by customers differ, the sales process must be flexible. Applying sales based on such a flexible process is referred to as adaptive selling in literature. Weitz, Sujan, and Sujan (1986) (As quoted by Spiro & Weitz, 1990) define the term adaptive

selling as the 'altering of sales behaviours during a customer interaction or across customer interactions based on perceived information about the nature of the selling situation'.

In addition to this sales process a company should have a complementing sales strategy. Over time many sales strategies have been developed. In this chapter four sales strategies that have been defined by Paesbrugghe et al., (2015) as being key sales strategies in literature are discussed. However, it should be clear that these strategies are not exhaustive. These four strategies have been chosen to maintain focus. Paesbrugghe et al., (2015) have been able to match the model of Reck & Long, (1988) (discussed in chapter 3.1.3) to these sales strategies. Therefore, in addition to the sales strategies this match will be discussed briefly in the next sections.

3.3.1 Relationship selling

During the 1980's there was a slight shift towards the idea of relationship selling instead of more traditional sales techniques such as script-based selling (Crosby, Evans & Cowles, 1990). In relationship selling, the task for the sales person is to guide the customer through the stages of the relationship development process. This process starts at establishing a business relationship and aims to develop a long-term commitment (Crosby et al., 1990). Such sales approaches however require different performance measurements for sales persons. An opposed performance measurement is to measure the degree to which the preferred solutions of salespeople are implemented across their customer base. Additionally, the performance in a relationship context should be related to the contribution of the sales person to the continuation of the relation in the long run and the renewal of contracts (Biong & Selnes, 1995). In line with this performance approach, Biong & Selnes, (1995) define two main characteristics of relationship selling:

- Continuity: Defined as the willingness of customers to buy repeatedly from the same supplier. In other words; the willingness of parties to prolong the collaboration for a finite or indefinite period of time. This should be of concern to marketers and salesmen as virtually all companies depend to some extent on repeat business. A major driver for continuity is the supplier – buyer relation. However, other factors such as a lack of alternatives can also result in continuity (Crosby et al., 1990; Biong & Selnes, 1995).
- Dependence on Supplier: During the development of a relation, suppliers and buyers learn to trust each other. Through gradually increasing commitments in terms of investments in products, processes or human resources dedicated to the relationship the dependence is increased. The level of dependence in a relation will affect the effectiveness of a salesperson (Buchanan, 1992; Weitz, 1981).

In their study Biong & Selnes, (1995) showed that through various behaviours the salesperson can affect the buyers' motivation to continue their supplier relationship. Furthermore, they show that a higher dependence requires a different sales approach. This would require a more consultative role and solutions to the client's problem should transcend traditional service boundaries. Although many benefits of relationship selling have been proven, not all firms seek relationships. In some cases the length of a relationship even correlates with negative behavioural and attitudinal measures (Paesbrugghe et al., 2017).

According to Paesbrugghe et al., (2015) this strategy matches companies in the passive cluster (defined by Reck & Long, 1988). Risk reduction is one of the main priorities for firms in this cluster, which can be achieved through relationship selling. However, many companies in

this cluster strive for supply risk reduction through sourcing from many suppliers. Therefore, more traditional non-involvement and local sales can be applied as well. From these findings, it can be concluded that either more traditional or relational sales strategies can be applied in lower maturity stages.

3.3.2 Value selling

The main idea in value or value based selling is to advertise the total cost of ownership (TCO), rather than focussing on the purchase price. The difficulty with such sales strategies lies in determining customers' value and costs. Furthermore, it is often difficult to express the value or TCO as a tangible asset. Therefore, communicating the value pricing is hard and thus implementation of such a strategy can be problematic (Paesbrugghe et al., 2017). To overcome such difficulties, value based selling requires open communication between the buyer and supplier. This makes the process more time consuming than traditional sales techniques. Moreover, the approach of value based selling is likely to fail when it is not in line with the customers purchasing approach (Hinterhuber & Liozu, 2015). Although many difficulties in value based selling have been identified, the benefits outweigh many of them. Through value based selling the supplier and customer co-create value and enhance customers profits (Terho, Haas, Eggert, & Ulaga, 2012). As both organisations benefit from this approach they will both strive for success and thus issues such as opportunistic behaviour are reduced. However, this does require a thorough understanding of the customer's business model. In addition, the value proposition should be crafted and communicated to the customer (Terho et al., 2012).

This type of sales best matches the independent cluster (defined by Reck & Long, 1988) as companies in that cluster generally focus on TCO (Paesbrugghe et al., 2017). These companies are not interested in long term relations, but they want quick help in delivering value to their customer. From these findings it can be concluded that companies operating in the middle stages of the purchasing maturity framework (van Weele, 2009) can best be served through value selling.

3.3.3 Key account selling

In Key account selling the key account programs have proliferated to such extent that sales representatives recommend key account management programs for all important customers. Key account management programs are additional activities, services, prioritization or designation of special personnel available to key customers (Paesbrugghe et al., 2017).

Successful key account management consists of four basic elements (Ojasalo, 2001):

1. identify the key accounts.
2. analyse the key accounts.
3. select suitable strategies for key accounts.
4. develop capabilities to build, grow and maintain relations with them.

Subsequently, four criteria to determine the importance of accounts and thus the key accounts were described:

- the use of strategic resources;
- the age of the relationship, the share of the customers purchases that is fulfilled by the supplier;
- profitability of the customer to the supplier; and

- the relative growth of the buyers' market and his share in that market.

In an analogous way Ojasalo, (2001) describes five activities in analysing a key account. The following should be analysed:

- basic characteristics of a key account;
- relationship history;
- level and development of commitment to the relationship;
- goal congruence of the parties; and
- switching costs.

The strategy behind key account selling is strongly related to relationship selling. Krapfel et al. (1991) even discusses a strategic approach to manage buyer-seller relations for key accounts. Their findings suggest that a relationship management approach is to be applied to the identified key accounts. From this it can be concluded that the key account selling strategy is an extension of the relationship selling strategy.

According to Paesbrugghe et al., (2015) key account selling can best be applied to companies operating in the integrative cluster (defined by Reck & Long, 1988). These companies want to partner with suppliers that provide them with a unique position. They try to limit their supply base and are only willing to work with suppliers who provide the most value and best collaboration. This requires extensive investments from the selling company and thus matches with key account selling. However, for the selling partner such a collaboration is only interesting when the customer indeed has been identified as a key account. From this it can be concluded that customers in a high purchasing maturity phase can best be approached through key account selling.

3.3.4 Solution selling

During the last two decades companies have shifted from selling specific services and products to selling solutions. (Bosworth, 2002; Sharma, 2006; Cova & Salle, 2008; Matthyssens & Vandenbempt, 2008; Tuli, Kohli, & Bharadwaj, 2007; Sharma, Iyer, & Evanschitzky, 2008; Sharma & Iyer, 2011). More explicitly stated, the idea is to sell a solution to a problem a customer is facing. In this sales approach, the salesperson is not focused on overcoming objections, but on serving as a consultant. The salesperson helps to identify the customers' problems, determine needs and propose an effective solution (Moncrief & Marshall, 2005). The underlying idea is that it is easier to convince a customer by providing a concrete solution to his problem. However, applying this strategy requires a substantial investment in sales capacity and capability. About three-quarters of the companies that have tried to implement this strategy have not been able to demand price premiums to cover their costs (Paesbrugghe et al., 2017). Dixon & Adamson (2011) and, Adamson, Dixon & Toman, N. (2012) even go as far as stating that solution selling may be an annoyance rather than a benefit for customers. Their reasoning is that 60% of the purchasing process has been executed before any contact is made with a supplier. Consequently, these customers already have extensive knowledge of the offerings and capabilities of selected suppliers. Thus, their need for advice on purchasing the right solution seems to dwindle.

However, this does not mean that there is no further need for solution selling at all. Certain sales representatives are actually flourishing in solution selling. The main reasons for them to flourish is that they can evaluate prospects according to different criteria. They target agile organisations in a state of flux, rather than the ones with a clear understanding of their needs.

Again, this sales strategy is closely related to relationship selling. In solution selling the goal is not per-se to sell a service, rather to enhance the relationship and strive for a win-win situation. This requires the mind-set of a salesperson to be that of a valued partner of his/her customer instead of selling as much products as possible (Moncrief & Marshall, 2005).

This sales strategy best matches companies that operate in the supportive cluster (Paesbrugghe et al., 2015; Reck & Long, 1988). They are less interested in the price of a product or service, but they want a solution to their problem. Their purchasing function is more about making things happen than generating savings. Furthermore this strategy matches the needs of companies in the integrative cluster (defined by Reck & Long, 1988)(Paesbrugghe et al., 2017). These companies are looking for long term solutions. This shows that companies with a medium to high professionalism can best be served through solution selling. Thus, it is likely that solution selling can best be applied to organisations with a similar medium to high purchasing maturity.

3.3.5 Cross selling

Kamakura (2007) (as summarized by Johnson & Friend, 2015) indicates that the proliferation of cross-selling is based on several specific benefits. These include: (1) the cost of serving an existing customer is five times less than acquiring a new one (Rothfeder 2003), (2) the response rates for cross-selling are two to five times greater than cold sales (Andrews 1999), (3) the increased share of wallet and share of mind, (4) the increased actual and psychological costs of switching (Kamakura et al. 2003) and (5) learning more about customer's needs and preferences. Cross-selling and up-selling both offer the potential to increase the seller's share of the customer's wallet. This has been shown to add as much as 10 times more value to the company compared to focusing on retention alone (Coyles and Gokey 2002).

However, a key bottleneck in strategies like cross-selling and up-selling lies with the salesperson. Schmitz (2013, 68) states that 'firms must ensure that the sales force is motivated to engage in cross-selling, because in that case, salespeople adopt a broader range of the company's product portfolio.' Research supports the value of a customer orientation as a form of motivation and encourages this intrinsic incentive amongst the sales force. Customer orientation refers to 'the degree to which salespeople practice the marketing concept by trying to help their customers make purchase decisions that will satisfy customer needs' (Saxe and Weitz, 1982).

In their research, Johlke, Stamper, and Shoemaker (2002) (as summarized by Zboja & Hartline, 2010) found that the quality of task-related training is a key elements to perceived organisational support of boundary-spanning employees. Zboja & Hartline (2010) thus argued that cross-selling training enhances cross-selling performance. They state that service firms should continuously evaluate and enhance their cross-selling training programs. This would increase skill levels to implement the cross-selling initiatives. Similar conclusions were drawn for cross-selling incentives. Zboja & Hartline (2010) define cross-selling incentives as 'financial rewards tied directly to the successful implementation of the firm's cross-selling initiative'. They argue that incentives tied to cross-selling initiatives can motivate employees, leading to enhanced cross-selling performance.

Finally Zboja & Hartline (2010) argue that employee motivation and cross-selling self-efficacy are of vital importance in a cross-selling context. As cross-selling activities are often considered to be an additional expectation of a service employees' role, these employees

need motivation to engage in cross-selling activities. Without embracing the idea of cross-selling and lacking motivation to cross-sell, high performance in cross-selling cannot be achieved. The concept of self-efficacy was introduced by Bandura (1977) (reported by Zboja & Hartline, 2010) as a key element of the social learning theory. Self-efficacy was conceptualised as the extent to which an individual believes himself or herself capable of successfully performing a specific behaviour. This has been argued to be a predictor for both employee motivation and task performance (Wood & Bandura, 1989). Therefore, Zboja & Hartline (2010) argue that a firm should tend to increase the level of self-efficacy when new cross-selling initiatives are launched. Moreover, the level of self-efficacy and motivation of employees differ. Thus, per employee segment within the sales force, management should decide what training and incentives can best be applied.

From this chapter it can be concluded that the sales process and complementary sales strategies are not straight forward. Various situations exist that required different sales approaches. Through categorizing these situations, matching strategies and processes can be developed for these situations. This thesis will build forward on the match between the four main sales strategies and the maturity clusters of Reck & Long (1988) identified by Paesbrugge et al. (2015). Chapter 3.1.3 has shown that the clusters developed by Reck & Long, (1988) relate to the six maturity phases described by van Weele (2009). This relation has been highlighted for each of the four key sales strategies in this chapter.

3.4 Research Model

The theoretical dimensions developed in previous research have created the first step towards a sales process that can easily be aligned to a customer's processes and needs. However, it is focused on distinct aspects and does not yet provide a practical solution. This research will combine and complete these previous findings. Only by doing so, the answers to the research question can be found and the problem at hand can be solved. A research model has been developed based on the findings in existing literature. This model acts as a guideline to structure the empirical part of this study.

In his article Simkin (2008) has already argued for segmentation based on customers buying behaviour. He showed that at least the buying process, DMU and the Need should be taken in to account. This study has identified two additional aspects through literature review; technology and purchasing maturity. These five aspects and their relation to the customers buying behaviour hold the information to answer the research questions.

The first aspect that has been found to relate to the buying behaviour is the 'purchasing process'. This process shows the steps customers go through during their buying decisions. The second aspect is the 'DMU'. Multiple actors are involved in the decision-making processes. They all influence the buying behaviour in a certain way. Thus, the DMU should be analysed to gain a better understanding of the buying behaviour. The third aspect is 'maturity'. Existing literature has shown that there are several maturity stages an organisation can operate in. Literature suggests that these stages include multiple aspects that relate to the buying behaviour.

The fourth aspect is the used technology. As argued in the theoretical background, the technology used to facilitate the purchasing process will influence the buying behaviour. The fifth and last aspect is the so called 'need fulfilment'. This aspect relates the customers' needs for professional purchasing and financial services. It is defined by the extent to which a

customer has a certain need, to what extent it has already been fulfilled, how it can be matched by the offered solution, what alternatives are available and how satisfying these alternatives are. This aspect captures the need identification process as described in chapter 3.2.2 "Need identification" as well.

The literature review has shown that relations among the five aspects exist as well. If that is true, then, if one of the aspects' values are known, other aspects might be forecasted. This would significantly improve the effectiveness of buying behaviour segmentation. Thus, the relations among the identified aspects should be researched as well. These relations will be included in the qualitative empirical research to utilize their benefits.

Based on these aspects the buying behaviour of customers can be surveyed, which in turn will help to develop a sales strategy for NIC group. Below in Figure 9 a graphical representation of the research model is provided.

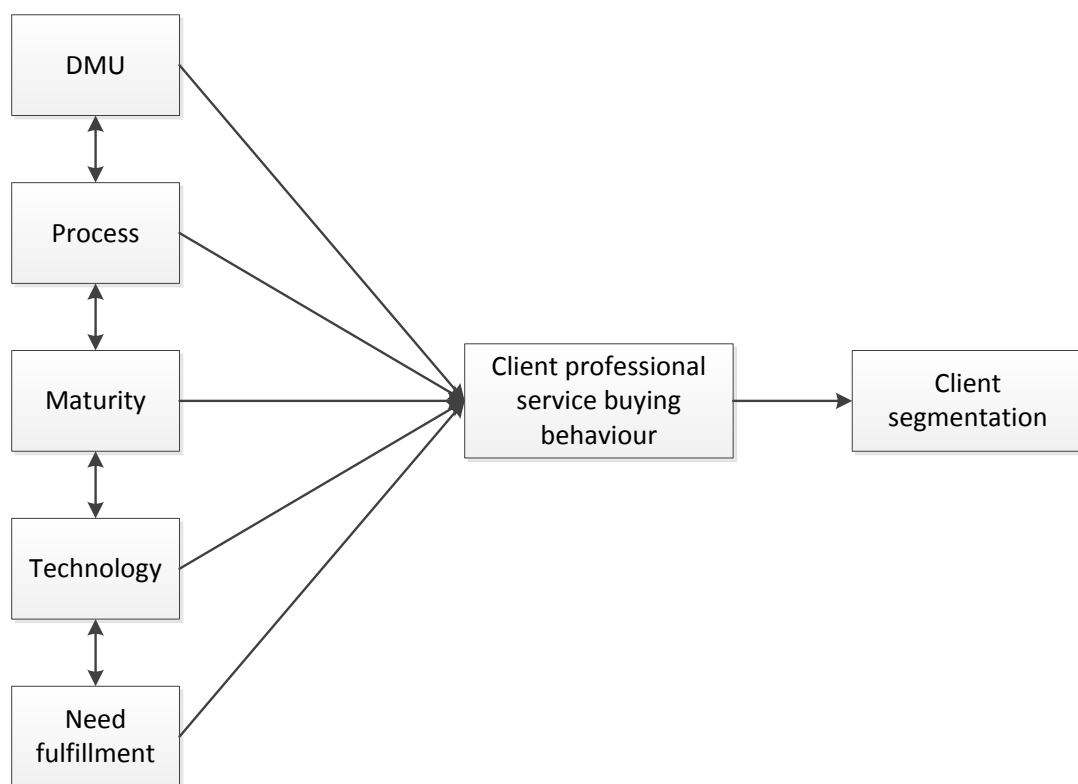


Figure 9: Research model.

3.5 Conclusions from literature

The review of existing literature resulted in the development of a research model. The importance of the buying behaviour aspects described in this model is reflected in previous literature. It seems that sales efficiency increases when the sales process is matched to the customers buying behaviour (Paesbrugghe et al., 2017; Rackham & DeVincentis, 1998; Simkin, 2008; Viio & Grönroos, 2013). Yet, it is not necessary to develop a separate sales process for each individual customer. Apparently, customer segmentation provides an effective solution (Dibb & Simkin, 2008; Hidalgo, 2015; Simkin, 2008).

The identified buying behaviour aspects presented in the research model are loosely based on the four organisational variables identified by Webster et al. (1972). The first variable, people in the organisation is found to relate to the DMU. The DMU is formed by different actors that seem to have different objectives. Crow & Lindquist (1985) show that a higher educational background of the buyer, results in a smaller DMU.

The second organisational variable by Webster et al. (1972), the buying tasks at hand is represented by three buying tasks (i.e. new task, modified rebuy and straight rebuy). These three tasks are found to influence the purchasing process used by organisations. The formality of these processes depends on the customer's purchasing organisation structure. This structure is represented by the maturity of the purchasing organisation. For this research the purchasing model of Van Weele & Rozemeijer, (1998) will be considered. As the maturity is found to relate to lateral involvement and connectedness it seems to relate to the DMU (Johnston & Bonoma, 1981) as well. This purchasing maturity represents the third organisational variable by Webster et al. (1972): the organisation structure.

Paesbrugghe et al., (2015) indicated that the level of purchasing maturity relates to four key sales strategies. Seemingly, customers operating in a low maturity are best served through relationship selling. When operating in a slightly higher maturity stage, they should be served through value selling. A more mature organisation would be better served through solution selling. Organisations operating in the highest maturity stage are best served through key account selling. What is more, cross- and up-selling seem to significantly enhance the sales performance of an organisation (Johnson & Friend, 2015; Coyles and Gokey, 2002). However, sales representatives require extensive cross-selling training and need incentives to boost cross-selling motivation (Zboja & Hartline, 2010).

To enter a higher maturity stage, new technologies are often required. This shows that there might be a need for new technologies when the purchasing process is optimized. Still, Rodríguez-Escobar & González-Benito (2015) show that processes should be optimized before implementing an IT solution. Moreover, technologies seem to affect the way customers deal with sales representatives. Having access to information through technology reduces the customers' need to talk to sales representatives (Grewal et al., 2015). This technology aspects represents the final organisational variable by Webster et al. (1972): the used technology.

To identify additional customer needs, Woodruff (1997) suggests that it is important to find out what customers value. Finally, to adapt a solution, a customer has to go through the awareness and desire stages first (Arts et al., 2011). To go through these stages, it is important that barriers for adoption are levered (Gourville, 2006). As these barriers are focussed on perceived satisfaction, the sales strategy should convince potential customers that the new solution yields a much higher satisfaction.

4 Methodology

4.1 Research setting

Based on the literature review it may be asserted that several attempts have been made to develop a sales process that can be adapted to the customer (Paesbrugge et al., 2017; Simkin, 2008). It is suggested that adapting the process to the customers' buying process would generate the highest efficiency (Rackham & DeVincentis, 1998; Simkin, 2008; Viio & Grönroos, 2013). Therefore, in this study the relation among five theoretical aspects and their relation to the buying process were researched. Based on these findings, this research attempted to segment customers and develop an adaptive sales strategy for NIC group.

Serving the research objectives, the first part of the empirical research consisted of qualitative interviews. To reflect the appliance of the five aspects and their relation to the customer's buying behaviour, 21 potential customers were interviewed. As the objective of this study, like that of Åge (2011) was to identify complex B2B processes and their aspects, a similar approach was chosen for the analysis. With a view to develop a segmentation based on the main buying behaviour aspects, this study adopted the 'grounded theory' approach for analysing the interviews (Glaser and Strauss, 1967; Glaser, 1978, 1998, 2001, 2007). As summarized by Åge (2011), the grounded theory helps to identify variables and concepts that absorb the phenomenon's core, without disfiguring the nature of the data. Additionally, it helps to find relations among such concepts, which correspond to the objectives of this study. This approach benefitted this study because of the following:

- grounded theory is based on concepts and categories that are empirically derived;
- concepts that reflect the experiences and interpretations of the involved actors are produced; and
- the methodology places isolated empirical data in a broader context, thus facilitating the conceptualisation of multi-dimensional phenomena (the complex buying process).

To substantiate the results of the qualitative study, the empirical research was extended with a quantitative section. The qualitative data gathered through a survey helped to develop a customer segmentation. To do so, the relations among the aspects in the research model were tested with this data. To gather the data a web survey was chosen. This survey was of a descriptive nature as the tendency was to capture the customers' behaviour (Moser & Kalton, 2016). A web survey was chosen as the following advantages would benefit this research (Callegaro, M., Lozar Manfreda, K., & Vehovar, V., 2015; Neuman, 2004; Lokken et al., 2014):

- costs for distributing the survey and gathering data are minimal;
- large numbers of respondents can easily be reached at anytime and anywhere;
- response time for respondents is decreased, resulting in a higher response likelihood.
- responses can be stored quickly and more accurately, improving overall processing speed; and
- participants do not have to reveal their identity while participating, which ensures anonymity of respondents. This results in more reliable data.

4.2 Research Scope

The objectives of this study relate to the provision of a complete consultancy solution on the interface between purchasing and finance. This interface seems to be represented by the so-called Source-to-Pay process.

Although the Source-to-Pay process has not yet been described by many scholars, the process is widely recognized and accepted in practice. Islam (2017) describes the Source-to-Pay process that has been implemented at 'Nestlé' by the following sub-processes:

- strategic sourcing (processes related to tactical and strategic purchasing);
- contract management;
- purchase requisition (information flow to inform responsible employees of the need to purchase a certain good or product);
- purchase ordering (processes related to operational purchasing);
- good receipt (the receipt and approval of the delivery of a purchased good or service);
- invoice processing; and
- supplier management.

These categories match the in practice accepted process described by Chiefprocurement (2016) and Xchanging (2016). They extended the above described sub processes with the Spend Analysis process.

For this research, the above described process was matched with the related consultancy services that are provided by NIC group. The matched services are the following:

- Spend analyses: Het NIC conducts spend analyses to identify possible savings and optimizations for customers;
- Purchase-to-pay optimisation: this service is provided by NIC group to optimize the process of matching invoices with purchasing orders, order acceptances and invoice acceptances;
- Finance view: based on payment analyses NIC group provides a recommendation report for the financial department of their customer. This report describes recommendations related to preventing future payment errors;
- Best Deal/ Contract management: Best Deal is a collective purchasing platform. Through this platform the supplier base is reduced for customers and supplier are managed by Best Deal. Additionally, NIC group provides consultation on contract management and negotiation as well;
- Purchasing professionalisation: NIC group provides consultation to help customers professionalise their entire purchasing organisation.

Based on this information a completed Source-to-Pay process cycle was developed to guide the empirical research. Throughout the empirical research the correctness and completeness of this process is tested. By doing so a new process cycle for the in practice well known Source-to-Pay process is empirically tested and described in a scholarly research now. Testing this process is a secondary objective in this research. The new Source-to-Pay process cycle is depicted below in Figure 10. A detailed description of the process steps can be found in Appendix D.



Figure 10: Completed Source-to-Pay Cycle (based on Chiefprocurement, 2016; Islam, 2017; Xchanging, 2016).

This Source-to-Pay process was chosen to determine the main scope of this research. By doing so it was ensured that the research focussed on the interface between purchasing and finance. Additionally, the assumption that NIC group has the required knowledge provide the complete solution was satisfied.

This Source-to-Pay process scoped the research on the effects of the five buying behaviour aspects identified in the research model (i.e. process, DMU, maturity, technology and need fulfilment). Finally, the scope was narrowed through branch selection. NIC group's management expected five branches to best represent the complete set of their branches. To reduce the number of interviews while maintaining as much generalisability as possible, these five branches were included in the interviews:

- city council;
- water regulatory;
- housing corporation;
- education; and
- private.

The possibility to generalize the findings was tested by analysing differences between the five branches. Moreover, during the survey there was no pre-selection based on branches. Therefore, the generalizability of the findings was tested through the survey data as well.

4.3 Interview Design & Analysis

During the interview, the five aspects included in the research model were discussed in a semi-structured way. As discussed in chapter 3.2.2, Griffin & Hauser (1993) and Kumar et al. (2011) advise 20-22 one-on-one interviews to capture 90% of all customer needs. Thus, for this research 21 one-on-one interviewees with (potential) customers were conducted.

The interview protocol can be found in Appendix F. The protocol is semi-structured and questions were worded to elicit participants responses in a nondirective manner. First, some general information about the interviewee's company was asked for. The second section consisted of processes related questions. During this section, the customers' organisation of the Source-to-Pay processes was questioned. This provided insight in their purchasing processes. Additionally, it provided information to validate the applicability of the Source-to-Pay process. For the third section, the actors involved in the decision-making during the Source-to-Pay processes were identified. This helped to identify the DMU at that organisation. The fourth part of the interview asked what technologies are used to facilitate the entire process. The fifth part of the interview consisted of questions related to the need for consultancy services on the Source-to-Pay process. These questions were based on findings in the Need Identification section in chapter 3.2.2. Elicitation techniques were applied as they proved to be best applicable to identify customer needs (Kleef et al., 2005).

Finally, the interview questions the organisations maturity. To stay in line with the chosen Source-to-Pay scope, a new Source-to-Pay maturity model was developed. This model was based on the purchasing maturity model discussed in chapter 3.1.3 (Bemelmans et al., 2013; van Weele, 2009; van Weele & Rozemeijer, 1998). This model was extended by the 'purchase-to-pay' maturity model developed by NIC group. Finally, the involvement of the C-level management in the purchasing process was included. This new model to test the Source-to-Pay maturity resulted in six questions. These six questions can be found in Appendix E.

4.3.1 Analytical procedures

The interviews were analysed in accordance with the recommendations of Glaser (1978). Therefore, the following analyses procedure was followed: (1) data coding, (2) memo-writing, (3) sorting, and (4) theory writing. However, a simplified version of the method was applied as interviews were not word-by-word transcribed. The interview protocol in Appendix F was used to summarize interviews in a structured manner. During this process open coding, axial coding and selective coding were applied according to the grounded theory (Strauss & Corbin, 1998). For this process, the qualitative data analysis tool QDA miner was used.

First, concepts, their properties and the dimensions in the data were identified through open coding. Second, through axial coding distinct categories and sub categories of these concepts were developed. During this phase, relational statements were derived and fitted into a basic frame of generic relationships. During the selective coding phase, categories and relations were integrated in a generic concept. These coding steps resulted in the writing of memos and the development of theory and applicable results.

Validation of the interview was done through interviewing three senior level managers within NIC group. Based on their answers and the NIC group's known processes, DMU, maturity and needs, the interview was validated. These validation sessions acted as an iterative process to improve the interview protocol. Additionally, these sessions were used to test and improve the Source-to-Pay maturity model.

4.3.2 Interview sample profile

Based on the above specified branch selection, a sample of 35 contacts from NIC group were contacted to participate in the interviews. This sample created a set that represented reality as best as possible in terms of perceived process organisation, DMU and organisational variables. The choice to base the sample on these aspects was to implicate as much generalisability as possible.

Based on the literature review it was argued that the Financial- and Purchasing managers' understanding of the companies' Source-to-Pay process is extensive. Therefore, these functions were targeted as interviewees. The Financial manager was preferred, reasoning that he or she was expected to have more general process knowledge. This claim is supported by literature. It suggests that the CFO/ financial manager is becoming more and more involved in the purchasing processes (Alvarenga, 2014; Couto & Neilson, 2004; Crane, 2007).

In Table 1 below, a complete overview of the interview characteristics can be found.

Table 1: Interview Sample Characteristics.

Characteristic	N-cases	Frequency	Characteristic	N-cases	Frequency
Total sample size	21	100%	Function Interviewee		
			Manager/ Head Finance	3	14%
Branch			Team leader Finance and Purchasing	1	4,5%
Education	5	24%	Manager Purchasing	5	24%
Water regulatory	3	14%	Financial Controller	2	9,5%
Housing Corporation	3	14%	Team leader accounting	1	4,5%
City Council	4	19%	Head/ manager financial administration	6	29%
Private	6	29%	Purchasing/financial consultant	2	9,5%
Company Size (Turnover)			Manager Logistics	1	4,5%
0-10 M.	2	9,5%	Demographic area		
11-50 M.	2	9,5%	Noord-Brabant	10	48%
51-100 M.	6	29%	Groningen	1	4,5%
101-150 M.	2	9,5%	Zuid-Holland/ Zeeland	5	24%
151-200 M.	2	9,5%	Flevoland	2	9,5%
201-500 M.	2	9,5%	Limburg	3	14%
501-1000 M.	3	14%	State of Source-to-Pay professionalisation		
> 1000 M.	2	9,5%	Advanced	2	9,5%
Company Size (FTE)			Medium	15	71,5%
0-50	1	5%	Low	4	19%
50-100	3	14%			
150-250	2	9,5%			
250-500	2	9,5%			
501-750	4	19%			
751-1000	1	5%			
1001-1500	2	9,5%			
1501-2000	2	9,5%			
> 2000	4	19%			

4.4 Survey Design & Analysis

The survey was used to test and extend the interview findings. Thus, the survey related to the five buying behaviour aspects as well. Due to the quantitative nature of the data it could be used to identify customer segments statistically. Additionally, the results helped to generalize the interview findings.

This survey followed descriptive research principles. Descriptive research requires the survey respondents to be unaware of the studies exact purpose (Knupfer & McLellan, 1996); this was considered in the current survey design. The survey comprises 49 questions, divided into four sections. To identify customer segments thoroughly, the survey structure was based on the six-evolutionary-stage framework introduced by Simkin (2008). This framework aids in segmenting customers on the basis of their buying behaviour; Appendix G contains a complete description of this framework.

The survey was structured such that the responses could be used to fill out the buying proforma developed by Simkin (2008). This buying proforma is a scheme depicting customers' profiles, buying centres (DMU) and needs, as well as buying processes and the factors influencing them. An example of this proforma can be found in Figure 13, Appendix G. This proforma comprehensively covers the buying behaviour aspects studied here. Thus, it was an excellent tool facilitating customer segmentation while substantiating the interview results.

In the first section of the current survey, the customer's profile was sketched. In the second section, the steps of the Source-to-Pay process and the involved DMU were elucidated. The key actors identified during the interviews were provided as standard options. Thus, additional data on the DMU was gathered for segmentation. In the third section, the respondents' Source-to-Pay maturity was measured. A new maturity model was developed on the basis of the feedback on the maturity model used in the interviews and the identified best and worst practices. The model consists of 13 questions, with each question focusing on one clear aspect. Four alternative descriptive situations are provided per question. These improvements enabled a discreet choice. The new Source-to-Pay maturity model can be found in Appendix H. However, the given stages are not final. They are based on cross-sectional interview and literature findings. Through new developments, the current stages might not represent reality in the future. This means that it is important to update the model in time to maintain validity.

In the final section, the respondent's satisfaction on the Source-to-Pay sub processes was measured. A deviation between quality and throughput satisfaction was made. For these questions, a five-point Likert scale was used. Literature suggests that a five-point scale appears to be less confusing and increases the response rate (Babakus and Mangold, 1992; Devlin et al., 1993; Hayes, 1992). It is found to increase validity while equalling reliability compared to a seven-point scale (Krosnick & Presser, 2010). The measured satisfaction helped to identify the need for consultancy services on the Source-to-Pay process.

To increase the reliability of the survey, readable and single concept questions were asked. In cases where questions could be miss interpreted, a detailed explanation was provided. Finally, the survey was pilot tested by four senior managers of NIC group for validation. Based on their iterative feedback the survey was modified several times.

4.4.1 Statistical analysis

Descriptive statistics, including frequencies and percentage frequencies, were used to analyse the data. Differences between sets of variables were analysed using inferential statistical methods such as t-tests. Additionally, correlations between all numerical variables were calculated. For this purpose, dummy variables were created for categorical questions. In cases where interesting correlations were found, logistic regressions had been used to find predictive values. This was mainly done for the execution of processes and the involvement of different actors. Finally, hierarchical clustering based on squared Euclidian distances and between group clustering was used to identify customer segments. To identify meaningful segments, matches between clusters were tested. These clusters were formed on the basis of organisational variables, process organisation and actor involvement.

4.4.2 Survey sample profile

To maintain validity in this cross-sectional study, a diverse sample was generated by sending out the survey without preselecting companies. As with the interviews, the survey focused on financial and purchasing managers. They were expected to have sufficient knowledge of the Source-to-Pay processes within their organisations. Contact information was gathered through NIC group. This resulted in a mailing list of approximately 1700 contacts. Unfortunately, approximately 700 automatic rejections were received.

In total 91 survey responses were collected. Cases were excluded from the analyses when the variables that were being analysed contained missing values. Per variable, on average only 5% of the cases contained missing variables. Variables containing general information on company size (Turnover, Company Spend, Incoming Invoice and Full Time Employees (hereafter referred to as FTE)) were log₁₀ transformed to normalize the data. The respondents were categorized in eight branches as defined by NIC group: City council (13 cases, 14.4%), Financial sector (4 cases, 4.4%), Education (5 cases, 5.6%), Private (43 cases, 47.8%), Production (7 cases, 7.8%), Central government (8 cases, 8.9%), Water regulatory (4 cases, 4.4%) and Housing corporation (6 cases, 6.7%). This data shows that 54 cases were private corporations and 36 cases were governmental subsidised corporations. Moreover, 33 cases were companies providing goods and 57 cases were companies providing services.

In terms of organisational variables, the responding companies had an average size of €570 Million (M.) turnover. A maximum of 2 Billion and a minimum of €0,4 M were found. In terms of corporate spend, the average was €273 M. The maximum spend was €1 Billion and the minimum was €0,- spend. For N incoming invoices the respondents reported an average of 65.000. The maximum was 1.500.000 and the minimum was 100 invoices. The average number of FTE in the responding companies was 1265, with a maximum of 34.000 and a minimum of 4. Additionally, the responding companies had an average Source-to-Pay maturity of 2,2. The highest reported maturity was 3,8 and the lowest was 1,5.

To aim for more generalisability, the results were discussed with two objective scholars that were not directly tied to this research. These discussions diminished the bias of the researcher only focusing on data that is confirmatory to his beliefs (Miles, Huberman, & Saldaña, 2013).

5 Results

5.1 Interview Results

The grounded theory approach resulted in three general concepts. These concepts however consist of multiple underlying relations and findings, derived from statements. They are explained in the three subsequent chapters below. Finally, the statistical results from the quantitative data gathered in the interviews are provided.

5.1.1 Process organisation

The interviews clearly showed that the proposed Source-to-Pay model was well understood. Respondents recognised the process steps and had often already implemented them. Only two respondents stated that they do not follow the general lines of the proposed process. In these cases, there were no formal procedures for purchasing and invoice processing at all. Furthermore, only one interviewee mentioned that the purchasing and finance departments discussed these processes. Invoices, spend data and budgets were discussed much more often. What is more, only two respondents mentioned the discussion of payment terms and suppliers. These two aspects relate to financial and supply risks. This is argued to be the a main topic of interest in the purchasing–finance relationship (Alvarenga, 2014; Minter, 2009). Thus, it seems that the interviewed organisations only focus on superficial discussions, such as invoices and spending, and ignore the main topics that benefit the purchasing–finance interface, such as processes and risks.

Still, none of the interviewed organisations were completely satisfied with their Source-to-Pay process. Some 38% of the interviewees reported that the Source-to-Pay process is still organised informally. In contrast, only 28% reported a formal process. Reasons for not optimising this process are broad. Not having someone responsible for the entire process seems to be a major issue. One respondent stated, *'There should be one process owner for the entire process who is responsible for a correct execution and continuous efficiency improvements.'* Two other respondents somewhat agreed, stating that a single department should be responsible for the entire process. Other reasons included costs (four respondents) and lack of knowledge (one respondent). These findings show that the process could be improved through knowledge transfer and a reorganisation of process ownership.

In three cases, the Source-to-Pay process formality differed per department. Process guidelines were developed but not always followed as departmental heads' priorities differed. Lack of control mechanisms or consequences for neglecting the rules were mentioned as a cause. Moreover, 60% of the respondents mentioned that they distinguish between large and small purchases in the execution of the strategic sourcing process. In these cases, formality differs per project. For large projects, purchasing is always included in the formal execution of the process; for smaller purchases, approval of a budget holder is sufficient for a decentral purchase. The issue with separating the processes is that employees diverge from the guidelines and partake in maverick buying.

Comparable results were derived from the project and retail organisations. Their processes were very formal for customer projects and retail products, but no formal processes were organised for other purchases.

The invoice processing procedure was found to be the most formalised process. However, the intention to improve it was frequently mentioned (10 respondents). Nevertheless, the maturity levels related to the invoice processing procedure (Q 6.1 in appendix H) were 3.8 on average, which was the highest average score of all maturity questions. Furthermore Table 2 shows that the invoice processing procedure scored the highest of all satisfaction scores.

Table 2: Average satisfaction levels for the sub processes of the Source-to-Pay process per respondent.

Respondent ID no.	Satisfaction levels per Source-to-Pay sub-process*					
	Sat. S.S.	Sat. C.M.	Sat. P.R.	Sat. O.P.	Sat. I.P.	Sat. S.A.
1	2,8	1	3,3	3,3	2,8	2,8
2	2	1,3	2,5	2,3	2,5	3
3	2,5	1	2	2,8	3,3	1
4	2,3	1,3	1,8	2	2,5	2,8
5	-	-	-	-	-	-
6	3,3	1,7	3	2,3	2,3	3,7
7	-	-	-	-	-	-
8	-	-	3	3,3	3,7	-
9	2,3	3	4	4	4	5
10	-	-	-	-	-	-
11	3,3	2	3,7	4	3,7	3
12	3,7	4	2,3	2,3	1,7	1
13	3	3,5	2,3	3,5	2,3	2,5
14	4	3,3	3,7	4	5	4,3
15	4,3	2,7	4,3	3,7	4	4,3
16	-	-	-	-	-	-
17	3,7	2,7	4	4,3	4,3	4,7
18	3,2	3,7	2,3	4	4	4,3
19	4	3,7	4,3	3	3	3
20	4,3	2,3	5	5	5	5
21	4,3	2,7	3,3	2,7	3,7	3,7
Average	3,3125	2,49375	3,223529	3,323529	3,4	3,38125

Used abbreviations: Sat. = Satisfaction, S.S. = Strategic Sourcing, P.R. = Purchase Request, O.P. = Operational Purchasing, I.P. = Invoice Processing, S.A. = Spend analysis.

Contract management was mentioned as a priority for improvement by 38% of the respondents as well. Reasons for not implementing contract management include a lack of IT tools, time constraints and bureaucratic issues. One respondent stated, '*Contractual mistakes are made because there is not enough time to go through the entire process or because knowledge and guidance is missing.*' The intentions to improve contract management were supported by the fact that contract management had the lowest satisfaction (Table 2).

Finally, seven interviewees reported that they want to improve the operational purchasing process. To improve this process, four interviewees intend to use a purchasing catalogue. Such a catalogue is used to guide decentral buyers to purchase goods and services that are already contracted. As purchasing orders must be registered to match invoices, these intentions relate to the improvement of invoice processing.

The following can be concluded from these findings:

- the developed Source-to-Pay process cycle was validated.

- the collaboration between purchasing and finance is still minimal. The main subjects for discussion between the departments were invoices and spend.
- developed processes and guidelines were often not followed formally by the organisation. This led to inefficiency in the Source-to-Pay process.
- formality of the process execution differed per purchasing project based on monetary size of the project in 60% of the organisations.
- invoice processing and contract management were found to require improvement.

5.1.2 IT-system implementation and optimization

Several organisations felt that the benefits of optimizing the Source-to-Pay procedures do not outweigh the costs. Especially small organisations mentioned this issue. They felt required IT tools were too expensive. Moreover, most organisations did not yet use IT tooling to support contract management and the strategic sourcing process. Additionally, excel sheets instead of specialized programs for spend analyses were still used in most organisations. The other Source-to-Pay processes were mostly facilitated by Enterprise Resource Planning (ERP) systems.

A Source-to-Pay related IT-system, was initiated and implemented by finance in most cases. Thus, this department acted as is the initiator (explicitly mentioned by nine respondents). Their reason is that the first step often is to automate the invoice processing process. This process has the most obvious savings potential. One interviewee recalled, *'First, the invoice process was automated as physical invoices with costs less than 1€ were shifted back and forth. This costed a lot of time without benefiting the organisation'*. However, the financial department is found to be excluded from the foregoing processes in most organisations (i.e. strategic sourcing, contract management, purchase requesting and operational purchasing). Thus, it seems suboptimal that finance implements the Source-to-Pay IT-system.

The positive effect of an IT-system on the process optimisation was found to be moderated by the willingness of the suppliers to participate. Without a supplier that is capable and willing to cooperate, procedures cannot be automated. Self-billing, e-invoicing, auto order processing, digital tendering etc. all require involvement of the supplier. One respondent stated, *'Our ERP system facilitates all automation described in the maturity model, however our suppliers do not yet have the tools to implement these automations yet. If our suppliers' systems would be more advanced, we would score a 6 on 5 out of the 6 maturity questions.'* This concludes that without the support of your suppliers, the highest maturity cannot be reached.

The IT-system related findings are summarized by the following three statements:

- small organisations felt that optimizing their Source-to-Pay process is too costly.
- IT tools for strategic sourcing, contract management and spend analyses were often not implemented.
- Source-to-Pay software implementation was often initiated and executed by the financial department.
- Support from and collaboration with suppliers is required to automate the Source-to-Pay process.

5.1.3 External consultation

Only four interviewees stated that they used an external consultancy firm to improve parts of the Source-to-Pay process. Two of them used NIC group for improving the purchasing process, others referred to NIC group as a provider of operational services and payment analyses. Only one interviewee has re-organized the entire Source-to-Pay process with the help of a consultant. In contrast, 15 interviewees (71%) reported that they used their Source-to-Pay software supplier for consultation on the process. Striking is that they were not always satisfied with these consults. Capacity and branch specific knowledge constraints were mentioned as reasons for dissatisfaction. Thus, it seems customers expect software suppliers to provide them with the needed consultancy services. However, they seem incapable to meet the expectation.

To validate these results and generate more insights, two interviews were conducted with Source-to-Pay software providers (E-size and K3 retail solutions). The interviews can be found in Appendix I. The results from these interviews showed that software suppliers offer additional consultancy services based on hourly rates. However, this consultation was mainly focused on customizing the system to match the organisations processes. They provided additional consultation on how to improve processes for more efficiency, but they clearly stated that this is not their core expertise. Their focus is on quickly implementing their product. This shows that software suppliers see their consultation as a manner to match their product to the customer's organisation

It can be concluded that most organisations could benefit from third party consultancy. However, the interviewed organisations do not yet consider NIC group for such services.

5.1.4 Statistical relations

During the interviews some quantitative data on process satisfaction and maturity was gathered. From this data it can be concluded that process maturity has a strong ($S < 0.01$) and positive relation with the satisfaction of the strategic sourcing process (0.744) and contract management (0.761). There is a weak significant ($0.05 < S < 0.07$), but positive correlation between maturity and Purchasing request satisfaction (0.479), Operational purchasing satisfaction (0.482), Invoice Processing satisfaction (0.77), and Spend analysis satisfaction (0.65). This suggests that improving the process maturity increases satisfaction.

5.2 Survey Results

The findings from the survey were used to substantiate the interview findings. Together they were used to form the answers to the research questions. In this chapter the interview findings are presented. The following chapters represent the main subjects for the results. The paragraphs are structured to present the most meaningful findings first.

5.2.1 Source-to-Pay process clustering

Five hierarchical clusters were identified based on organisational variables (size measurements) with a distance dissimilarity measure < 5.0 . Unfortunately, no direct relationships were found between these clusters and satisfaction or involvements. Moreover, no meaningful clusters with a distance dissimilarity measure < 10.0 could have been identified for maturity, satisfaction and DMU aspects. Additionally, there were no statistically significant relationships between the branches used by NIC group and any other researched aspects. Thus, no process categorising based on organisational variables or branches seems possible.

However, a positive correlation between the clusters and average maturity was found (0.378, $S = 0.002$). The five identified clusters, their aspects and average maturity can be found in Appendix J. This relationship was supported by the positive correlations between average maturity and all organisational variables of a company: turnover (0.334, $S = 0.006$), spend (0.344, $S = 0.004$), invoice (0.293, $S = 0.015$) and number of FTE (0.298, $S = 0.012$). Additionally, this average maturity had a positive and significant correlation with all satisfaction measurements except for satisfaction on invoice processing (both quality and throughput satisfaction). From this it can be concluded that as the clusters seem to relate to process maturity, they indirectly convey satisfaction.

Other positive relationships were found between all organisational variables (and clusters) and the level of implementation of Source-to-Pay improvements indicated by the respondents (53% is implementing Source-to-Pay professionalisation, 7% will start the professionalisation shortly, 22% intends professionalisation in the long run, 11.5% does not intend to improve the process and 6.5% replied 'unknown'). Thus, the larger the company, the higher the chance that they are already working on improving the Source-to-Pay process.

A complete overview of the maturity questions and satisfaction measurements is provided in Table 3 below. The specified abbreviations in Table 3 will be used throughout the rest of the report.

Table 3: maturity and satisfaction measurements from survey

Maturity aspect *	Average score	Satisfaction aspect **	Average score
1. Invoice Processing	2,7	Specification (Q)	3,1
2. Invoice Approval Flow	2,7	Specification (T)	2,9
3. Purchasing Position	2,3	Supplier Selection (Q)	3,2
4. Purchasing Strategy	2,3	Supplier Selection (T)	3,1
5. Strategic Sourcing	1,9	Contract Management (Q)	2,5
6. Purchasing Focus	2,5	Contract Management (T)	2,6
7. Supplier Selection	1,7	Operational Purchasing (Q)	3,2
8. Purchasing Orders	2,5	Operational Purchasing (T)	3,2
9. Contract Man. Focus	2,3	Invoice Processing (Q)	3,5
10. Contract Management	2,3	Invoice Processing (T)	3,3
11. Contract Negotiation	2		
12. KPIs in Contracts	1,9		
13. Personal Training	1,7		

* Aspects (abbreviations) relate to the likely numbered maturity questions in appendix H.

** Satisfaction aspects relate to satisfaction of process questions (Q= Quality, T=Throughput time).

As Table 3 shows, the selection criteria for suppliers does not seem very important to organisations. From the surveyed organisations, 85% are in maturity level 1 or 2. Basic selection criteria such as price and lead time are still considered more important than the possibility of working together on automating the Source-to-Pay process.

5.2.2 Contract management

The interviews identified a need to improve the contract management process. Contract management focus shows 22% of respondents focus on Input, 39% focus on Throughput, 31% focus on Output and 9% focus on Outcome specifications. That contract management is subject for improvement is supported by the fact that Key Performance Indicators (KPIs) are

barely used in contract management by 76% of all respondents. Furthermore, the contract negotiation is not standardised for 82% of all respondents. This shows that the correct templates and guidelines are barely used for contracts.

In terms of satisfaction, all four contract management maturity questions (Contract man. focus, Contract management, Contract negotiation and KPIs in contracts) were found to have a positive and significant correlation with satisfaction of specification (Q and T), supplier selection (Q and T), contract management (Q and T) and operational purchasing (Q). Thus, improving contract management increases satisfaction.

On a more general note, the organisational variables correlate with the inclusion of KPIs in contracts and contract management (0.382, $S = 0.0001$ for turnover; 0.311, $S = 0.005$ for spend; 0.364, $S = 0.001$ for FTE; and 0.333, $S = 0.002$ for invoices) and with contract negotiation (0.299, $S = 0.007$ for turnover and 0.258, $S = 0.02$ for FTE). This shows that larger organisations have a higher contract management maturity and are therefore expected to have less need for consultancy services on this aspect.

5.2.3 Invoice processing

The satisfaction of the invoice processing is negatively correlated to the organisational variables. However, no relationships were found between invoice processing satisfaction and invoice maturity (e.g., invoice processing and invoice approval flow). Additionally, organisational variables do not correlate with invoice maturity. The organisational variables negatively relate to the involvement of senior management and directors in according invoices. For larger organisations, other functions take over the roles of the top management.

These findings show that larger organisations are less satisfied with invoice processing. However, their processes organisation is not less satisfying or worse organised. As larger organisations are less dependent on senior management in their invoice processing, they probably have more complex authorisation structures. This leads to issues in finding and waiting for the right person for the authorisation, which likely decreases satisfaction.

5.2.4 The purchasing process

The organisational variables positively correlate with the involvement of the purchasing department in the Source-to-Pay procedures. The larger the organisation, the more likely a purchasing department will be involved. This correlation might indicate that larger organisations more often have a central purchasing department.

Additionally, the organisational variables positively correlate with three purchasing maturity aspects: purchasing focus, purchasing position and purchasing strategy and guidelines. Having a well-worked-out purchasing strategy and communicating this to the organisation has a positive correlation with satisfaction (specification [Q and T], selection [Q and T], contract management [Q] and operational purchasing [Q and T]). The maturity of purchasing position only correlates positively with the satisfaction of quality of specifications (0.297, $S = 0.005$), quality of supplier selection (0.283, $S = 0.008$) and quality of operational purchasing (0.308, $S = 0.005$). This result shows that professionalising these two purchasing maturity aspects (maturity questions 3 & 4) is important and would increase satisfaction in the purchasing process. Unfortunately, no causality between the purchasing maturity aspects and other maturity aspects could be determined.

In line with this finding, a positive relationship was found between the organisational variables and the automation of purchase orders (0.401, $S = 0.0001$ for turnover; 0.390, $S = 0.0001$ for spending; 0.314, $S = 0.004$ for FTE; and 0.232, $S = 0.038$ for invoices). This shows that better automation is available in larger organisations.

In summary, larger organisations are found to have a better organised and more highly automated purchasing process, which leads to higher purchasing satisfaction.

5.2.5 Involvement of management and departments

Logically, if more line workers are involved in the Source-to-Pay processes, more specific departments (finance, purchasing, HRM, R&D and Facility) are involved as well. On the contrary, the more line workers are involved, the less directors and senior managers are involved. Thus, either top management or departments and line workers are involved in the processes. In addition to these reciprocal relationships, the organisational variables in general had a negative correlation with the involvement of directors and senior managers in the processes. Thus, the larger the organisations, the more line workers and departments take over the operational tasks of senior managers and director and the more specified departments are responsible for steps in the Source-to-Pay process.

5.2.6 Training

Although the average maturity for training and personal development is low, some interesting correlations were found regarding this aspect. The organisational variables correlated positively with personal training and development (0.348, $S = 0.001$ for turnover; 0.327, $S = 0.002$ for spending; 0.348, $S = 0.001$ for FTE; and 0.302, $S = 0.005$ for number of invoices). Additionally, a higher score on training correlated negatively with the involvement of directors in the according processes (-0.229 , $S = 0.032$). Furthermore, the involvement of line managers in operational processes negatively correlated with personal training and development. In contrast, the involvement of line workers had a significant and positive correlation with personal training. Finally, training had the most positive correlations with other maturity aspects out of all questioned maturity aspects.

This shows that training might be a very important aspect in professionalising the Source-to-Pay process. Through training, employees seem enabled to take over tasks from top management in the Source-to-Pay process. Thus, training seems an important aspect to consider in determining the customers' buying behaviour in general.

6 Discussion & Conclusion

Throughout this chapter the results are discussed, research questions are answered and the final conclusions are presented. The recommendations for NIC group are included in the 'Managerial Implications'. To provide NIC group with a clear and concise overview, a table summarizing the recommendations is presented at the end of that paragraph.

6.1 Theoretical Implications

The results have shown that it is not possible to develop a segmentation model for buying behaviour based on processes and actors involved in those processes. This finding is reflected in the fact that previous research has not been able to match general buying processes to sales processes. The literature that came closest to doing so only provided general frameworks that could help create such segmentation (Paesbrugghe et al., 2017; Simkin, 2008; Viio & Grönroos, 2013). Two reasons prevent such segments. First, the procedures seem very universal for all organisations. Second, the involvement of actors in the processes highly differs per organisation. Furthermore, no correlation was found between the organisational variables and the processes and their actors. This indicates that a quick prediction of the used processes and DMU is not possible based on general organisational variables. The main theoretical implications of the other findings are discussed below.

6.1.1 The Source-to-Pay process

This study pioneers in developing and describing the Source-to-Pay process in relation to buying behaviour. The results of the analysis show that this Source-to-Pay process indeed represents the main purchasing and financial administration processes. More importantly, it captures the interface between these two silos. NIC group already provides separate services to optimize these procedures. Thus, NIC groups seems capable of providing a complete solution on the interface between purchasing and finance.

This Source-to-Pay process provides a framework for analysing the buying behaviour of a potential customer. As it includes the buying process, the general DMU can be derived from the actors involved in this process. The results show that the larger the organisation, the stronger the purchasing department is represented in the process. Additionally, fewer senior managers and directors are involved in the process in that case. The reason for this is that the operational tasks in the process, executed by senior managers and directors in small organisations, are executed by line workers and departments in larger organisations. This indicates that the targeting strategy (who to target as a buyer during sales) should depend on the size of a potential customer. Therefore, it is recommended to focus on selling to directors and senior managers if the potential customer best relates to one of the lowest three organisational clusters (clusters are specified in Appendix J). In contrast, the selling party should consider line workers and departments to form the DMU when selling to organisations matching the fourth and fifth organisational clusters.

6.1.2 The decision making unit

As stated by van Weele (2009), the decision-makers in the DMU are often not the ones in contact with the sales representative. The fact that directors and senior managers are less involved in supplier selection, order approval and invoice approval in large companies shows that these functions are not the decision-makers any more. Moreover, it seems that the users (line workers) are taking over parts of the decision-making roles. For software projects related

to the Source-to-Pay process, the financial department often is the initiator. As this relates to Source-to-Pay process optimisation, it is expected that they will also act as the initiator for professional services in this area. This idea is in line with previous findings which suggest CFOs are becoming more involved in general process optimisation and risk management (Alvarenga, 2014; Crane, 2007). Therefore, the CFO should be contacted to create awareness and desire to sell consultancy services on professionalising the Source-to-Pay process.

The influencers and coordinators also seem related to organisational size according to the results. Who represents the buyer in the DMU depends on the size of the purchasing project. Thus, for small organisations the senior management should be considered to take over most roles in the DMU. For larger organisations this DMU is often represented by the purchasing department working together with line workers from other departments. However, for small projects, line workers together with one budget holder often form the DMU. This DMU structure should always be considered during the sales process.

6.1.3 The Maturity of the Source-to-Pay Process

The maturity aspect in the research model has been extended from purchasing maturity to Source-to-Pay maturity in this study. For this purpose, a new maturity model had to be developed; as such a maturity model did not exist in literature or practice yet. However, as the development of this model is not one of the objectives of this study, it is up to future research to finalise this model. Still, the results have provided some valuable insights.

The developed Source-to-Pay maturity model is largely based on purchasing models that were derived from Reck and Longs' (1988) model. This indicates that the organisational variable clusters relate the maturity stages of Reck and Long (1988) (i.e., the Passive stage, the Independent stage, the Supportive stage, and the Integrative stage). Paesbrugghe et al. (2017) have matched these stages to sales strategies. Combining these findings lets us match the identified clusters to a best applicable sales strategy. This means that the best applicable sales strategy can be predicted based on organisational variables. Figure 11 presents the relation between the organisational clusters and sales strategies graphically. However, additional research is required to test if the Source-to-Pay maturity model indeed represents the maturity stages of Reck and Long (1988) as shown below. Moreover, the used Source-to-Pay maturity cut-off values and their relation to the stages should be verified.

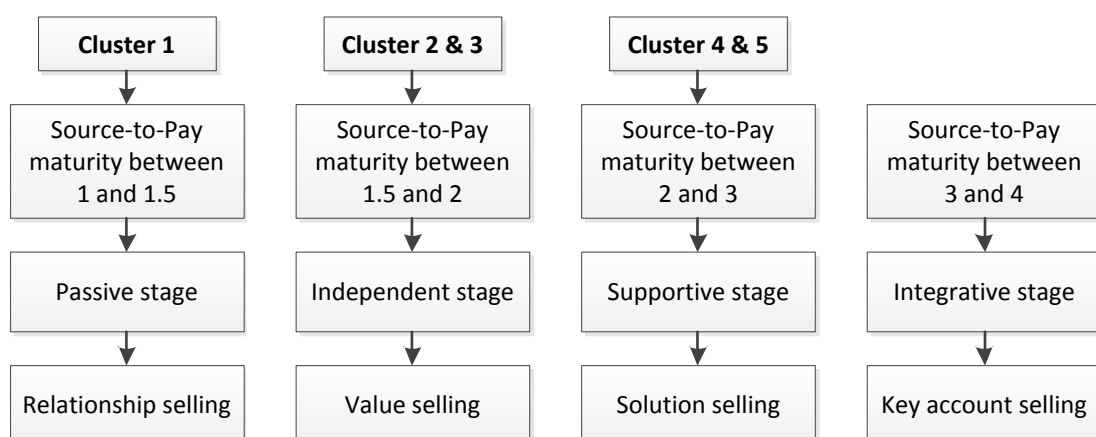


Figure 11: Graphical representation of the link between the identified clusters and sales strategies.

As stated by Paesbrugghe et al. (2017), these sales strategies are not a clear given. As organisations differ in general behaviour, attitude, norms and values, the proposed sales

strategies might still be inappropriate. However, these findings provide the best possible starting approach for a sales technique. Thus, the selling company should start with a sales strategy based on the customer's match with a cluster and alter the strategy as more information becomes available.

6.1.4 Satisfaction and customer needs

The average maturity has been shown to positively correlate with the measures of satisfaction in the interview results. If maturity is low, there is more dissatisfaction and thus a stronger need for professionalising the Source-to-Pay process. Suppliers play a vital role in this maturity level. The fact that suppliers still form a bottleneck is supported by the low maturity score on supplier selection criteria. Companies do not seem dissatisfied with their supplier selection procedures, which might indicate that respondents do not feel the need to improve these procedures. It seems that companies do not realise that suppliers form a bottleneck. This indicates that consultancy on selecting a supplier is required to improve overall maturity.

A specifically mentioned need was the improvement of invoice processing. However, the survey results on invoice processing maturity and satisfaction do not seem to correspond. As invoice processing maturity and satisfaction are quite high, it seems that the foregoing processes cause the issues, not the invoice processing procedure. The results show that invoice processing cannot be linked to purchase order maturity or operational purchasing satisfaction. This shows that these procedures are not perceived to influence the invoice processes by respondents. However, purchase orders and delivery approvals must match and automate invoice processes. Thus, although the invoice process is automated and generally satisfactory, inefficiency seems to exist due to these missing registrations. Customers wrongly perceive the invoice process as being the issue. This idea is further supported by the interviewees' intentions to improve order registration and use catalogues. This shows that the found need for improvement of invoice processing actually relates to a need to formalize the operational purchasing process.

Finally, contract management seems to be the least optimized process within the "Source-to-Pay" cycle. Contract management was found to have the lowest satisfaction measured in both the survey and interviews. This claim is supported by the numerous interviewees who stated that CM still is subjective for improvement. Additionally, survey results show that KPIs are barely used in contract management—76% of all respondents forego them. Furthermore, contract negotiations are not standardized for 82% of all respondents. However, implementing improvements may prove difficult, as respondents stated that contract management is often not a priority. The benefits that strong contracts and contract management can provide are not recognized. However, all four contract management related maturity questions positively correlate with many satisfaction measurements. This indicates that it certainly is important to optimize contract management. This is supported by literature showing many benefits of contracting and contract management (Vagadia, 2012; van Weele, 2009). From these results, it can be concluded that there is a strong latent need for improvement in terms of contract management.

6.1.5 The importance of training

Although the effect of training and personal development on buying behaviour and its aspects was only researched through maturity, results indicate that training might play a more sufficient role. Training and personal development maturity relates to the DMU in terms of

who is involved in the purchasing process. A higher maturity leads to a decreased involvement of directors and senior managers and an increase in line workers' involvement in the Source-to-Pay process. Moreover, it seems that training is a strong predictor for other maturity levels. Although no causal relation can be proven based on the current data, it seems that general maturity can be predicted based on training maturity. Furthermore, it seems that organisational variables provide a predictor for the training maturity. Additionally, these findings support previous findings in the fact that it is important to train and develop employees (Elliott & Turnbull, 2005; Harris & Short, 2014; Kraiger, Passmore, dos Santos, & Malvezzi, 2015). Higher training maturity increases satisfaction and senior managers are freed from procedural tasks such that they can focus on more strategic aspects in the organisation.

6.1.6 The Use of Technology

The final aspect that was researched in relation to the buying behaviour is technology. Seemingly, few respondents used contract management software. Moreover, often spend analysis and strategic sourcing software were not used. The other processes are often facilitated by the general ERP system. Some organisations stated that they only use additional software for invoice processing. These tools mainly help digitalise invoices and facilitate the approval flow. In general, an increase in IT facilitation leads to an increased satisfaction. However, bureaucratic constraints, employee turnover and required change management for using the system are mentioned as drawbacks. This result shows that IT tools can help to improve the process, but a robust implementation plan and proper execution is required.

6.2 Managerial Implications

6.2.1 Selling to the appropriate market

The previously discussed needs show that there is a market for the complete solution NIC group could provide. Many organisations are not completely satisfied with their current processes as they often miss some formalisation. However, the survey results show that most organisations (53%) are already implementing improvements on the Source-to-Pay process. Thus, these companies have already entered the adoption phase for such improvements. Similarly, 29% of all respondents indicated that they want to implement solutions in the future (desire state) (Arts et al., 2011). This shows that there is a large group that seems eager to buy the offered Source-to-Pay solution if offered at a competitive price.

The knowledge required to develop and sell such a total solution is already available within NIC group. Het NIC knows how to provide consultation on strategic sourcing, spend analysis, contract management and operational purchasing. NIC Finance Projecten knows what barriers and risks should be considered in optimising invoice processing. NIC Invoice Projecten knows how to automate the purchase-to-pay process, and Best Deal can help consolidate small suppliers. Even so, for a total solution, the organisations will have to collaborate in a much closer manner. As NIC Invoice Projecten is related to both Het NIC and NIC Finance Projecten, it can act as a link to facilitate the intercompany collaboration.

Currently, sales are separated over the individual units and focussed on selling their specific solutions. Discussions with the management of NIC group showed that each unit has its own sales approach. For NIC Finance Projecten and Best Deal, the sales processes are quite formal. For Het NIC and NIC Invoice Projecten, the process is much less formal and mainly executed by the directors and managers. An underlying reason for this difference in sales approaches is that the companies are organised and managed different. Although cross-organisational

collaboration is improving, each company still has its own target. Therefore, there is no direct incentive to co-develop a sales approach and to cross-sell. However, most directors see the potential of cross-selling and of providing a total solution. Thus, the intrinsic motivation to cross-sell is there, but the extrinsic factors seem to shift the focus to more individual sales approaches for the units.

It is recommended that NIC group change its targets to enhance motivation to cross-sell. Subsequently, the incentives for the sales representatives should change as well. According to Boe (2011), two aspects create the foundation of a successful cross-selling program. The first aspect is a strong incentive system based on personal recognition and financial reward. The second aspect is that everyone in the organisation buys into this idea of cross-selling and fully participates. This requires a change of thinking. Every sales transaction should be seen as the beginning of a new sales opportunity. This view must be supported by the senior management and should be supported by a bonus structure (Sonnenberg, 1988a).

To further enhance cross-selling, Zboja and Hartline (2010) suggested that sales employees should be trained on cross-selling. Such training seems especially beneficial for the distributed sales approach at NIC group. Previous literature indicates that it is much easier to sell solutions to customer needs that are explicitly recognized by the customer. Training current sales persons to cross- and up-sell from a single recognised need towards a more complete solution might be an effective strategy. This would mean that NIC group should initially sell contract management, operational purchasing or invoice processing solutions while keeping up- and cross-selling potentials in mind. To identify needs for additional services, the Source-to-Pay maturity model should be filled out frequently. To efficiently act on such needs, all employees in contact with customers should understand the Source-to-Pay process and the corresponding services. The identified needs for additional services should be discussed with a sales manager to determine follow-up steps.

The identified organisation clusters (Appendix J) can help NIC group to pick an initial sales strategy for each customer (Figure 11). Through additional customer information the sales strategy and process can be improved for a specific customer. Second, a model for deciding on the 'win' chance of the order could be used. Third, the potential margin from that customer is to be estimated. Finally, based on these findings, the sales time that can be devoted to the customer is to be determined by a sales manager. By standardising these procedures, a more general approach for the entire NIC Group can be developed. This process helps developing better qualification forums to determine deals that are to be pursued, standardise the sales process and share knowledge regarding sales (Åge, 2011).

To execute this standardised procedure, an NIC Group-wide sales team should be formed. Information gathered through well-trained employees in the field and the filled-out maturity models is to be shared with this team. After executing the above steps, the team would decide who is to follow up on the lead: a consultant, a service-specific sales representative or NIC Invoice Projecten. This means that NIC Invoice Projecten would take on a more Source-to-Pay process-wide focus. By doing so they can fulfil their purpose in linking Het NIC and NIC Finance Projecten. Additionally, the collaboration barriers (hording-, not-invented-here-, search- and transfer barriers) that exist between the units should be levered (Hansen, 2009).

Determining in what customer to invest time is crucial in this approach. The results suggest that project- and retail-related organisations can reduce their total supplier base and organize their Source-to-Pay process for non-customer good spend. For retail organisations the cost-

of-goods sold is estimated to be between 65% and 85% of their total spend. This means that 15% to 35% of their total spend has not yet been organized efficiently (Kluge, 1996 as summarized by van Weele, 2009). Thus, there is a large savings potential for retail and project oriented companies.

Additionally, the results show that small companies seem to lack organisation in their overall Source-to-Pay process, often because they feel that optimising the process is too costly. However, the DuPont analysis shows that the return on capital employed can easily increase by 10% when a cost saving of only 2% is realised (van Weele, 2009). This relates to the purchasing and spend parts of the Source-to-Pay cycle. For the invoice processing aspects, Pezza and Jan (2012) show that 80% of processing costs can be saved through increasing the maturity. What is more, another 72% of extra early payment discounts can be captured through such an upgrade in maturity (Table 4). Thus, optimising the Source-to-Pay process benefits the organisation as long as costs are kept at a minimal and do not exceed these benefits.

Table 4: Invoice processing performance per maturity level (Pezza & Jan, 2012)

Low maturity	Average maturity	High maturity
16.3 days to process an invoice.	6.1 days to process an invoice.	4.1 days to process an invoice.
\$16.7 average processing costs.	\$6.3 average processing costs.	\$3.3 average processing costs.
18% early payment discount capture rate.	47% early payment discount capture rate.	90% early payment discount capture rate.

Although the invoice processing procedure is well formalised, the results show that larger organisations are often not satisfied with the process. As concluded in section 6.1.4 it is expected that the operational purchasing procedures give rise to this dissatisfaction. The added complexity of large organisations makes it harder and more time consuming to get the purchase orders and invoices signed. These findings indicate that the focus of a solution should be on improving operational purchasing procedures and reducing complexity in the according workflow.

6.2.2 The use of external consultation

Most respondents only asked the Source-to-Pay process software suppliers to guide the implementation of IT tools and to improve their processes. Many organisations are not satisfied with the consultation provided by these software suppliers. Software suppliers, on the other hand, indicated that they do not focus on providing such consultation; their focus is on implementing their product as quickly as possible. This is not in line with the customer's identified objective to optimise processes, which indicates a gap between the expectations of the software consultants and the customer. The fact that there indeed often is a gap between the customers' and suppliers' perceptions of a solution is supported by Tuli et al. (2007). They have shown that in addition to integration and customisation, suppliers should focus on requirements definition, deployment and post-deployment support.

This gap provides an opportunity for NIC group to sell their complete Source-to-Pay solution. Be that as it may, the empirical research shows that NIC group does not have the reputation of a total solution provider for Source-to-Pay services. This makes selling a group perspective hard. For customers to optimise their entire process, including process and technology

optimisation, is a very big investment. This again shows that it might be beneficial to keep offering partial solutions while constantly intending to up- and cross-sell.

To further benefit from this gap, NIC group should collaborate with software suppliers. These software suppliers have the reputation for optimising the process, while NIC group can help them with the requirement definition stage, deployment of the software and post-deployment support. This helps software suppliers meet their customers' expectations while not diverging from their core business. This partnership will increase the solution effectiveness for customers. Besides, interviews with software suppliers indicated that customers already pay per hour for their consultation. This means that NIC group does not have to change their general pay-per-hour business model when working through or with a software supplier. Thus, a collaboration between NIC group and a software supplier would help both organisations efficiently provide additional value to their customers.

Additionally, the interviews with software providers showed that customers prefer freelancers with specific branch knowledge. Supporting this claim, customers said organisations were complex, and processes require specific knowledge to be optimised. Therefore, having branch-related references seems beneficial. To get these branch-specific referrals, it is advised to initially focus on one specific branch. As an added bonus, referrals are found to increase sales turnover by four to five times. The fact that only 11% of sales people ask for referrals, while 91% of the customers are willing to give one, shows the importance of including a referral request at the end of the sales process (Offenberger, 2015).

6.2.3 Summary of recommendations

Table 5 below provides a summary of the main recommendations and their consequences for NIC group.

Table 5: Summarising table for recommendations.

	Recommendations	Consequences for NIC group
Short Term	Base sales strategy on organisational clusters and sell partial solutions. Then up- and cross-sell.	Increase sales potential and the possibility to gather inside information through filling out the Source-to-Pay maturity model.
	Enhance cross-selling. Change targets, provide cross-selling incentives (bonus structure and personal recognition) and train employees.	Increase motivation to cross-sell to successfully implement the cross-selling initiative.
	Research the use of information-sharing tools and benefits of a company-wide CRM system to reduce collaboration barriers (Hansen, 2009).	Improve information sharing between groups to reduce collaboration barriers and enhance cross-selling.
	Develop a cost-efficient solution for organisations in the lower organisational clusters.	This market has a strong need for a total solution but requires cost efficiency.
Long Term	Set up a group-wide sales organisation and align organisational objectives and ideas.	All directors strive for the same objective, and sales are optimised across the business.
	Collaborate with Source-to-Pay software suppliers.	Improve offering with IT tooling and gain orders through software suppliers.

6.3 Answering the Research Question

In this paragraph, the main research question below is answered:

What professional purchasing and finance services do prospects need and how can NIC group fulfil this need?

The answer to this question is provided through the answered sub-research questions below. The above discussed results and literature review provided the required information.

1. *Who are the prospects for professional services that serve the interface between finance and purchasing?*

The results have shown that none of the organisations included in this research were fully professionalised on all aspects. Therefore, all organisations seem to have a need for these services to some degree. Larger organisations are more likely to be in the adoption stage; though they may be persuaded to purchase additional consultation, the organisations in the desire stage are more likely to purchase the complete solution. This idea is supported by the relationship between the organisational clusters and maturity. As a lower maturity equalled a larger need for such services, smaller organisations seem more prone to purchase finance and purchasing consultation. Therefore, the three lower organisational clusters (appendix J) relate to most potential customers.

2. *What services do these prospects need on that interface?*

All aspects of Source-to-Pay process are subject to improvement. However, an explicit need for consultation on procedures related to invoice processing and contract management was found. Processes such as order registration and delivery quality registration need optimisation. Organisations struggle with applying change management to optimise these processes and making sure they are adhered to. These processes are further optimised through reducing maverick buying and increasing supplier performance, which can be achieved through better contract management. Moreover, many stakeholders need to be trained on the benefits of contract management. Finally, it is important that the right suppliers are selected, as they can form bottlenecks.

3. *Why do these prospects need these professional purchasing and financial services?*

This professionalisation leads to large cost savings. Moreover, a higher maturity is found to lead to more satisfaction for employees. Finally, these services help free up time for senior managers and directors to focus on more strategic tasks.

4. *How can NIC meet these customer needs in an efficient manner?*

The knowledge to deliver these professional services is already available within NIC group. However, for a total solution, the organisations will have to collaborate in a very close manner. In this, NIC Invoice Projecten can provide help on change management and implementing required automation. Moreover, NIC Invoice Projecten should change its focus from selling and implementing purchase-to-pay solutions to implementing the Source-to-Pay process optimisation. In this way, NIC Invoice Projecten can act as a link between the other NIC Group units and guide the implementation of the complete solution. To further increase efficiency across the units, they should include each other in projects, increase information sharing and engage in cross-selling.

Finally, it is important to spend time wisely. NIC group should determine which customers to focus on and how much time to invest in a potential customer. The potential of a customer and the best applicable sales strategy can efficiently be determined by the match between the customer and the identified clusters.

5. *What sales reorganisations are required to meet these needs?*

The sales organisations can learn from each other; therefore, regular sales discussions among individual NIC units to share information are advised. This requires a much stronger sales focus within NIC group. Moreover, consultants often already have a good understanding of the customers. Through these consultants, information on prospects can be gathered. By having consultants regularly fill out a Source-to-Pay maturity model for customers, their needs can be identified. These needs should be discussed with a general sales team who decides who is to follow up on the lead. In this decision, the match between the customer and the potential sales representative in terms of knowledge and character is important.

To further increase sales, both the sales representatives and the consultants should be trained on cross-selling. Additionally, it is important to break the barriers between the organisations. This can be achieved by changing the sales incentives and unit targets.

6.4 Conclusions

In contrast to what has been suggested in the six-stage framework developed by Simkin (2008), it seems impossible to segment customers based on their buying process. However, five clusters based on organisational variables were identified that predict the Source-to-Pay process maturity. In turn, satisfaction and technology aspects can be predicted, which helps to identify the customers' needs. From this it can be concluded that sales approaches should be adapted to the match of potential customers with the organisational clusters.

Although all organisations show these needs, organisations related to the clusters with smaller organisational variables are found to have a stronger need and thus more potential. However, it is important to ensure that the cost-benefit ratio is positive for these smaller organisations. In particular, the need for automation is much higher in smaller organisations.

As customers only seem to consult their software supplier and often do not see the benefits of consulting a third party, collaborating with a software supplier would be beneficial. In such a collaboration, NIC group can fill the identified gap between the customers' process-optimisation orientation and the suppliers' system-delivery orientation.

To effectively sell these solutions, better internal collaboration and a sales organisation focussed on cross-selling is required. Moreover, to better target the offer of a complete Source-to-Pay solution, the focus should be on the CFO. This person is found to initiate such projects. Additionally, for smaller organisations the directors and senior managers should be considered during the sales process. No specific branches that showed higher needs or specific buying behaviour were identified; therefore, it can be concluded that it makes no sense to categorize and distinguish between branches.

Finally, the findings show that the identified aspects in the research model are indeed inter-related and impact the buying behaviour of the customer. In addition, training and personal development are found to have a high importance and should be added to the five buying behaviour aspects to form a complete description of the customers' buying behaviour.

7 Limitations & Future Research

7.1 Limitations

The research is conducted through NIC group, a Dutch consultancy firm serving Dutch clients only. Although they serve a very diverse set of customers that represent many branches, there are no international customers. Thus, between country cultural and organisational differences are not accounted for. This limits the generalisability of the results internationally. However, based on similarities between Hofstede's (1996) cultural dimension, the results could be generalized for countries similar to the Netherlands.

Second, the satisfaction measurements used in this study are filled out by people who might have organized the processes themselves. As of this the satisfaction review used in this study might be subjective. It would have been better to test satisfaction through multiple employees within one firm. However, cost and time constraints limited the possibilities for collecting such an elaborate data set.

Finally, the maturity aspects cannot be compared one on one as there is no give scale. The scales are based on previous research combined with best and worst practices. However, they cannot be compared to each other as reaching stage 4 for one aspect might prove to be much more difficult compared to reaching stage four for another aspect. Next to that the scales will shift over time. Through (technological) developments the final stage will become more advanced over time. Through unsupervised learning from organisations, new stages based on classifications of hidden structures can be developed for the model. As of this the scales will keep changing even if additional research would be performed.

7.2 Future Research

Future research can focus on more specific differences between the customers' purchasing processes. As opposed by Simkin (2008), several customers might be clustered based on their specific buying process steps. However, from this study it was concluded that it is very hard to find well underpinned segment separations. It seems most organisations follow a very general process that is executed more or less formal in different situations. Thus, defining an organisation specific process can be very difficult, if not impossible. Still, this research does not provide undisputed proof that creating such segmentations is impossible and thus further research is required.

Additionally, as stated above in chapter 7.1 Limitations, the results might not be generalizable internationally. Therefore, additional research that uses an international sample is required to test the generalisability of the results of this study. In such a repetitive study, the sample set can be extended to include multiple employees in one organisation. Such information can help to test for the validity of the satisfaction measured in this study.

In addition to such validating studies, more elaborating research is required as well. At first, additional research on the developed maturity model is required. For starters, no aspects related to the Spend Analysis process are included in the model. Thus, additional research is required to make sure all aspects are included in the maturity model. This means that such future research will have to look at all possible situations in terms of professionalising the process. Again, a more international data collection can be helpful in such a study. There

might be best practice automation solutions for the process in other companies or countries that were not identified during this research.

Moreover, the assumed relation between the maturity model used in this study and the purchasing maturity model of Reck & Long (1988) is to be tested. Without proof of this relation, it cannot be stated with any certainty that sales strategies can be applied based on the organisational variable clusters.

In a more practical sense, a branch to initially focus on is to be chosen. Additional research is required to pick this branch, but the current study already provides data as a starting point. Furthermore, additional research on how to optimize unit targets, sales incentives and enhance collaboration is required. As the organisations used to operate completely autonomous it takes a lot of time and effort to change the organisation such that they are willing to collaborate. This also requires all parties to value the benefits of such a collaboration. Further research on how to apply change management perspectives to organize such changes is required.

Moreover, the different companies use different IT tools. Hansen (2009) suggests that there are four barriers to effective collaboration. These four barriers (hoarding-, not-invented-here-, search- and transfer barriers) can be levered by using combined IT tools. From discussions with the directors of NIC group it seems that all four barriers apply within the organisation. However, Hansen (2009) argues that there still is not an effective tool that levers all four barriers at once. Therefore, more research to the existence of these barriers and what IT tools should be implemented to increase collaboration efficiency is required. Moreover, Sonnenberg (1988) suggests that cross-selling is enhanced through a well facilitating IT tool as well.

One system that was mentioned in discussions with the directors of NIC group is the Customer Relationship Management (CRM) system. Currently the companies within NIC group still all use their own CRM system. If information on customers and sales projects cannot be shared easily it is hard to up- and cross sell. What is more, it seems that the information entered in the CRM systems is not up to date. As of this, information is not available to all stake holders. This can increase difficulty in communicating with the customer for others than the one who initially was in contact with the customer. As information on already purchased solutions, rejected solutions, contact persons and other discussions are unknown to new representatives, mistakes can easily be made. Moreover, such information could be used to segment customers such that effort can be better managed. However, these effects were not researched in this study. Therefore, additional research is required to determine how to best develop, manage and apply the benefits of a new CRM system.

Finally, before implementing the final recommendations or adopting the conclusion, it would benefit the organisation to perform financial analyses, risk assessments and research the fit with corporate strategy. Such additional research should be supported with analytical assessments such as the segment attractiveness matrix or directional policy matrix (Dibb and Simkin, 2008). This would help the organisation to ensure that other risk factors that were not included in this research do not impair the recommendations from this study.

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Appendices

Appendix A

Search strategy

The search strategy includes the following information for searching articles:

- *Field*: This column contains information on which literature body (as described in chapter 2.4 of the main report) the remaining information in the row is related to. In this field *Purch.* Stands for purchasing professional services, *Sel.* stands for selling professional services and *Mark.* Stands for Marketing of professional services.
- *Search engine*: This contains the search engine used for finding the right article. "Google Scholar" and "Focus" were all advised on the website of the TUE. Furthermore, the use of these search engines is taught in training courses at the TU/e to find scientific information. However, Google Search sometimes provided a more usable result and was thus used.
- *Search string*: This contains information on which words are used in the search engine for finding the right article. The applied search string is mainly based on the related body of literature. Other terms used in the search string were often derived from previously read sources.
- *Potential articles*: This contains the number of potential articles when using the corresponding search engine and search string that were read or scanned.
- *Used articles*: This contains the number of used articles out of the potential articles.
- *Article(s)*: This contains the name of the selected article(s).

In the table below only the search strings that resulted in a used article are included to maintain focus. Moreover, it should be noted that not all literature is included in this table. Some sources were not found through search engines, but were known previously or read when cited in other articles. Other missing articles were only used to enforce statements and did not provide additionally relevant information. To maintain readability and understandability of the search strategy these sources are excluded from the tables.

Table 6: Search strategy analyses table

Field	Search Engine	Search String	Potential articles	Selected Articles	Article(s)
Mark.	Focus	Implicit customer needs	2	1	<i>Uncovering Implicit Consumer Needs for Determining Explicit Product Positioning</i>
Mark.	Focus	B2B market segmentation	2	1	<i>Achieving market segmentation from B2B sectorisation.</i>
Mark.	Focus	B2B marketing	1	1	<i>Driving Demand – Transforming B2B Marketing to meet the needs of the modern buyer</i>
Purch.	Focus	Buying center sizes	1	1	<i>Determining buying center size.</i>
Purch.	Focus	buying center AND purchases	1	1	<i>How Different Buying Center Members Influence Different Purchasing Phases</i>
Purch.	Scholar	Buying center roles	3	1	<i>The Buying Center: Structure and Interaction Patterns</i>
Purch.	Scholar	Negotiation styles	2	1	<i>Negotiation styles of industrial buyers</i>
Purch.	Scholar	Information technology AND purchasing	3	1	<i>The role of information technology in purchasing function</i>
Purch.	Focus	Buyer seller relationships	2	1	<i>Management Decision Customer engagement, buyer-seller relationships, and social media</i>
Purch.	Google	Purchasing maturity	6	2	<i>In search of purchasing maturity - audits and implications.</i>

					<i>Strategic Purchasing</i>
Purch.	Scholar	DISC model	1	1	<i>Industrial and Commercial Training Using the DiSC[®] model to improve communication effectiveness</i>
Purch.	Google	Input throughput output outcome	1	1	<i>The impossible art of buying business services</i>
Purch.	Scholar	Organisational buying	1	1	<i>A General Model for Understanding Organisational Buying Behavior</i>
Purch.	Scholar	Tool for purchasing maturity	1	1	<i>Designing a tool for an effective assessment of purchasing maturity in construction</i>
Purch.	Scholar	Sales effects on buying center	2	1	<i>Impact of organisational and buyer characteristics on the buying center</i>
Purch.	Scholar	Purchasing professional business services	4	2	<i>Purchasing business services Buying business services: towards a structured service purchasing process</i>
Purch.	Focus	Buying centre structures	2	1	<i>The Buying Center: Structure and Interaction Patterns</i>
Purch. Mark. Sel.	Focus	Sales process adaption	2	1	<i>VALUE-BASED SALES PROCESS ADAPTATION: A RELATIONSHIP MARKETING APPROACH</i>
Purch. Sel.	Scholar	selecting service provider	1	1	<i>Criteria used to select management consultants</i>
Sel.	Focus	cross-selling AND up-selling	2	1	<i>Contingent cross-selling and up-selling relationships with performance and job satisfaction</i>
Sel.	Focus	Key account management	3	1	<i>Key account management at company and individual levels in business-to-business relationships</i>
Sel.	Scholar	Value based selling AND b2b sales	4	1	<i>Rethinking the sales force: Refining selling to create and capture customer value.</i>
Sel.	Scholar	Adaptive selling	2	1	<i>Adaptive Selling: Conceptualization, Measurement, and Nomological Validity</i>
Sel.	Focus	Enhance cross-selling AND performance	1	1	<i>Using Internal Relationship Marketing Activities to Enhance Cross-Selling Performance in Services</i>
Sel.	Focus	B2B Selling	4	1	<i>Business manoeuvring: a model of B2B selling processes</i>
Sel. Mark. Purch.	Google	Procure to Pay lifecycle	6	1	<i>Addressing strategic sourcing and transactional procurement</i>
Sel. Purch.	Focus	sales strategies AND Purchasing	1	1	<i>Purchasing-driven sales: Matching sales strategies to the evolution of the purchasing function.</i>

Selection criteria

Below the selection criteria are explained:

- *Field*: This column contains information on which literature body (as described in chapter 2.4 of the main report) the remaining information in the row is related to. In this field *Purch.* stands for purchasing professional services, *Sel.* stands for selling professional services and *Mark.* stands for Marketing of professional services.
- *Article title*: This contains the title of the article.
- *Author(s)*: This contains the name of the author(s) of the article.
- *Year of publication*: This contains the year of publication of the article. This is an important criterion since it's important for our research that we use the most recent information.
- *Times cited*: This contains the number of times the article is cited. This is an important criterion since this forms a measure of popularity of a certain article and popular articles can indicate that an article contains valuable information and is useful.
- *Journal of publication*: This contains the name of the journal in which the article is published. This is an important criterion since a good journal of publication can indicate the quality of an article.
- *5-year impact factor*: This forms a measure of the frequency with which the average article in a journal has been cited in a period of 5 years from 2013. This is an important criterion since this indicates the importance of a journal.
- *Article influence*: This contains a rating from 2013 of the average influence of a journal's articles over the first five years after publication. This is an important criterion since also this measure indicates the importance of a journal.

Field	Article Title	Author(s)	Year of Publication	Times Cited	Journal of Publication	5-years Impact factor	Article influence
Sel.	Business manoeuvring: a model of B2B selling processes	Åge, L.	2011	25+	<i>Management Decision</i>	2.515	0.5
Purch.	Designing a tool for an effective assessment of purchasing maturity in construction	Bemelmans, J., Voordijk, H., & Vos, B.	2013	18	<i>Benchmarking: An International Journal</i>	Picked based on references and personal preference.	
Purch.	Impact of organisational and buyer characteristics on the buying center	Crow, L. E., & Lindquist, J. D.	1985	78	<i>Industrial Marketing Management</i>	2.379	0.5
Purch.	Criteria used to select management consultants	Dawes, P. L., Dowling, G. R., & Patterson, P. G.	1992	165	<i>Industrial Marketing Management</i>	2.379	0.5
Purch.	What is really necessary in successful buyer/seller relationships?	Dion, P., Easterling, D., & Miller, S. J.	1995	179	<i>Industrial Marketing Management</i>	2.379	0.5
Purch.	Purchasing business services	Fitzsimmons, J. a., Noh, J., & Thies, E.	1998	198	<i>Journal of Business & Industrial Marketing</i>	1.146	0.21
The above article does not meet the selection criteria. However, the classification matrix they provide seems to be generally accepted in practice (discussion with thesis company and google search on used terms) and is straight forward. Therefore, this article was not eliminated from this thesis.							
Purch.	Business-to-Business Buying: Challenges and Opportunities	Grewal, R. et al.	2015	10	<i>Customer Needs and Solutions</i>	Straightforward findings, used to fortify literature structure. Article itself is not widely recognized.	
Sel.	Contingent cross-selling and up-selling relationships with performance and job satisfaction: an MOA-theoretic examination	Johnson, J. S., & Friend, S. B.	2015	8	<i>Journal of Personal Selling & Sales Management</i>	Used for its summarization of relevant articles.	
Purch.	The Buying Center: Structure and Interaction Patterns	Johnston, W. J., & Bonoma, T. V.	1981	525	<i>Journal of Marketing</i>	7.421	3.6
Mark.	Uncovering Implicit Consumer Needs for Determining Explicit Product Positioning	Kumar, V., Shah, D., & Robinson, J. M.	2011	?	<i>Marketing Science</i>	3.588	2.3
Purch.	Determining buying center size	McWilliams, R. D., Naumann, E., & Scott, S	1992	63	<i>Industrial Marketing Management</i>	2.379	0.5
Sel.	Key account management at company and individual levels in business-to-business relationships	Ojasalo, J.	2001	140	<i>Journal of Business & Industrial Marketing</i>	2.017	0.65
Sel. Purch.	Purchasing-driven sales: Matching sales strategies to the evolution of the purchasing function	Paesbrugge, B. et al.	2017	0	<i>Industrial Marketing Management</i>	2.379	0.5

Mark.							
Purch.	Negotiation styles of industrial buyers	Perdue, B. C., Day, R. L., & Michaels, R. E.	1986	82	<i>Industrial Marketing Management</i>	2.379	0.47
Purch.	Purchasing: A competitive weapon	Reck, R. F., & Long, B. G.	1988	333	<i>Journal of Purchasing and Materials Management</i>	4.856	4.6
Purch.	The role of information technology in purchasing function	Rodríguez-Escobar, J. A., & González-Benito, J.	2015	3	<i>Journal of Business & Industrial Marketing</i>	2.017	0.65
Purch. Sel.	Management Decision Customer engagement, buyer-seller relationships, and social media	Sashi, C. M.	2012	497	<i>Management decision</i>	1.665	0.5
Purch. Sel.	Achieving market segmentation from B2B sectorisation	Simkin, L.	2008	43	<i>Journal of Business & Industrial Marketing</i>	2.017	0.65
Sel.	Adaptive Selling: Conceptualization, Measurement, and Nomological Validity	RL Spiro, BA Weitz	1990	926	<i>Journal of Marketing Research</i>	3.771	2.8
Purch.	Industrial and Commercial Training Using the DISC® model to improve communication effectiveness.	Sugerman, J.	2009	9	<i>Industrial and Commercial Training</i>	Unknown, used for explanation of generally accepted DiSC model.	
Purch.	The impossible art of buying business services	van Weele, A., & van der Valk, W.	2010	0	<i>Efficient Purchasing</i>	Magazine article. Written by thesis mentor. Described method is argued for in van Weele (2009) as well.	
Purch. Sel. Mark.	Value-based sales process adaptation: a relationship marketing approach	Viio, P., & Grönroos, C.	2013	1	Research paper from Hanken School of Economics, see row below for related officially published article.		
Relate to above	Value-based sales process adaptation in business relationships	Viio, P., & Grönroos, C.	2014	15	<i>Industrial Marketing Management</i>	2.379	0.5
Purch.	A General Model for Understanding Organisational Buying Behavior	Webster, J., Frederick, E., & Wind, Y.	1972	1134	<i>Journal of Marketing</i>	7.421	3.6
Mark.	The next source for competitive advantage	Woodruff, R. B.	1997	5686	<i>Academy of Marketing Science</i>	4.563	1.6
Mark.	The voice of the customer	Griffin, A. & Hauser, J.	1993	2403	<i>Marketing Science</i>	3.588	2.3

Justification of selection criteria

Above the selection criteria used for selecting the right articles are described. Furthermore, an indication of the importance of each selection criterion was provided. As can be seen in the table, content-related criteria and quality-related criteria are used. Especially the quality-related criteria were important in searching the right article. Below on can find a more detailed explanation on how each article is evaluated per quality-related criterion.

- *Year of publication:* For this criterion articles published within a 10 year time span (published after the year 2007). This has two benefits: first, using this criterion results in recent articles and thus higher relevance; second, changes in business research since the financial crisis of 2007-2008 are accounted for. However, some articles publicized before 2000 were used. These articles scored relatively high on the other quality-related criterion, had many citations and are generally accepted as being influential. Additionally, these articles were reviewed more extensively to check if their content was cited in more recent literature as well and if their findings were not proven to be false.
- *Times cited:* For this criterion the researcher searched for articles that are referenced by other articles. A minimum value was not indicated but when it contains a really low value, we insisted that the article has to score high on other quality-related criteria otherwise we decided to don't make use of the article since the quality can't be great enough. It should however be noted that the number of citations for more recent articles (2015 and newer) are less valuable. Thus, the number of citations for articles published after 2014 are not taken in to account.
- *5-years impact factor:* Only articles for journals with an impact factor higher than 2 were used in the thesis. However, one exception has been made for Sashi, C. M. (2012), as this article has sufficient citations.
- *Article influence:* If the score exceeded .5 for articles with >50 citations or newer than 2014. For articles between 2007 and 2014 a cut-off score of 1 was used.

Appendix B

This appendix provides a detailed description of the five different negotiation styles identified by Perdue, Day, & Michaels, (1986). Additionally, their effect on the selling party and when the style can best be applied is described:

- *Collaborative*: the first negotiation style describes a buyer who is willing to solve all concerns for both himself and the seller. In this integrative, problem solving style the buyers main objective is to maximize the joint gain of both parties. This style is best applied to strategic value-added products or services with high costs. However, be careful not to perceive transactional trading performed by a competitive buyer as being collaborative.
- *Competitive*: following this style the buyer tends to fully satisfy his/her own concerns. This often results in a win-lose situation as the buyer enhances his/her own position relative to the seller. This negotiation style is often applied in a competitive market when results or acts are needed quickly. As a seller you should not cave in in such a situation. Appeasing to these competitive negotiators does not create goodwill, the negotiator will perceive this as weakness and will continue applying a competitive style in the future.
- *Sharing*: when this style is followed, the buyer settles for partial satisfaction of the concerns of both parties. In this "compromise seeking" style, the buyer attempts to "split the difference" with the seller. This style is often applied when time is limited. In such a situation, it is important to ensure that you win and lose the right aspects of the deal. However, be careful that the buyer does not expect you to compromise in the future as well. Do not give in too easily and only do so when you have a solid rationale.
- *Accommodative*: the buyer attempts to fully satisfy the concerns of the seller. He will do this at the expense of his/her own concerns if required. In this style the buyer is willing to sacrifice himself to peacefully coexist with the seller. In such a situation, the seller should understand the value for the buyer. He or she might have a different or wrong perception. Exploiting the accommodative style often results in weak long-term relations.
- *Avoidant*: the buyer's main intention is to avoid any confrontation with the seller. He or she is indifferent to the concerns of either party. This style is often applied when the buyer feels that resolving the conflict outweighs the benefits. To avoid misconceptions or miss use of buyers applying this style, identify clear milestones in the buyers buying process. By identifying these milestones and understanding their need, the miss use of the avoidant stile can be reduced.

Appendix C

In their article Reck & Long (1988) describe how purchasing develops from passive to integrative in four stages. The stages defined are the following:

Stage 1 (Passive): A basic approach of purchasing. Purchasing handles orders, reacts on internal orders, and reports to the main organisation.

Stage 2 (Independent): A more developed function, some purchasing operations are automatized, actively looking for new suppliers, costs and value are analysed but the main focus is on price efficiency.

Stage 3 (Supportive): The purchasing function supports finding competitive advantage, purchasing is involved in product development and an important part of the company. A total-cost-of-ownership (TCO) view has been adopted, and purchasers reports to the C level management and communicate with all the other business functions.

Stage 4 (Integrative): Purchasing is highly responsible for competitive success and other functions also understand the meaning of purchasing. There is a clear understanding of how functions are connected and purchasing becomes an integral part of the firm's competitive strategy.

Take note that the model is of a descriptive nature and thus the lines between stages are not hard given. Nonetheless, Reck & Long (1988) state that basic things need to be in order before company can move to the next stage.

Appendix D

In the newly developed "Source-to-Pay" process cycle the following sub processes are defined:

- *Spend Analysis*: Spend patterns, supplier data and compliances are analysed with the help of software tooling. This will provide greater visibility of what is spend, with whom it is spend and how effectively it is spend. Based on these analysis decisions to improve purchasing functions, financial administration and general management decision can be made. Moreover, spend categories can be identified and analysed to optimize them. This process includes reducing the supplier base, focusing on important negotiation trajectories, developing strategic partnerships etc. Many literature sources such as Pandit & Marmanis (2008) state the possibilities and advantages of conducting a Spend Analysis and using the results to improve business processes and decisions.
- *Strategic Sourcing*: The strategic sourcing process is based on the sourcing part of the general purchasing process (van Weele, 2009). It contains the following process steps: Identify purchasing projects, specify requirements and select supplier. These processes lead to the selection of the most optimal supplier on all levels if executed correctly. The contracting process is excluded from the general sourcing process by van Weele (2009) as this is found to be a sub process of the Contract Management process. The general objective of this process is to improve the sourcing of a company by increasing efficiency.
- *Contract Management*: The contract management process follows the strategic sourcing process and contains the contract negotiations and closure stage, and the post-contractual stage (van Weele, 2009). After the right suppliers have been selected they are to be contracted. These contracts should be managed, updated and stored efficiently. Contract evaluation contains the development of methods for supplier monitoring, KPI monitoring and contract evaluation sessions. However, the execution of the supplier evaluation sessions and the actual monitoring is not part of the contract management process, but falls under the Operational Purchasing process.
- *Purchase Requesting*: Before a strategic sourcing project is started or an operational purchase is executed, there must be a request for the to be purchased good or service. This request can be made by any department in an organisation if a need arises. This request should then be placed with the responsible buyer, who in turn might start a new strategic sourcing project.
- *Operational Purchasing*: The operational purchasing process is loosely based on the operational part of the general purchasing process, the supply part (van Weele, 2009). This process contains the creation of Purchase Orders (P.O.) and placing the order with the pre-selected supplier. After the purchased good or service has been delivered the delivery is followed up by accepting the delivery according to pre-arranged quality measurements. Finally, the actual supplier performance is monitored and evaluated with the supplier within the operational purchasing process (Xchanging, 2016).
- *invoice processing*: The final part of the Source-to-Pay process is the invoice processing process. After an invoice is received it is entered in an approval workflow.

Through this workflow the invoice is optimally matched with the P.O. and the delivery acceptance. If there is no match the invoice is to be manually accepted by the responsible employee(s) in the organisation. The organisation of the workflow differs per company and is based on individual preferences. The final step in the process is the settlement of the accounts. In this step, the suppliers are paid and accounts are settled in the book keeping.

Below a graphical overview of the Source-to-Pay process is provided (Figure 12).



Figure 12: Appendix containing completed Souce-to-Pay Cycle for information.

Appendix E

6.1 To what extend is your invoice processing automated?					
Invoices are stored physically. Judgement, Approval and booking are done manually.	Invoices are scanned and stored digitally. They are not managed through a bookkeeping system.	Invoices are provided digital or physical. They are registered in a bookkeeping system. Payment is done manually and there is no uniform approval flow.	Invoices are provided digitally. There is a semi-automated coding process and there is a formal approval process. After approval, payment is released and the invoice is booked for payment.	Invoice is provided in a uniform e-billing format. There is an automated matching process between invoice and p.o. After approval of delivery, payment is released.	P.O. is send to supplier. If supplier approves P.O. the invoice is automatically released in the system for payment. After delivery, the invoice is accepted and paid automatically.

6.2 What is the position of purchasing in your organisation?					
There is no organized purchasing department.	A centralized purchasing department provides procurement frameworks. Purchasing can be executed decentral throughout the business or by purchasing, on request from the business.	There is a coordinating purchasing department. They advise during procurement projects and apply purchasing strategies. Multiple functions are involved in purchasing projects.	Strategic product groups are centrally coordinated. Large contracts are negotiated centrally with help of multifunctional teams.	Category managers act according to a well communicated purchasing plan. Large procurement projects are guided by the purchasing department.	Central purchasing actively supports category mangers. All purchasing projects are executed by multidisciplinary teams and guided by the purchasing department.

6.3 To what extend are purchasing policies and strategies implemented in the organisation?					
No procurement policy and strategy is defined.	Purchasing has defined several KPI’s, but they are not centrally coordinated. Decentral purchasing policies and strategies exists.	Purchasing has defined a clear procurement policy and strategy. However not all stakeholders value these policies yet.	Purchasing is represented in the senior level management. All employees involved in purchasing are aware of the policies and strategies.	Senior level management recognizes purchasing as a strategic partner. Central policies and strategies are always followed. Suppliers are involved in the development of such policies and strategies.	Purchasing policies and strategies are known to all employees. Strategies are fully integrated in the organisation and in line with goals, values and vision.

6.4 To what extend is your contract management optimized?					
If there are contracts, they are generated by suppliers and not formally managed internally.	Behaviour based, “input” contracts Focus on supplier’s capabilities and costs.	Behaviour based, “throughput” contracts. Focus on “how” the supplier delivers. Contracting according to procurement policy with SMART KPI’s.	Performance based, “Output” contracts. Focus on results that are achieved by supplier. Supply base is optimized and contracts are managed centrally. KPI’s are measured and evaluated.	Performance based. “Outcome” contracts. Focus on value creation by supplier. Continuous KPI evaluations with supplier to optimize delivery. Supplier information is centrally available to all stakeholders. Suppliers are involved in planning and development.	Strategic partnerships with suppliers. Created values and risks are shared with supplier. Supplier is involved in strategy development.

6.5 To what extent are personal training and development stimulated in the organisation?					
Training is not facilitated or provided. If the need exists employees must take on training during free time on their own costs.	No standardized training is provided. If the need exists, training can be organized and facilitated by the company in consultation with the manager.	There is a basic training program for new employees. There is no continuous training/ development and no cross functional training.	There is a continuous program for personal development and training. Participation allowed in consultation with management. Cross functional training is allowed, but does not happen often.	Competence frameworks are developed. There is continuous personal training, based on these frameworks. There is active investment in personnel training and all employees receive basic cross functional training.	There is a robust and continuous training program. Traineeships are facilitated and there is a “learning” culture. Investment in personnel to increase organisational efficiency. Participation is obliged.

6.6 How can the focus on the Source-to-Pay process best be described for the organisation?					
Transactional Purchasing focuses on finding capable suppliers and direct need fulfilment. Finance focuses on financial overviews and administrative tasks.	Commercial Purchasing focusses on reducing costs. Finance monitors costs and there are ad-hoc discussion between the two parties to reduce costs.	Purchasing coordination Purchasing coordinates procurement projects and finance supplies budgets and there is a clear overview of the spend and its effects.	Internal Integration Focus on cross-functional problem solving. Collaboration between purchasing and finance to trace TCO. In and output costs for all processes are known.	External Integration Explicit strategy to outsource as many tasks as possible. Purchasing is focussed on building relations and finance focusses on shared risk reduction.	Value chain integration Focus on total customer satisfaction. In collaboration with key suppliers the supply chain tends to fulfil all customers’ needs as best as possible. The S2P process is monitored and improved continuously.

Appendix F

1 General information:

1.1	Function of Interviewee:
1.2	Company size: ___ FTE ___ Finance FTE ___ Purchasing FTE _____ mln. € Yearly turnover _____ Yearly Invoices _____ mln. € Yearly purchasing spend
1.3	Simplified Purchasing and Finance organization layout:

2 Process:

2.1	What process steps in the theoretical Source-to-Pay process are executed in your organization and what steps are missing in the theoretical model?
	Strategic sourcing:
	Contract management:
	Purchasing requests:
	Operational Purchasing:
	Invoice Payment:
	Spend Analyses:

2.2 How formal are these processes executed?

3 Decision Making Unit

3.1 Who are involved in the following process steps and what are their functions:

Strategic sourcing:

Contract management:

Purchasing requests:

Operational Purchasing:

Invoice Payment:

Spend Analyses:

3.2 How is the efficiency and correctness of the process execution monitored?

4 Technology:

4.1 What IT-systems are used to facilitate the main steps in the Source-to-Pay process?

Strategic sourcing:

Contract management:

Purchasing requests:

Operational Purchasing:

Invoice Payment:

Spend Analyses:

5 Need Fulfilment:

5.1 Please, provide an indication of your satisfaction (on a 1-5 scale) on the main steps in the Source-to-Pay process on the following aspects: Throughput time, Quality of execution, Completeness of execution, Risk management.

	Throughput	Quality	Completeness
Sourcing			
Contract Management			
Purchase Requesting			
Opp. Purchasing			
Invoice payment			
Spend analyses			

5.2 Do you have specific intentions for improvement of the Source-to-Pay proces?

Appendix G

Below the six evolutionary stage framework opposed by Simkin, (2008) is described. By going through these steps, the buying proforma (depicted in Figure 13 & Figure 14) developed by Simkin (2008) is filled out.

The first step covers *the team convening* phase. A cross function, cross hierarchical group of is formed. Service, execution, sales, IT and market are to be represented

During the second phase, the *current customer groups* are described. A detailed list of customer characteristics is developed for all customers known by the organisation.

Subsequently during the third opposed phase the *customer characteristics and buying behaviour* of these customers are analysed. For this purpose, the buying proforma is completed for each customer. Then marketing intelligence and insights of the team are used to develop general buying proforma for groups of customers during a segmentation workshop. Two completed Buying Proforma are depicted as an example in (Figure 13 & Figure 14) below.

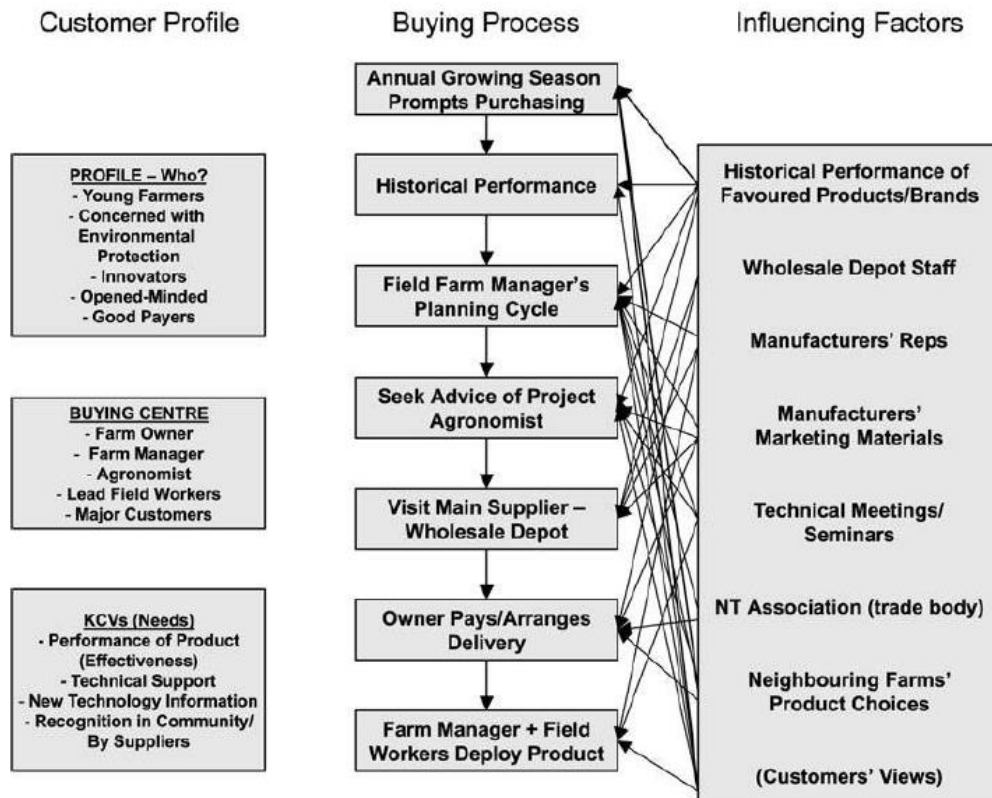


Figure 13: Example of a completed buying proforma in agrichemical corporation selling to no-till soya farmers.

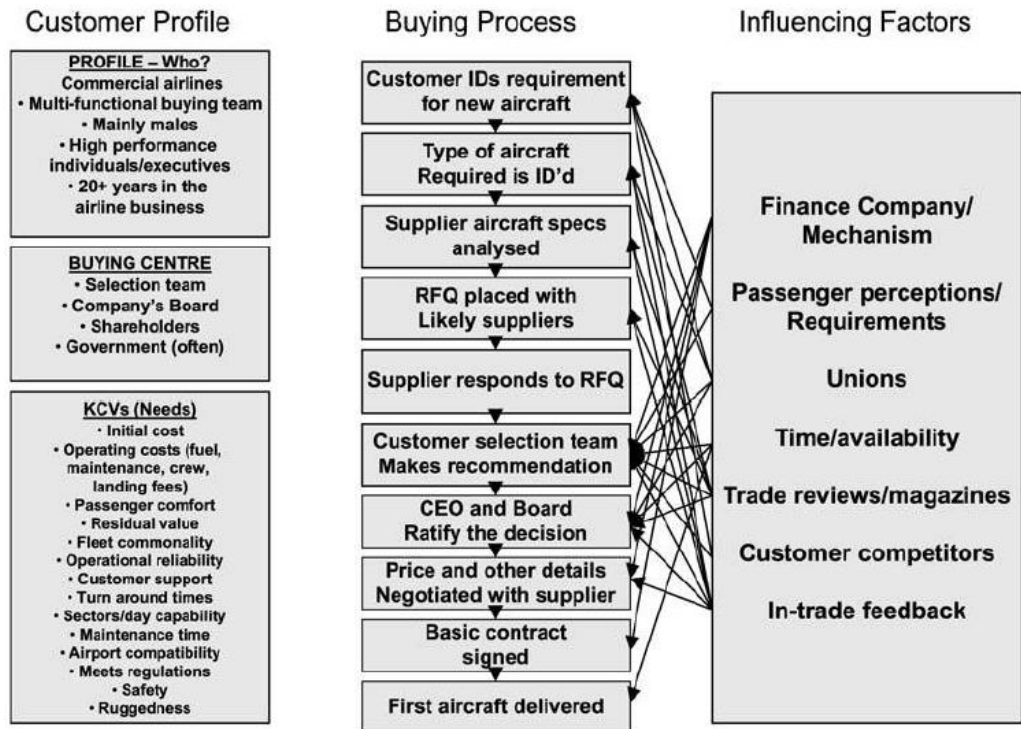


Figure 14: Example of a completed buying proforma in a commercial airline corporation.

During the proforma development workshop described above, the number of *distinctive customer groups* is proliferated. Current segments should be split up until there is agreement for every customer on a buying proforma. Customers showing dissimilarities in their profile, needs and process organisation should not share a proforma.

Now the newly formed customer groups can be *re-aggregated in market segments*. The re-aggregation should be irrespective of the previous defined segments. Each new segment should hold similar characteristics, key customer values and buying behaviour.

During the sixth and final phase *marketing programs* are developed for better engagement of the new segments. Different approaches and personnel will be applied to the different buying segments. As the team formed in phase one includes managers from all departments a mutual understanding of the benefits of a new approach to customer segmentation will be reached.

Appendix H

Source-to-Pay Process Maturity Questions

1. To what extent is your invoice processing automated?			
Invoices are stored physically. Checks, approval and booking are done physically.	All invoices are stored digital. Physical invoices are scanned. However, the approval process is still physical.	Invoices are supplied digital. The approval process is automated by IT-tools.	Invoices are supplied in a uniform e-invoice format. Suppliers can approve invoice based on matching orders themselves.

2. What does the approval flow for invoices in your organisation look like?			
Approval for payment is given by the main financial responsible of the organisation (such as the director or CEO).	Approval has to be given by the buyer (who placed the order), the related budget responsible and the financial department.	The invoice is matched with the purchase order and the delivery approval. After approval of the budget responsible, the invoice is approved.	Supplier accepts the invoice after which the invoice appears in the book-keeping system for payment. After approval of the delivery the invoice is released for payment.

3. What is the position of the purchasing department within your organisation?			
Purchasing is organized decentral by the departments or project teams themselves. A central purchasing department that provides guidelines is possible.	There is a coordinating purchasing department. This department guides main purchasing projects and develops purchasing strategies.	Multidisciplinary teams execute the purchasing projects. The projects are guided by a central purchasing department. Purchasing orders are created central and decentral.	There is a central purchasing department. This department executes all purchasing processes. In this they are supported by the functions within the business when required.

4. To what extent are purchasing guidelines and strategies implemented in your organisation?			
No purchasing guidelines and strategies have been explicitly specified.	There are uniform purchasing guidelines and strategies developed by the purchasing department. However, they are not supported throughout the whole organisation.	Senior management views purchasing as a strategic business partner. There are central and clear purchasing guidelines that are always followed.	Purchasing guidelines and strategies are known to all employees and enforced by senior management. Purchasing strategy is in line with values, goals and vision.

5. How is the strategic purchasing process in your organisation organized and guided?			
The process is not formally executed. In consultation with stakeholders a supplier is chosen based on basic needs and price.	There is a standardized process that requires forms regarding specifications, planning, budget etc. to be filled for approval. Sometimes online tender platforms are used.	The entire process is facilitated by a system. In this templates for team-, purchasing-, budget and planning specifications provide guidance. There is a connection with online tender platforms.	Additionally, the system predicts purchasing and automates certain steps projects based on spend, supplier information and big data.

6. What is the main focus of the purchasing department within your organisation?			
Purchasing solely focusses on finding suppliers to meet direct needs.	Additionally, purchasing actively focusses on cost reduction.	Purchasing focusses on reducing total cost of ownership (TCO) instead of unit costs. Cross-functional communication is used to reduce TCO and solve issues.	In collaboration with strategic partners as much value as possible is generated for the end customer. Focus is on total customer satisfaction.

7. What aspects are considered during the selection of a supplier?			
The supplier has to meet the order requirements and specifications at a competitive price.	Additionally, the supplier has to be able to supply invoices in a standardized e-invoice format.	Additionally, the supplier has to support the possibility of 'self-billing' (in the near future).	Additionally, the supplier has to support the integration of systems such that he automatically receives the order when approved in our system (in the near future).

8. How are purchasing orders processed within your organisation?			
Orders are placed with the supplier by the buyer after approval of the budget responsible, without internal registration.	Orders are placed with contracted suppliers as much as possible. Most purchase orders are registered internally.	Purchase orders are always registered in an internal system. Approval is forced by the system before the order can be send to the supplier.	After approval, the purchase orders in the internal system are automatically send to the integrated supplier system.

9. What focus best describes contract management within your organisation?			
If there are contracts, to focus is on what suppliers have to deliver and what the costs of such deliveries are.	Focus is on how the supplier delivers the good or service and what the quality of that deliver is.	Focus is on the results achieved by the supplier's delivery and the quality of the output of the supplier.	Focus is on the generated value by the supplier for the end customer. This is measured through satisfaction and ROI.

10. To what extent are contracts centrally managed and stored?			
Contracts are not stored centrally. There is no formal contract management and control system and no central contract overview.	Contracts are not stored centrally. There is a central overview of the contracts. This overview is facilitated by a contract control system.	Contracts are centrally available. There is a contract management system in which departments manage their contracts. All contract information can be requested by other employees.	Contracts are managed and stored central. There is an integrated management system to which all stakeholders have access.

11. To what extent are the contract negotiation and management phases standardized?			
There are no standardized rules, regulations, processes and templates for contract negotiations and management.	There are basic rules and processes for contract negotiation and management. For some contract sorts templates have been developed.	For all regular contracts are rules and guiding templates available at the responsible department. These are periodically evaluated and improved.	There is an organisation wide set of rules supported by contract templates for all contracts. These are continually reviewed and improved.

12. To what extent are KPI's included, monitored and evaluated in your supplier contracts?			
Supplier creates the contracts. Sometimes KPI's are formulated but the organisation does not act actively on these KPI's.	There are clear KPI's formulated in contracts. Contracts are only used in case there are issues with suppliers.	KPI's are measured and evaluated periodically. Suppliers are managed based on these evaluations.	KPI-evaluations are discussed with the supplier in detail to optimize delivery. There is continuous monitoring of KPI's.

13. To what extent are personal training and development stimulated within the financial and purchasing departments?			
No standard training is offered. Needs can be discussed with managers. When approval is given the organisation facilitates the requested training.	There is a program to meet basic training needs. Development and training is not continuous and cross-functional.	Training is provided based on a competence-framework. Participation is discussed with managers. Cross-functional training is not provided standard.	Robust and continuous training and development program with the goal to improve the organisation. Cross-functional participation is stimulated.

Appendix I

Interview ESize

1. Can you shortly describe the main products you offer?

We offer several software packages to optimize business processes in the field of purchasing. These software tools are all based on the Source-to-Pay process. For example, we can guide you through the purchasing process, help to optimize the procure-to-pay process or help to optimize your spend monitoring. Our solutions are partially web and cloud based, which means that information can be accessed everywhere.

2. What main services do you offer to a customer after they bought a system?

Our main purpose is to implement (part of) the Source-to-Pay software. To do so, we first help to determine the processes and workflows. However, in many cases our customers have already identified the required workflows. We can provide information on what workflows we need to adjust the system to your needs in advance.

Furthermore, we help by providing consultation on how these workflows and processes can be matched and facilitated with/by the system. We provide a team leader if required to help implementing the software. Some customers decide to do implementation themselves, but we advise to hire one of our consultants to speed up the process. Our advice on implementation is mainly focused on customizing the system to your needs within the set standards. It is not possible to completely reprogram parts within the system, the main point of view is that the system is configured to your needs, not the other way around.

3. Do you also provide consultation on how to manage the organisational change that comes along with the implementation of such a system?

We do provide basic advice on how to guide the implementation on aspects such as change management, but this is not our core strength. Through our experience we know what you should keep in mind, but we do not formally guide this process. Some customers who do not have the knowledge to guide employees and the organisation through this change ask for help of other consultancy firms or freelancers, depending on their needs.

4. Do a lot of customers have to adapt their processes for the system to work efficiently?

In general, the system can be modified to match the processes of the customer. However, in some organisations that do not have any formal processes we require them to identify and describe some basic processes. The system has been developed to meet as much process requirements as possible. Still the system cannot be modified to exactly match every customer process. In those cases, customers also have to change their process if they want to use the system for that process.

5. How do you help your customer to create efficiency in their processes?

Our value is captured in the system and the system implementation. Through the system we can deliver efficiency in processes. Implementation leads to reduced throughput time, a reduced amount of work and higher quality and control standards.

6. Can you help customers to enhance their processes on a strategic level as well?

We do not have the knowledge to optimize our customers processes. This should be done by an internal project team. To speed up the system implementation we advise to reorganize processes that relate to the system in advance of system implementation. Having structured processes that are optimized helps to better configure the system. If a customer has already decided to buy our system we can provide guidelines that help to organize processes to better match the system. Moreover, it helps to reduce implementation time and costs as we do not need to figure out what the processes and workflows are.

7. How does the customer pay for you consultation?

Payment of our consultation service is on hourly rates or on day per day payment. This depends on your need and the availability of our consultants. We always provide an estimation in advance of the project, but a specific price cannot be guaranteed. In some exceptional cases, we can agree on a fixed price for the system including the implementation, but this is often not preferred.

8. What aspects of the system can be customized?

Within our system you can customize forms that are needed to be filled in during process steps. Next to that the workflow can be adjusted to the customers process. However, the process steps, forms, tables, backend etc. are all set. However extra information fields can be added, tables can be copied etc. To summarize we can adjust the system to the customers' needs within limits, but we do not reprogram any parts to customize the system.

Interview K3 Retail

1. Can you shortly describe the main products you offer?

Our main software is Microsoft Dynamics Nav. This is an ERP system that has modules for inventory control, purchasing and CRM among other things. We have customized this system to meet our branch specific customers' needs. We service the retail, wholesale and manufacturing industries.

2. Do you provide software to facilitate the Source-to-Pay process?

We are definitely not specialized on that area, however Nav does provide modules to support those processes. Our smaller customers tend to use Nav to support these processes if they have them formally organized at all. However, larger customers often purchase specific software packages to automate these processes.

3. What main services do you offer to a customer after they bought a system?

At first we meet up with the customer to gather data on their organisation. We need to know what their processes are and how they have stored data until now. We need this information as we need to import data and adjust the system to the organisation of the customer. We also use this information to decide which sales engineer best fits the customer. This sales engineer prepares the system such that it matches the information gathered from the customer. The customer can also contact this sales engineer if they have issues with the implementation.

4. Do you also provide consultation on how to manage the organisational change that comes along with the implementation of such a system?

No, we do not standard provide any consultation on how to implement or optimize the system. We provide a standard package that we have pre-customized to the customers' needs. If they need extra help we can of course support them, but they have to pay for this help based on post calculated hourly rates. If customers state that they want help with the implementation we can provide an estimate of the costs. Otherwise customers mostly pay a monthly subscription.

In most cases where customers need extra help with the implementation they hire an external consultant. They do this because they often require very specific knowledge on an aspect. We cannot always deliver such specific knowledge. There are a lot of freelancers that have specialized in implementing Microsoft Dyanamics for certain branches or companies. These consultants are mostly hired in these cases.

5. Do a lot of customers have to adapt their processes for the system to work efficiently?

We basically adjust the system to the processes that are already in place. However, some functions cannot always be matched with the current processes. In those cases the customer can decide if they wat to adjust their processes or exclude them from the system.

6. How do you help your customer to create efficiency in their processes?

Dynamics Nav its main purpose is to create more efficiency, so yes, I believe we definitely provide more efficiency in their processes. Installing the system also ensures that employees know what the processes are and how they should be executed. They are now forced to follow the processes, which helps to reach to full potential of the process efficiency.

7. Can you help customers to enhance their processes on a strategic level as well?

We do not help customers on a strategic level. We are focused on providing and partially installing the system. However, some customers do require third party help to optimize their processes on a strategic level. We do not facilitate in this and we do not have contracts with consultants providing this kind of help.

If customer require additional help with the implementation, or organisational change they often hire freelancers. As most company's value branch, specific knowledge freelancers are often more effective than large consultancy firms. Large consultancy firms do not serve a niche market. We always advice the customer to find someone that is specialized in their nice as there are so many branch specific elements to consider.

8. How does the customer pay for you consultation?

They pay a monthly fee for the system and pay an hourly rate for the help they need. They also pay a certain amount in advance to customize the system to their needs. We adjust that amount after we delivered the system to the actual hours we had to spend on data retrieval and customizing the system. We cannot know the actual costs in advance as they can change easily based on the customer.

Appendix J

The table below provides an overview of the five clusters that were formed through hierarchical clustering based on four organisational variables (Turnover, Spend, Invoices, FTE). The data that was used was gathered through the survey in this study.

Table 7: Overview of the identified organisational variable clusters

Variable	Cluster	95% Confidence Interval			Std. Deviation	Min.	Max.
		Mean	Lower Bound	Upper Bound			
Turnover (in Millions)	1	0,6	-1,9	3,1	0,28	0,4	0,8
	2	6,6	1,99	11,21	3,7	4	12
	3	50	38	61	29,5	14	150
	4	258	183,3	334,5	195	100	950
	5	700	457,3	942,7	472	110	1500
Spend (in Millions)	1	0,17	-1,4	1,76	0,177	0,05	0,3
	2	1,9	1	2,9	0,75	1	3
	3	23,2	16,7	29,8	16,2	3	80
	4	150	101,5	199,5	126,3	40	650
	5	443,2	244,1	642,4	387,4	50	1300
Invoices	1	550	-5167	6267	636	100	1000
	2	2080	505	3654	1267,7	500	3400
	3	11485	8323	14646	7826	3200	35000
	4	21100	15791	26408	13690	800	70000
	5	178529	122680	234379	108624	60000	400000
FTE	1	4,5	-1,85	10,85	0,71	4	5
	2	116,8	-100	334,5	175,3	6	428
	3	168	126,7	210	103,1	22	400
	4	515,8	334	697,5	468,6	60	2400
	5	2952,9	1825,7	4080,2	2192,5	650	9000
Av. maturity	1	1,4	-	-	-	-	-
	2	1,8	0	4,2	0,19	1,6	2
	3	2,1	1,9	2,3	0,1	1,5	3,2
	4	2,3	2,1	2,5	0,1	1,6	3,3
	5	2,5	2,2	2,75	0,13	1,6	3,8