Bachelor assignment Business Administration:

"How can Firm X engage in new market development without changing its core competence and networking structure?"

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Executive summary

Currently, Firm X is aiming at targeting new markets without drastically changing its networking structure and core competence of developing e-procurement software. Therefore, it is of critical importance to investigate possible new business opportunities in new customer segments for Firm X. This research was committed to investigate relevant factors for the adoption of e-procurement systems and analyze the current adoption trends in different industries. Managers' perceptions of e-procurement's task improving capability was investigated, as well as the current internal support in organizations for the adoption of e-procurement systems, the extent of normative pressures which companies were subject to and the relationship between firm size and e-procurement intention. Also, the perceived value of Firm X's current offerings and total value proposition was investigated in different industries. This research comprises a sample of 128 managers, each representing the company they are currently employed in.

The most important findings of the research were that the factors task improvement, internal support, normative pressure and firm size, all had a significant positive relationships with an organization's e-procurement intention. The results show that, on average e-procurement systems were perceived as task improving across al industries and firm types. However, the average degree of internal support and normative pressure were observed to be moderately low. This implies that Firm X should emphasize e-procurement's task improving capability in its marketing strategy. In doing this, Firm X should convince managers of the benefits of e-procurement to gain their support and increase the chance of adoption in organizations. Also, Firm X should target markets with a high degree of normative pressure, which will increase the chance of e-procurement adoption. In addition, this research found that e-procurement intentions and perceptions differ between different industries, firm types and firm sizes. These findings imply that Firm X should target the industries that score the highest on the measured adoption variables and attach lower priority to the industries, which score the lowest. Firm X should target large public organizations in the ICT, Health, Service and Electronic industries. This paper also shows that, on average, the modules offered by Firm X, which scored relatively high, were the E-procurement module, the Invoicing module and the Connect (interfacing) module. The least valuable module rated by the managers was the Staffing module. Firm X can choose to dedicate more resources to the development of popular modules and decrease the amount of resources dedicated to the lowest rated modules. Also, the most valued modules differed per industry, which means that Firm X should target the right industries with the right e-procurement modules. This research also investigated the business case for providing software as a service. The results indicate that Software as a Service was valued the highest in the Retail industry and was considered to have a moderately high value across all industries. In conclusion, we can state that Firm X can engage in new market by targeting large public companies in industries with the highest e-procurement intentions and providing them with the highest valued modules in those specific industries.

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Chapter 1: Introduction

1.1 Research context

This section is dedicated to address several research goals and how I intend to achieve these goals. In this document, I will embed the challenge Firm X is facing into scientific literature and set out a research design in order to assess the viability of new business opportunities.

Firm X is a company located in City X, the Netherlands. The company is specialized in developing procurement software for private companies and governmental organizations (e.g. educational and healthcare institutes). Currently, Firm X is the market leader in its business field, which is primarily oriented towards the Netherlands. Firm X sells its procurement software products via essential partners that are highly specialized in the implementation of the software at end-users. Firm X aims at offering its end-users a professional procurement system by offering them different modular software products like e-procurement, contract management, staffing, sourcing and invoicing. Recently, the company has started discussing several expansion strategies into new market segments to maintain sustainable competitive advantage.

Currently, Firm X is looking to expand into new market segments without drastically changing its value proposition and networking structure. Osterwalder (2004, p. 50) uses the term value proposition as an overall view of one of the firm's bundles of products and services that represent value for a specific customer segment. E-procurement is gaining in popularity in business practice and its benefits encourage its adoption for a variety of areas (Ronchi et al., 2010, p. 131). According to Chesbrough (2004, p. 355) companies must find an appropriate business model to capture value from the firm's technology. Also, a firm must identify the right market segment and define the structure of the value chain to create and distribute the offering to its customers (Chesbrough, p. 355). In order to gain insight in the decision-making process of selecting potential customers in different segments, it is important to analyze customers' wants and needs and the value of the company's e-business offering (Sole et al., 2009, p. 289). The identified customer wants and needs can eventually result in e-procurement adoption by certain firms in different industries (Soares-Aguiar & Palma-dos-Reis, 2008, p. 120). In defining the structure of the value chain for the distribution of Firm X's e-business offering, Larson (1991, p. 173) suggests that smaller firms lack the financial resources to vertically integrate the value chain and should pursuit a networked approach. An important aspect of strategic planning for entrepreneurial firms is to identify prospective partners and consciously initiate and build partnerships with responsive firms (Larson, p. 173). Abell (1980) gives us three dimensions of linking customer needs to customer groups and technology. This 'business definition' covers three dimensions: technology ('how'), function ('what') and market ('to whom'). This bachelor assignment is aimed at linking Firm X's current value proposition to customer values in new market segments and trying to identify relevant factors for new market development (Ansoff,

1964). Also, potential network partners will be identified who can contribute to Firm X's value chain in the future to distribute and implement the company's offering.

1.1 Research problems

In order to determine how Firm X's value proposition could match customer values in different industries and market segments, the following main research question has been composed: *"How can Firm X engage in new market development without drastically changing its core competence and networking structure?"*

To be able to answer this main research question the following sub-questions have been composed:

- *Which factors contribute to the adoption of e-procurement systems by firms?*
- *What is the perceived value of Firm X's modules in different industries with regards to e-procurement solutions?*

Chapter 2: Theoretical framework

An extensive literature study has been done to find the relevant theories that are involved in answering the main research question. These theories will be embedded in the assignment and operationalized in the research methodology. The main theoretical concepts that have been selected are (1) perceived value of e-business services, (2) e-procurement adoption, (3) market segmentation and (4) partner networks in the value chain.

2.1 E-procurement adoption

In order to determine the fit between Firm X's value proposition and customer values in different markets, we have to understand the factors that influence the adoption of e-procurement solutions. Purchase and Dooley (2010, p. 460) use the Technology Acceptance Model as the foundation of their theoretical framework. While previous researchers have investigated barriers for e-procurement adoption (Min and Galle, 2003), recent researchers focus on identifying factors that positively influence the adoption of information systems (Wu et al., 2007). The Technology Acceptance Model provides one of the most widely accepted theories concerning the adoption of in information systems and highlight behavioral intentions (King and He, 2006). Van Raaij et al. (2007) have focused their selves on investigating the 'soft' side of the implementation of e-procurement software. The 'soft' side includes factors like supplier relationships and users' perceptions of usefulness. This 'soft' side of e-procurement adoption can help us in understanding the use of e-procurement systems (Angeles and Nath, 2007). External factors like supplier influence and participation also play a direct role in influencing the acceptance of e-procurement systems (Burton-Jones and Hubona, 2006; Subramanin and Shaw, 2002). Purchase and Dooley (2010) recognize factors like task improvement and convenience as two of the main technology acceptance factors (p. 460). The authors also recognize supplier participation and internal organizational support as factors that stimulate the adoption of e-procurement solutions (p. 462). The

results of Purchase and Dooley's research show that supplier pressure and the number of participating suppliers in the supply chain lead to increased e-procurement intentions. Task improvement, like reducing time with sales people, as well as internal organizational support for staff training and infrastructure support, contribute to e-procurement adoption (p. 467).

In addition to the work of Purchase and Dooley (2010), Soares-Aguiar and Palma-dos-Reis (2008, p. 123) have identified that the organizational, technological and environmental context also play a significant role in the adoption of e-procurement. The organizational context covers areas like firm scope and firm size, whereas the technological context covers areas like a firms information technology expertise and business-to-business know how (p.124). The environmental context comprises factors like the extent of e-procurement adoption among competitors and the perceived success of competitor adopters (p. 124). The result of the authors' empirical research shows that IT expertise, firm size, trading partner readiness and the extent of adoption among competitors are significant e-procurement adoption facilitators (p. 129).

Another important contribution to understanding e-procurement adoption is the work of Batenburg (2007). Batenburg (2007, p. 187) identified a firm's industry as a possible determinant of e-procurement adoption. Batenburg argues that firms that depend on direct and indirect production goods will generally benefit more from e-procurement because of the number and frequency of purchase orders (p. 187). The result of Batenburg's research shows that the ICT and Electronics sector are the prominent industries in the adoption of e-procurement solutions (p. 188).

2.1.1 Normative pressure

Normative pressure is described by Wu et al. (2003, p. 342) as the institutional pressure that arises from a threat of lost legitimacy. According to Abrahamson and Rosenkopf (1990), organizations adopt innovations not necessarily because of the potential efficiency and financial returns, but because of the institutional pressures caused by the amount of entities that have already adopted these innovations. Depending on the kind of pressure exerted by external entities such as suppliers, customers and competitors, factors like conformity and legitimacy can be determinants in the adoption of e-business practices (Homburg et al., 1999). Businesses can fear being left behind if they don't accelerate the adoption of e-business innovations in their organization (Wu et al., 2003, p. 432). In this research, the concept of normative pressure is comprised by three separate constructs: supplier pressure, customer power and competitive pressure. Although these variables belong to the same category and can all be described as normative pressure, they differ in means of measurement and have to be examined in more detail.

Purchase and Dooley (2010, p. 462) identify *supplier pressure* and participation as external forces that drive the adoption of e-procurement. Purchase and Dooley (2010, p. 462) define the concept of supplier pressure as the non-coercive means of suppliers to pressure buyers into using e-procurement systems. Supplier pressure can be expressed

trough non-coercive means such as the inability and refusal of suppliers to supply an offering or offering disadvantaged contract terms (Joo and Kim, 2004). Business can be forced to adopt e-procurement in order to be eligible for advantageous business deals and to maintain a healthy relationship with its suppliers. The number of suppliers in the value chain, who are willing to participate in implementing and using e-business innovations, also drive the adoption of e-procurement systems (p. 462). This concept is described as trading partner readiness by Soares-Aguiar and Palma-dos-Reis (2008, p. 124). It is necessary for trading partners in the value chain to adopt compatible systems in order to place orders electronically (p. 124). Deeter-Schmelz et al. (2001) have found that close relationships with upstream and downstream channel members positively impact the adoption of e-procurement systems. Electronic procurement systems may be more appropriate when there is a high level of integration between the system of the buyer and supplier (p. 124).

Soares-Aguiar and Palma-dos-Reis (2008, p. 124) indicate that *competitive pressures* could also drive the adoption of e-business innovations, because if enough similar organizations follow the same course of action in the same sector, other firms will follow to avoid being perceived as less innovative. The amount of competitors who have already adopted e-procurement systems in the industry can pressure businesses into adopting e-business innovations. The authors call this concept the perceived extent of e-procurement adoption. In this concept, a company's perception about its competitors' practices plays a more central role than actual gains obtained by implementing innovations such as e-procurement systems. Soares-Augiar and Palma-dos-Reis (2008, p. 124) also state that technology followers often imitate technology pioneers, who have successfully exploited IT innovations. Potential adopters are more likely to adopt IT innovations if they perceive other businesses that have already adopted e-procurement systems as successful. The authors call this concept the perceived success of competitors.

Wu et al. (2003, p. 431) state that *customer power* also plays a significant role in determining the adoption of e-procurement systems. The authors describe customer power as the exogenous customer demands on the business to implement certain practices (p. 431). Implementation caused by customer power tends to be reactive instead of proactive, because innovations are mostly implemented when customer pressure reaches a certain degree and causes the adopting innovation inevitable (p. 431). When customers have enough power, it is possible that they will use their power to pressure organizations to adopt new technologies and innovations (p. 431). Wu et al. (2003) also state that the Internet enables businesses to control their interactions online and that businesses have become accustomed to e-business functionalities like online customer service, order tracking and updates via e-mail (p. 431). Businesses can be forced by their trading partners to adopt new technologies that facilitate communication at different levels in the supply chain (p. 431). The authors predict that large customers who seek benefits like convenience and low transaction costs, can pressure businesses to implement online order taking. Christensen and Bower (1996) found that when there is significant customer demand, the organization could be forced to adopt a certain

innovation. At the process level, customers will apply the most pressure on the interface, which is used for communication with businesses (Wu et al., p. 431).

2.1.2 Internal organizational support
Purchase and Dooley (2010, p. 463) identify internal support structures as a factor that could influence the use of e-procurement systems. Internal support of e-procurement systems can be defined as the internal organizational forces that boost the adoption of such systems in order to gain from the benefits that such systems offer (Croom and Brandson-Jones, 2004). Internal support comprises several factors influencing the adoption of e-procurement systems, like top management commitment (Wu et al., 2007), staff training (Purchase and Dooley 2006, Joo and Kim, 2004), IT infrastructure and business-to-business know-how (Soares-Augiar and Palma-dos-Reis, 2008).
Wu et al. (2008, p. 429) describe top management emphasis as the managerial attention and buy-in for the adoption of e-procurement systems. The attitude of top management toward change and innovation influences eventual adoption decisions (Damanpour, 1991). This is also the case for the implementation of e-procurement systems, where the role of top management will most likely be significant in the adoption process (Wu et al., 2008, p. 429). Implementing e-business tools may force an organization to restructure and re-align its existing relationships with customers and suppliers in terms of information sharing network (p. 429). Changes that will disturb the equilibrium and relationships with a firm's existing customers and suppliers will most likely proceed only with top management's support (p. 429).
Purchase and Dooley (2006, p. 34) identify staff training with regards to new technologies as an internal factor that influences e-procurement adoption. In addition, Joo and Kim (2004, 97) observed the relationship between technological and human resource investments and the adoption of e-procurement systems and predict a positive relationship between these mentioned factors. Olsen and Boyer (2003, p. 236) have researched the relationship between staff support methods like providing the workforce with annual IT training programs in relation to their perception of using Internet related technologies in the procurement process. However, these authors didn't find a direct relationship between the amount of IT training and employee perception towards e-procurement. In addition, Kuan and Chao (2001, p. 511) state that successful implementation of e-procurement systems requires business to allocate sufficient organizational resources for the development of technical skills and knowledge within the organization.
Soares-Augiar and Palma-dos-Reis (2008, p. 124) define business-to-business know-how as executives' knowledge of managing online procurement and IT infrastructure as technologies that enable Internet-related businesses. The authors identify an organizations technology competence as a driver of e-procurement adoption (p. 124). Technology competence includes both psychical and intangible assets. Physical assets include groupware tools and the intranet. Intangible assets include the managerial expertise to identify and implement the necessary e-procurement solutions (p. 124).

Organizations that have experience with using state-of-the-art technology for productive purposes could be more lenient towards adopting e-procurement software (Crook and Kumar, 1998, p. 78). Organizations with a high degree of IT knowledge, integrate people, technology and organizational factors to achieve business goals (Markus and Keil, 1994).

2.1.3 Task improvements and convenience
Purchase and Dooley (2010, p. 463) identify task improvement and convenience as factors that contribute to the adoption of e-procurement systems. Task improvement and convenience is defined as the transactional efficiencies gained from using e-procurement systems (p. 463). Task improvement comprises several factors that affect the adoption of e-procurement systems, like reduction in cost price, reduced work content, faster purchasing processes (Croom and Brandon-Jones, 2004) and sourcing suppliers with lower pricing structures (Angeles and Nath, 2007). Task convenience comprises factors like the user's perception of e-procurement usefulness and convenience (Purchase and Dooley, 2006).
Croom and Brandon-Jones (2004, p. 370) argue that e-procurement can contribute to higher cost savings, through transactional and process efficiencies. The authors state that reduced process activity and the increased speed of procurement in the total requisition to payment process, are drivers of cost efficiency caused by implementing e-procurement solutions in organizations (p. 370). By optimizing the complete requisition to payment process, purchasing staff can save time and focus themselves on more strategic aspects of procurement, like communicating with procurement officers of the supplier or client and improving supplier relationships (Puschmann and Alt, 2005). Also, e-procurement solutions contribute to cost reductions by providing purchasing professionals with existing supplier contracts within a pre-determined pricing agreement (Purchase and Dooley, 2010, p. 463). Existing contracts with suppliers can reduce maverick buying (purchasing outside of fixed contracts) and prevent procurement personnel to individually negotiate deals with suppliers (Angeles and Nath, 2007). In addition, businesses can achieve cost savings by sourcing the most attractive suppliers by using e-procurement software (Croom and Brandon-Jones, 2004, p. 370). Online catalogues, for instance, can give businesses greater transparency of market prices for certain products and lower search costs and purchasing prices (p.370). Furthermore, the authors state the e-procurement systems are more efficient and reliable method for requisition to order process than semi-automated and manual processes (p. 370).
Purchase and Dooley (2006, p. 35) have observed a direct relationship between perceived benefits by e-procurement users and e-procurement intentions. The authors state that when purchasing professionals perceive that using technologies will make their tasks easier and more convenient, their intention to purchase electronically will most likely increase (p. 35). Olsen and Boyer (2003, p. 233) identify factors like perceived ease of use and perceived usefulness for the adoption of e-procurement. Perceived ease of use is defined as the extent to which the target technology's use or implementation is free from undue effort on the part of the end user (p. 233). Perceived

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usefulness is described, as a potential user's subjective views of the new technology as offering benefits relative to alternative methods of performing the same task (p. 233). Also, previous experience with e-procurement software can influence the perception and motivation of procurement professionals to use e-procurement software in the future (Min and Gale, 2003).

2.1.4 Firm size & industry

Batenburg (2007, p. 187) examined the relationship between firm size and e-procurement adoption. A firm's number of full time employees can be expected to have a positive correlation with e-procurement adoption (p. 187). Firm size can be an indication of an organization's span and scope of activities. The author state that large organizations may have more suppliers and therefore, will benefit more from implementing e-procurement systems, because the number of purchase orders is higher and the purchase portfolio is more diverse in these organizations (p. 187). Furthermore, Batenburg (2007, p. 187) predicts that firm size will positively correlate with an organization's financial resources, because large organizations may have larger budgets to invest in IT and technologies like e-procurement. The costs of implementing e-procurement systems may favor large firms more than small firms, because small firms lack sufficient resources and economies of scale (Joo and Kim, 2004, p. 94). In addition, firm size can be seen as an indicator of an organization's internal span and scope of activities (p. 187). Organizations with many employees, departments and business units could have more benefits of implementing e-procurement, because the need for internal coordination and management in these organizations is larger than in small firms (Batenburg, 2007, p. 187).

Batenburg also states that industry type can be a determinant of e-procurement adoption (p. 187). For instance, the nature of the supply chain and a firm's position within the supply chain can differ between industries (p. 187). Batenburg predicts that organizations that purchase both direct and indirect production goods will benefit more from e-procurement than organizations in other industries. A firm's network embeddedness can also differ per industry. In industries with a high degree of competition between firms targeting similar markets, the benefits of implementing e-procurement will be higher, because cost reduction in these industries is more difficult to accomplish than other industries (p. 187). In addition, organizations in industries that already process large information frequently, will benefit more from implementing e-procurement systems, because IT integration with other businesses processes will be easier and cheaper according to Batenburg (p. 187).

2.1.5 E-procurement intention and hypotheses

Deeter-Schmelz (2001, p. 6) explored innovation adoption by constructing a variable called Internet purchase intent. Internet purchase intent is defined as the extent to which organizational buyers are likely to use the Internet for purchasing activities (p. 6). This research, doesn't only try to gain insight in the intention of organizations, but also observes companies that have already adopted e-procurement solutions in relation to

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the previously mentioned variables. In this research, it is hypothesized that normative pressures and sub variables like, competitive pressure, supplier pressure and customer power will influence e-procurement intention and adoption (Wu et al, 2003). In addition, it is hypothesized that internal support (Purchase and Dooley, 2010) and items like top management commitment (Wu et al., 2007), staff training (Purchase and Dooley 2006, Joo and Kim, 2004), IT infrastructure and business-to-business know-how (Soares-Augiar and Palma-dos-Reis, 2008) will have a positive relationship with e-procurement intention and adoption. Also, it is hypothesized that task improvement and convenience with items like, reduction in cost price, reduced work content, faster purchasing processes (Croom and Brandon-Jones, 2004) and sourcing suppliers with lower pricing structures (Angeles and Nath, 2007) will have a positive relationship with e-procurement intention and adoption. Finally it is hypothesized that firm size will have a positive correlation with e-procurement intention and adoption. The variable industry will be used as a control variable. The hypotheses can be summarized as following:

H1: Firms that perceive e-procurement systems as task improving are more likely to adopt e-procurement solutions, than firms who don't perceive e-procurement systems as task improving.

H2: Firms with high internal support for e-procurement systems are more likely to adopt e-procurement solutions, than firms with low internal support for e-procurement systems.

H3: Firms that are subjected to high normative pressures are more likely to adopt e-procurement systems, than firms that are subjected to low normative pressures.

H4: Firms with a high number of full time employees are more likely to adopt e-procurement solutions, than firms with a low number of full time employees.

2.2 The value of e-procurement solutions
To gain a deeper insight in the customer value of e-business solutions, it is helpful to have a better understanding of the users' perceived value of the offerings provided by Firm X. Zeithhalm (1998) defines customer perceived value as the customer's overall assessment of a product's or a service's utility, based upon the perception on what is received and what is given. This is a value-for-money conceptualization of the value ratio (Sweeney and Soutar, 2001, p. 204). Sheth et al. (1991) identified that the functional value dimension is the key influencer of customer choice. This value construct relates specifically to the perceived utility of choice on the buy or no-buy level (Sheth et al., 1991). Understanding the perceived value of business-to-business e-procurement is especially important for recognizing new types of clients in the market that might use e-procurement solutions. Therefore, the perceived value of Firm X's offerings and total value proposition will be examined in this research, based on the functional value dimension of customer perceived value. A value proposition is a company's overall

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bundle of products and services (Osterwalder, 2004). Value propositions force organizations to focus on what their offerings are really worth to their customers (Osterwalder, 2004). A better understanding of the customer can help companies allocate resources for the development of new offerings or change existing offerings (Osterwalder, 2004). In expanding its current value proposition, Firm X is also interested in a business case for selling software as a service (SaaS). The benefits for clients is that implementing Software as a Service is that all issues concerning server hardware, training, maintenance and installation become the responsibility of the vendor, which results in a lower cost price than traditional software for the client (Waters, 2005). The client receives high quality IT service with clearly understandable costs (Waters, 2005).

Wu et al. (2003) investigated the impact of e-business on SBU performance and identified several e-business functionalities like inbound communication, internal administration, order taking, and procurement. Inbound communication comprises functionalities like providing suppliers with specific order information and sharing the client's product and inventory planning with suppliers. Internal administration comprises functionalities like performing managerial accounting and managing employee benefits. Order taking comprises functionalities like accepting order electronically from customers and allowing customers to track and inquire information about their order. Procurement comprises functionalities like searching for potential suppliers online, placing and tracking orders with suppliers electronically and allowing suppliers to submit bids online. The authors hypothesize that these e-business functionalities may lead to increased efficiency, greater customer satisfaction, improved sales performance and enhanced relationship development (Wu et al., 2003, p. 433). Furthermore, the authors identify two procurement process categories: structured (automated) procurement and unstructured (manual) procurement (p. 170). Structured procurements are used in cases of regular demand with low demand uncertainty and consist of mostly re-orders, whereas unstructured procurements are used in cases of sporadic demand with high uncertainty (p. 171). The results of the research indicate that the value of e-procurement is greater when used for unstructured procurement, which results in transaction cost savings (p. 174).

2.2.1 Value proposition and core competence

Osterwalder (2004, p. 49) describes the term value proposition as the definition of how items of value, such as products and services, as well as complementary value-added services, are packaged and offered to fulfill customer needs. In other words, a company's value proposition is an overall view of a firm's bundle of products and services, which together represent value for a specific customer segment (Osterwalder, 2004, p. 50). Properly constructed, they (value propositions) force companies to rigorously focus on what their offerings are really worth to their customers. Once companies become disciplined about understanding customers, they can for instance make smarter choices about where to allocate scarce company resources in developing new offerings (Anderson et al., 2006 p.92). However, a firm's value proposition can be further

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decomposed into a set of separate offerings. By decomposing its value proposition, a firm can gain better insight in its position relative to competitors (Osterwalder, 2004, p. 50). This can drive the organization to differentiate itself from the competition. A set of offerings together, is called a value proposition (p. 50).

Furthermore, Srivastava et al. (2001) identify customer perceived benefits as a part of customer value. Perceived benefits are intangible factors that customers can perceive before they make their purchasing decision (p. 284). These benefits are advantages that are envisioned by customers. Srivastava et al. (2001, p. 284) refer to these benefits as 'experiential benefits', like perceived reliability, ease-of-use, and triability (Rogers, 1995). Other beneficial factors that can be achieved by buying and using a certain product are factors like security and consistency (Sristava et al., 2001).

Prahalad (1993, 42) states that leveraging corporate resources are an integral process of value creation. The issue for managers is how to create the capacity in organizations to leverage corporate resources (p. 42). The process of resource leverage can be achieved through identifying core competences and core products. Reconfiguration of core products in new and imaginative ways can create new market opportunities and resource leveraging is at the heart of that process (Prahalad, 1993, 42). Core competences are an important link in the process of resource leverage (p. 45). Core competencies are often confused with core technologies and capabilities, which are both components of an organization's core competences. However, core competences are not just technical capabilities, but the organization's capability to creatively bundle multiple technologies with customer knowledge and managing them as a harmonious whole (p. 45). Recognizing that core competences represent the cumulative knowledge base involving a large number of people is essential for understanding core competences. Firm X's core competence can be described as the development of modular procurement software that is able to manage a client's complete procurement process.

Firm X's value proposition is composed of several separate offerings, called 'modules'. These separate offerings are complementary to each other in order for Firm X's clients to manage the complete procurement process. In order to assess the viability of potential new markets for Firm X's value proposition, we have to examine the e-procurement modules more closely. Firm X's modules have been matched and operationalized by using the measurements for procurement functionalities provided by Wu et al. (2003).

Firm X's offerings that will be examined in this research are sourcing, e-procurement, order request module, invoicing, key performance indicator, connect and staffing. The **sourcing** module is being described as a means of communication with potential suppliers to effectively identify the most attractive product they offer for the most favorable conditions using Firm X's software. The sourcing modules can be used for determining a selection of suppliers and also file a request for information and proposal. Suppliers can offer a certain product or service that has been requested by the client using the Firm X Supplier Portal. Firm X then compares the offers from different suppliers to give the client insight in the most attractive offer from suppliers.

The ***e-procurement*** module is being described as a means of automatizing the complete procurement process from requesting an order to controlling and invoicing. Firm X provides control with user authorization on orders, inventory and budgets. Users can determine pricing structures themselves and are being kept up to date about the status of their orders with Firm X's tracking and tracing functionality. In addition, all procurement contracts can be saved, configured and automatized with Firm X's contracts management functionality.

Firm X's ***order request module*** enables users to place unauthorized requests of orders via the Firm X Portal. Orders placed by users are directed to the suppliers system, where the supplier has the option to accept and fulfill the placed order. Firm X advertises the ORM module as a valuable add-on to the e-procurement module. The order request module helps procurement professionals to manage the communication process with suppliers concerning the requested orders.

The ***invoicing*** module is being described as a module that automatizes the entire invoicing process from the initial reception of the invoice to the payment process. Firm X's software matches the electronic invoices provided by suppliers with the ordering information of the placed order and directs the invoice to an organization's financial systems. Firm X argues that this module saves businesses time and costs concerning the invoicing process.

The ***key performance indicator*** module is a module that measures a company's financial and organizational performance. Firm X's KPI software enables users to define key performance indicators, determine goals, track performances and compare the goals that are set with actual results. The KPI module provides users with the possibility to track real-time performance of suppliers. Firm X argues that setting key performance indicators in corporation with suppliers stimulates suppliers to be more professional in the relationships with their customers and work towards a common goal.

Firm X's ***connect*** module enables companies to couple their procurement information to financial and administrative back-office systems. This module ensures the integration of processes and systems that help organizations easily exchange procurement information with other parts of the business. The connect module is easily configurable and can be integrated with various financial systems, because of the use of the most common standards and ERP systems.

Firm X's ***staffing*** module is being described as a module that supports the complete process of hiring new staff members. Firm X's software can be used to connect with employment agencies and also digitally manage employee salaries and other administrative processes concerning the workforce. Firm X argues that organizations can significantly reduce costs of temporary personnel by simplifying and digitalizing the administrative process using Firm X's software.

Firm X is also interested in future trends like providing companies with ***Software as a Service*** (SaaS). Software as a service is defined in literature as a software application that runs on the vendor's datacenter (Waters, 2005, 33). However, the software appears to the user to be part of the customer's internal IT network (p. 33). Implementing

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Software as a Service has certain benefits compared to traditional applications that are part of the user's IT network. However, evaluating a business case for implementing Software as a Service depends on certain organizational factors, because a SaaS solution may not be appropriate for every business. Waters (2005, p. 37) recognizes that the benefits of implementing SaaS increased when applications are used by a large number of people and their geographic locations are widely dispersed. In other words, the benefits of SaaS are higher when the software requires a large *organizational reach*. Also, the *required integration* with an organization's existing IT department is important for assessing the business case for software as a service (p. 38). If an organization's older software tends to use tightly coupled integration, the implementation of software as a service often needs special code to be written around the older software. In these cases, implementing software as service may not be a good fit.

Software as service vendors can also provide organizations with *security standard* that exceed internal security standards with the help of a robust database infrastructure. However, some organizations prefer and feel more secure if they physically posses all data. Implementing software as a service in these organizations may also not be a good fit. Another important factor for implementing SaaS is the *velocity of updates* needed from the implemented e-business software. Software as a service can have unique benefits for applications that require a high update velocity, because the vendor can keep all information automatically current and up-to-date.

This research will determine procurement officers' perceived value of the modules provided by Firm X. Also, a business case for providing software as a service will be researched by investigating the current trends in companies concerning organizational reach of procurement software, required IT integration, security needs and velocity of updates.

2.3 Partner networks in the value chain

Firm X sells its procurement software products via essential partners that are highly specialized in the implementation of the software at end-users. These partners are part of Firm X's value chain and network strategy. These kinds of networks are a competitive alternative to vertically integrated steps in the value added chain (Larson, 1991, p. 173). The network strategy of building close collaborative alliances with a limited set of suppliers enables a firm to stabilize itself while remaining flexible and responsive to a changing market (Larson, p. 173). The challenge for Firm X is to identify the right selling partners that can help the company distribute its offering.

One of the most important aspects for the success of partnerships identified by Sarkar et al. (2009, p. 360) is resource complimentary. The results of the authors show that resource complimentary of firms influences both project performance and strategic performance (Sarkar et al., 2009, p. 368).

Varis et al. (2003), have done research on partner selection within software companies and focus themselves on the selection of marketing and distribution partners. These authors have developed the so-called 'SOFTPRO' model of partner selection (Varis et al., 2003, p. 31). The 'SOFTPRO' model is meant for supporting practical decision making (p.

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31). The SOFTPRO model consists of several criteria, like (1) business criteria, (2) marketing criteria, (3) partner-potential criteria and (4) technical criteria. Business criteria include issues like the company's history, financial situation, industry focus and target market. Marketing criteria cover existing contacts with potential customers and marketing functions. Partner-potential include third-party certificates and the future potential of the partner. Technical criteria consist of the firm's ability to provide the end-user with customer support and expertise in e-commerce related applications.

Chapter 3: Methodology

3.1 Research design
In this research, a cross-sectional study has been carried out. The cross-sectional research design involves observations of a sample, or cross section, of a population or phenomenon that are made at one point in time (Babbie, 2007, p. 106). Cross-sectional research designs are often used in descriptive studies, as well as in explanatory studies (Babbie, 2007, p. 106). Since the objective of this study is to describe current trends of e-procurement adoption, observing a phenomenon in one point of time is suitable and observations in longer periods of time are not necessary. The research design is aimed at better understanding customer values with regards to e-procurement, e-procurement adoption intention in different market segments and industries. Data has been gathered about procurement departments of companies in different industries using quantitative methods. Quantitative methods are especially useful for aggregating, comparing and summarizing large amounts of data and open up possibilities for statistical analysis (Babbie, 2007, p. 24).
Information has been gathered by sending an online survey in July 2012 using Google Docs software, which gave the respondents the chance to respond in the most convenient and suitable situation. Collecting information using surveys is a popular research method for studying attitudes and orientations of individual people as units of observation in large populations (Babbie, 2007, p. 254). Self-administered online surveys are particularly useful in describing the characteristics of a large population (Babbie, 2007, p. 287). Furthermore, online surveys are recognized as a suitable method for marketing research (Babbie, 2007, 284). Self-administered online surveys are also cheaper method of collection data than interview surveys, which is particularly important for the research design of unfunded students (p. 284). Although online surveys can provide sufficient customer data, survey-sampling methods should be used to prevent sending surveys to irrelevant respondents (Babbie, 2007, p. 284). A carefully selected sample in combination with a standardized questionnaire offers the possibility of making refined descriptive assertions about populations (p. 287). The respondents for the survey were procurement managers and employees working in the procurement department. The respondents represent their respective organizations, which are the units of analysis in this research. Procurement professionals are chosen as respondents, because they are competent to answer the questions (Babbie, 2007, p. 258). Also,

questions about sensitive issues, like a company's financial situation, are left out of the survey to ensure a high response rate.

In this research, data has been analyzed using descriptive statistics and executing a regression analysis. Descriptive statistics are used in order to establish a view on the most attractive segments of future clients for Firm X's e-procurement solution. Descriptive statistics are a generally accepted form of data analysis for market research (Babbie, 2007, p. 467). Also, a regression analysis is used to test the hypotheses and the theoretical model, in order to determine causal relationships between variables. The software used for the statistical analysis was SPSS 20.

The survey has been developed with the feedback of researchers at the University of Twente and Firm X's marketing professionals. Firm X's employees shared comparable characteristics with the respondents that were part of this research. The survey has been adapted to the feedback of these two groups, before a definitive version was sent to the procurement professionals.

3.2 Case selection and sampling
The cases that have been studied in this research are procurement professionals from companies in different industries in the Netherlands. The method of purposive sampling has been used to select respondents. This kind of sampling is a non-probability sampling in which the units to be observed are selected on the basis of the researcher's judgment about which ones will be the most useful or representative (Babbie, p. 193). To ensure a representative population of procurement professionals, respondents were selected in six different LinkedIn groups. A total of 880 procurement employees have been selected to participate in the survey. These respondents were members of the LinkedIn groups called the Dutch Procurement Network, INSINC Procurement, Procurement Professionals, Jobs in Supply Chain, Inkoop & Logisitiek and Inkoopfacility Benelux and NEVI. The survey has been e-mailed to the selected managers via LinkedIn. The selection criterion of respondents in this research was the position employees they held in their respective companies and its relevance to procurement. The most common positions the respondents held in this research were procurement manager and procurement employee. The sample population consisted of 128 managers, which is a response rate of roughly 15 percent. This rather large number of respondents contributes to the external validity of the research. The basic findings of this research will be shared with the respondents, as a way to stimulate the respondents to fill in the survey. Also, several prices were given away to ensure a high response rate. Sending a second e-mail as a reminder to respondents was not perceived as viable in this research, because all e-mails had to be sent manually to a large number of participants. Since all questions in the survey were required to fill in before submission, there is no missing data in this research.

3.3 Research instruments
The measured variables and constructs in this study are mainly adapted from previous literature and research. The measurement methods used in this research were in the

form of five-point Likert- scales, close-ended questions, nominal measures and ordinal measures. Likert-scales are used in social research to improve the levels of measurement through the use of standardized response categories in survey questionnaires (Babbie, 2007, p. 180). The respondents were asked closed-questions, because closed questions provide a greater uniformity of responses and are more easily processed and analyzed than open-ended questions (Babbie, 2007, p. 256). Questions were predominantly asked in multiple-choice format for convenience reasons. The following section will discuss the measures that have been used in this research and their composition, as well as their scientific reliability.

The variable normative pressure measures the institutional pressures caused by the amount of entities that have already adopted these innovations and is composed of three constructs: competitive pressure, supplier pressure and customer pressure. Normative pressure has been measured by using existing scales from Wu et al. (2003), Soares-Augiar and Palma-dos-Reis (2008), Deeter-Schmelz et al. (2001) and Purchase and Dooley (2006).

Competitive pressure is measured by using two items adapted from Soares-Augiar and Palma-dos-Reis (2008). These items measure current extent of e-procurement adoption by competitors and the perceived success from e-procurement adoption by competitors. Supplier pressure is measured by using three scales adapted from Soares-Augiar and Palma-dos-Reis (2008), Purchase and Dooley (2006) and Deeter-Schmelz et al. (2001). These items measure trading partner readiness, disadvantaged contract terms and expected participation of suppliers in short term.

Customer power is measured by using three items adapted from Wu et al. (2003). These items measured customer's emphasis on innovativeness, customer's perception of e-procurement adoption and customer's fear of not being up-to-date with the newest technologies.

The variable internal support measures internal organizational forces that boost the adoption of e-procurement systems. Internal support has been measured by four existing scales and five items adapted from Wu et al. (2003), Purchase and Dooley (2006) and Soares-Augiar and Palma-dos-Reis (2008). The scales that have been used were staff training, business-to-business know-how, IT infrastructure and top management commitment.

The variable task improvement and convenience is described as the transactional efficiencies gained from using e-procurement systems. Task improvement and convenience is measured by using three existing scales from Purchase and Dooley (2010). The scales that were used were reduction of time spent with sales people, convenience of online catalogues and convenience of e-procurement.

The variables firm size and industry were measured by using existing scales from Batenburg (2007). The variable e-procurement intention was measured by using existing scales from Deeter-Schmelz (2001).

The perceived value of several e-procurement functionalities was measured by adapting four existing scales from Wu et al. (2003). The existing scales were composed of the functionalities order taking (measured by three items), procurement (measured by four

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items), inbound communications (measured by 4 items) and internal administration (measured by three items). The measured items have been matched with the value proposition and modules offered by Firm X in this research to determine the perceived value of the offered modules.

Procuro's modules	E-business functionality measurement (Wu et al., 2003)
Sourcing module	- Search and locate potential suppliers online - Allow suppliers to submit bids online - Use online marketplaces to source supplies
E-procurement module	- Place and track orders with suppliers electronically - Accept orders electronically from customers - Allow customers to track and inquire about their orders electronically
KPI module	- Perform financial and managerial accounting
Staffing module	- Provide reimbursements and manage payrolls - Manage employee benefits
Order Request module	- Provide specific online information about product specifications that our suppliers must meet - Request order that are not included in the online catalogue
Invoicing	- Providing electronic invoicing automatically
Connect	- Share product and inventory planning information with our suppliers - Permit suppliers to directly link up to our databases

Table 1: E-business functionality measurement

Furthermore, the functionality 'software as a service' was measured by using four existing scales from Waters (2005). The measured scales were organizational reach, required integration, security standards and the velocity of updates.
Also, the current extent of structured procurement use versus unstructured procurement use has been measured in this research by creating new scales based on the research of Subramaniam and Shaw (2002).

3.4 Reliability of measures
In this section, the reliability of the measured items and scales will be determined before analyzing the results in the next chapter. Data from 128 respondents has been collected and missing data has not been found in this research. Cronbach's alpha was used to test the reliability of all scales. Nunally (1978), states that items that score above the cut-off of 0.7 are generally acceptable. However, Jenkinson et al. (1994) state that a Cronbach's alpha above the 0.5 cut-off is also acceptable in some cases. The reliability of all items has been tested using SPSS software.

Variable	Reliability: Cronbach's α (n= 128)
Normative pressure	0.732 (8 items)
- *Competitive pressure*	

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- *Supplier pressure* - *Customer power*	
Task improvement and convenience	0.687(5 items) *(1 item deleted)*
- *Reduction of time with sales people* - *Convenience of online catalogues* - *Convenience of e-procurement*	
Internal support	0.787 (5 items)
- *Staff training* - *Business-to-business know-how* - *IT infrastructure* - *Top management commitment*	
Order taking	0,909 (3 items)
- *See table 1*	
Procurement	0.659 (3 items) *(1 item deleted)*
- *See table 1*	
Inbound communication	0.705 (4 items)
- *See table 1*	
Internal administration	0.798 (3 items)
- *See table 1*	
Software as a service	0.600 (4 items)
- *Organizational reach* - *Required integration* - *Security standards* - *Velocity of updates.*	
Procurement structure	0.712 (3 items)
- *Order variance*	

Table 2: Reliability of measures

It appears from table 2 that most items, which measured the variables, were reliable (higher than 0.7) with the exception of the items that measured software as a service. However, because of the value of the variable software as a service for this research, the variable has not been deleted entirely from this research. Furthermore, several items were deleted to ensure a higher reliability in measurement. The deleted items from the variable task improvement were items that measured the perceived cost/ benefit ratio from using e-procurement. The deleted item from the measured procurement functionality was allowing suppliers to submit bids online.

Chapter 4: Results

The following section is dedicated towards gaining more insight in the results of this research. In the first part of this section, we will examine descriptive statistics about the sample in this research. In the second part of this section, the results of the variables normative pressure, internal support and task improvement and convenience will be described and summarized. Also, the perceived value of Firm X's modules will be

described in general, after which we will take a closer look at the perceived value of Firm X's modules in different industries and types of organizations. Future modules or functionalities like Software as a Service will also be examined in different industries, as well as organizations' procurement order variance. In the second part, the validity and significance of the theoretical model will be tested statistically. A regression analysis will be used to test the hypotheses and gain insight in the statistical relationships between the variables normative pressure, internal support, task improvement and e-procurement adoption.

4.1 Descriptive statistics

Table 3 highlights the positions held by the respondents in their respective companies. Most respondent held the position of 'procurement manager' in their companies (42%), followed by head of procurement (24%), procurement employee (17%), consultant (7%), other (7%) and CEO (3%). The positions of the respondents differ in terms of the level of knowledge about operations and power in the organization. Considering the questions, which were asked about the subject of procurement in organizations, the percentage of respondents who have knowledge about this subject is relatively high (81%). This is especially relative for representativeness of the units of observation for the units of analysis, in this case companies.

Position in company	(N=128)	Percentage
Head of procurement department	31	24%
Procurement manager	55	42%
Procurement employee	22	17%
Consultant	9	7%
CEO	3	3%
Other	8	7%

Table 3: Position in company

Table 4 highlights the distribution of the respondents' firm size of the organization they are currently employed in. In table 4, the number of full time employees indicates firm size. Companies that participated in this research employed mostly more than 250 full time employees (64,8%), followed by companies with less than 50 fte (15,6%), 51-100 fte (10,9%), 201-250 fte (7%) and 101-200 fte (1,6%). The distribution of firm size isn't equally distributed, due to the purposive sampling technique that was used.

Full time employees	Frequency	Percentage
< 50 fte	20	15,6 %
51-100 fte	14	10, 9 %
101- 200	2	1.6 %
201- 250	9	7 %
> 250	83	64,8
Total	128	100 %

Table 4: Full time employees

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Table 5 indicates the entity type of the companies that participated in this research. Private organizations are represented the most in this research (76,6%), followed by public organizations (17,2%) and semi-public organizations (6,3%). It's clear from table 5 that entity type is also not equally distributed among cases.

Entity type	Frequency	Percentage
Private organization	98	76.6 %
Public organization	22	17.2%
Semi-public organization	8	6.3 %
Total	128	100 %

Table 5: Entity type

Table 6 highlights the industries of the companies that were analyzed in this research. The distribution of industries can be observed as equal, with the exception of the textile and tourist industries. The Service industry was represented the highest (25%), followed by the ICT industry (15%), Transport (14%), Chemical (12%), Retail (11%), Health (10%), Electronic (10%), Tourist (2%) and the Textile industry (1%). An equal distribution of industries helps this research in assessing the value of e-procurement modules across different, but equally represented industries. The Textile and Tourist industries can't be analyzed in this research, since there were too few respondents representing these industries to ensure the validity of the statistical analysis.

Industry	Frequency	Percentage
Chemical	16	12%
Service	32	25%
Electronic	13	10%
Health	13	10%
ICT	19	15%
Retail	14	11%
Textile	1	1%
Tourist	2	2%
Transport	18	14%
Total	128	100%

Table 6: Industry

4.2 Descriptive statistics of regression variables
The variable task improvement and convenience was measured with six items on scale of 1 to 5, of which item six was deleted from the regression analysis. This research measured managers' perception on e-procurement's task improvement and convenience, which is described as the transactional efficiencies gained from using e-procurement systems. The item that measured e-procurement reduction of time on communication equaled a relatively high mean score of 3,81. The item that measured e-procurement making purchasing easy for sales people equaled a relatively high mean

score of 3,87. E-procurement making purchasing more convenient for sales people was measured with a moderately high mean score of 3,47. Furthermore, expenses exceeding benefits was measured with a mean score of 3,29, followed by expenses for implementation (M=3,20) and savings in cost prices (M=3,10). The overall mean of the variable task improvement and convenience measured a moderately high mean score of 3,41.

Task improvement	Mean
E-procurement reduces the time of employees spent on communicating with sales people of other companies	3.81
E-procurement makes purchasing more easy for sales people	3.87
E-procurement makes purchasing more convenient for sales people	3.47
E-procurement contributes to savings in cost prices by sourcing more competitive suppliers.	3.10
E-procurement is expensive to implement in the organization	3.20
Expenses far exceed the benefits of e-procurement	3.29

Table 7: Task improvement

The variable internal support measures internal organizational forces that boost the adoption of e-procurement systems and was measured with five items on a scale of 1 to 5. Support for employee training for the use of e-procurement systems equaled a mean score of 3,21, followed by top managers emphasis on new technology adoption (M=2,78), managers' knowledge of e-procurement needs (M=2,47), managers' knowledge of e-procurement implementation (M=2,32) and e-procurement becoming obsolete (M=1.95). The overall mean of the variable internal support was measured with a moderately low mean score of 2,74.

Internal support	Mean	Std. Dev.
Employees are provided with enough staff training for the use of e-procurement systems.	3.21	1.08
Managers know exactly how e-procurement software must be implemented	2.32	0.98
Top managers in our SBU continuously emphasize that our SBU must adapt to the Internet-related market trends.	2.78	1.03
Managers know exactly which e-procurement solutions meet the company's needs the best.	2.47	1.04
E-procurement is merely a hype and will soon be obsolete.	1.95	1.02

Table 8: Internal support

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Normative pressures	Mean	Std. Dev.
E-procurement solutions contribute to the success of our competitors.	2.86	1.08
Our competition has adopted e-procurement solutions.	3.02	0.98
Our trading partners and /or suppliers are prepared to make use of e-procurement solutions.	3.23	1.03
More suppliers are expected to participate within 12 months	3.25	1.04
Our suppliers offer disadvantaged contract terms if a product is not ordered via e-procurement systems.	2.30	1.02
It is important that we are seen as a cutting edge business that adopts innovative technologies.	3.11	1.15
Many of our customers are keen that our SBU should implement e-business practices.	2.50	1.09
Our customers may consider us as backward if we do not implement e-business initiatives.	2.55	1.10

Table 9: Normative pressure

The variable normative pressure measures the institutional pressure that arises from a threat of lost legitimacy and was measured with eight items on a scale of 1 to 5. Supplier participation within 12 months equaled a mean score of 3,25, followed by trading partner readiness (M=3,23), importance of new technology adoption (M=3,11), competitor adoption (M=3,02), contribution to competitor's success (M=2,86), considered backward by competition (M=2,55), customer pressure on new technology adoption (M=2,50) and disadvantaged contract terms (M=2,30). The overall mean score of the variable normative pressure equaled a moderately low mean score of 2,85. Looking at the variables task improvement, internal support, normative pressure and e-procurement adoption, we found some interesting results. The highest means for task improvement were found for the ICT industry (M= 3,75), Health industry (M=3, 53) and Service industry (M=3,42). The lowest score on task improvement was in the Retail industry (M=2,95). The highest mean scores on internal support were in the ICT industry (M=3,37), Health industry (M=3,09) and Transportation industry (M=2,83). The lowest was in the Retail industry (M=2,32). The highest mean scores on normative pressure were in the ICT industry (M=3,28), Service industry (M=2,88) and Health industry (M=2,87). The highest score on e-procurement adoption were in the ICT industry (M=4,16), Health industry (M=4,07) and Service industry (M=4,03). The overall score on e-procurement adoption equaled to relatively high mean score of 3,93.

Industry	Task improvement (Mean)	Internal support (Mean)	Normative pressure (Mean)	E-procurement intention (Mean)
Chemical	3,41	2,41	2,55	3,68
Service	3,42	2,65	2,88	4,03
Electronic	3,2	2,38	2,87	3,92
Health	3,53	3,09	2,87	4,07
ICT	3,75	3,37	3,28	4,16
Retail	2,95	2,32	2,57	3,71

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Transport	3,35	2,83	2,71	3,77
Total	3,41	2,74	2,85	3,93

Table 10: Factors per industry

Looking at firm type specific statistics we see that public organizations score the highest mean on task improvement (M=3,55), internal support scores the highest on semi-public organizations (M=3,00), normative pressure scores the highest on public organizations (M=2,94) and e-procurement adoption is the highest in semi-public organizations (M=4,37).

Firm type	Task improvement	Internal support	Normative pressure	E-procurement intention
Private	3,39	2,69	2,84	3,86
Public	3,55	2,89	2,94	4,09
Semi-public	3,22	3,00	2,70	4,37
Total	3,41	2,74	2,85	3,93

Table 11: Factors per firm type

4.3 Descriptive statistics of Firm X's modules

In this section, the value of Firm X's modules will be assessed in order to gain more insight in the company's offerings and total value proposition. The modules will also be analyzed across different industries and firm types. Before analyzing Firm X's specific modules, we will analyze the perceived value of some general e-business functionalities provided by Wu et al. (2003).

We can observe from table 12 that the highest rated e-business functionalities were order taking (M=3,72) and procurement (3,59). The lowest rated e-business function was internal administration (M=2,96).

	Mean	Std. Dev.
Procurement	3,59	0,70
Order Taking	3,72	0,98
Internal Administration	2,96	0,96
Inbound Communication	3,48	0.77

Table 12: General e-business functionalities

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The most valued module by 128 managers was the e-procurement module with a mean of 3,94, followed by the invoicing module (M=3,85), the connect (interfacing) module (M=3,71), the KPI module (M=3,69), order request module (M=3,45), sourcing module (M=3,37) and staffing module (M=2,59).

Value of Firm X's modules	Mean	Std. Dev.
Sourcing module	**3.37**	**0.86**
E-procurement module	**3.94**	**0.80**
KPI module	**3.69**	**1.05**
Staffing module	**2.59**	**1.12**
Order request module	**3.45**	**0.91**
Invoicing module	**3.85**	**1.07**
Connect (Interfacing) module	**3.71**	**0.91**
Software as a Service	**3.46**	**0.75**
Total	**3.51**	**0.59**

Table 13: Perceived value of Firm X's modules

If we observe Firm X's modules and the industries they are valued in, we see that the sourcing module is rated the highest in the ICT (M=3,82) and Service (M=3,45) industries. The e-procurement module is rated highest in the Transport (M=4,11) and Health (M=4,05) industries. The KPI module is rated the highest in the Retail (M= 4,00) and Transport (M= 3,83) industries. The staffing module is rated the highest in the ICT (M=3,00) and Retail (M=3,00) industries. The order request module is rated the highest in the ICT (M=3,65) and Health (M=3,57) industries. The invoicing module is rated the highest in the Electronic (M=4,07) and Service (M=4,03) industries. The connect module is rated the highest in the Electronic (M=4,03) and Retail (M=3,82) industries. The highest need for Software as a Service was in the Retail industry (M=3,66).

Industry	Sourcing	E-procurement	KPI	Staffing	Order request	Invoicing	Connect	SaaS	Total
Chemical	3,08	3,56	3,56	2,31	3,25	3,06	3,53	3,53	3,23
Service	3,45	3,87	3,59	2,45	3,50	4,03	3,67	3,35	3,49
Electronic	3,41	3,84	3,38	2,34	3,42	4,07	4,03	3,38	3,48
Health	3,25	4,05	3,76	2,53	3,57	4,00	3,81	3,44	3,55
ICT	3,82	4,03	3,63	3,00	3,65	3,78	3,50	3,36	3,6
Retail	3,02	4,00	4,00	3,00	3,21	3,85	3,82	3,66	3,57
Transport	3,14	4,11	3,83	2,63	3,27	3,88	3,63	3,58	3,51
Total	3,37	3,94	3,69	2,59	3,45	3,85	3,71	3,46	3,51

Table 14: Perceived value of modules per industry

If we take a look at the most valuable modules provided by Firm X per industry, we see that the most valuable modules in chemical industry are the e-procurement module

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(M=3,56) and the KPI module (M=3,56). The most valuable modules in the Service industry are invoicing (M=4,03) and e-procurement (M=3,87). The most valuable modules in the Electronic industry are invoicing (M=4,07) and connect (M=4,03). The most valuable modules in the Health industry are e-procurement (M=4,05) and invoicing (M=4,00). The most valuable modules in the ICT industry are e-procurement (M=4,03) and sourcing (M=3,82). The most valuable modules in the Retail industry are e-procurement (M=4,00) and KPI (M=4,00). The most valuable modules in the Transport industry are e-procurement (M=4,11) and invoicing (M=3,88).

The most valuable modules for private organizations were e-procurement (M= 3,91) and invoicing (M=3,85). This was also the case for public organizations, respectively (M=4,16) and (M=4,04). The most valuable modules for semi-public organizations were e-procurement (M=3,58) and KPI (M=3,50).

4.4 Regression analysis

In this section, the causal relationships of the variables in the constructed theoretical model will be tested. Four hypotheses have been formulated and will be tested statistically by executing a regression analysis. The results of the theoretical model have been indicated in table 16. The results show the generated path coefficient 'Beta' (β) for analyzing directions of causality and t-values that will be used to establish the significance of the analyzed relationships on the conventional levels of $p < 0.05$, $p < 0.01$ and $p < 0.001$.

Hypothesis 1 investigated the relationship between task improvement and e-procurement adoption. The results indicate that task improvement has a significant positive relationship with e-procurement adoption (β= 0.215, p< 0.05). *Thus H1 is supported on a significance level of 5%.*

Hypothesis 2 investigated the relationship between internal support and e-procurement adoption. The results indicate that internal support has a significant positive relationship with e-procurement adoption (β=0,342, p< 0.001). *Thus H2 is supported on a significance level of 0.1%.*

Hypothesis 3 investigated the relationship between normative pressure and e-procurement adoption. The results indicate that normative pressure has a significant positive relationship with e-procurement adoption (β=0,247, p< 0.01). *Thus H3 is supported on a significance level of 1%.*

Hypothesis 4 investigated the relationship between firm size and e-procurement adoption. The results indicate that firm size has a significant positive relationship with e-procurement adoption (β=0.184, p< 0.05). *Thus H4 is supported on a significance level of 5%.*

Additional hypotheses that were tested in request of Firm X's managerial board were the relationships between normative pressure, task improvement and internal support. Also the relationship between firm size and need for Software as a Service has been tested. The results show a significant positive relationship between normative pressure and internal support (β=0,373, p< 0.001) and a significant positive relationship between task improvement and internal support (β=0,365, p< 0.001). Also a significant positive

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relationship has been found between firm size and the need for Software as a Service (β=0,189, p< 0.05).
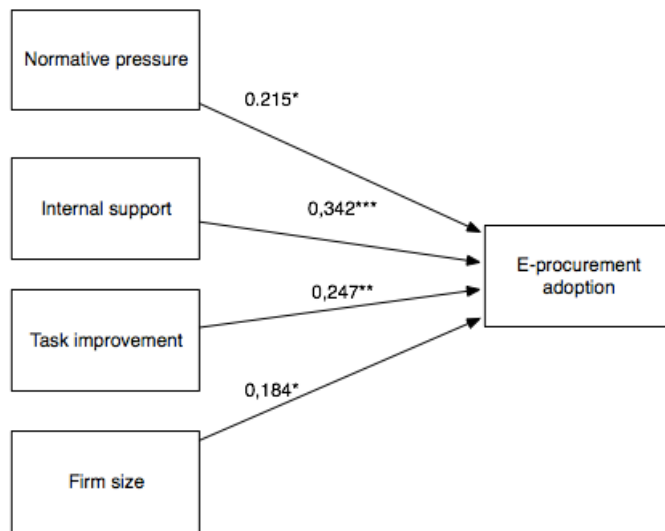
*p < 0,05, ** p < 0,01, *** p< 0,001; df = 126; goodness of fit = χ^2/df = 1,86, R^2= 0,186*

Fiqure 1: Theoretical model

Hypotheses	Beta	Robust T-value	S.E.
H1: Task improvement → e-procurement adoption	0,215	2,46	0,17
H2: Internal support → e-procurement adoption	0,342	4,06	0,14
H3: Normative pressure → e-procurement adoption	0,247	2,84	0,19
H4: Firm size → e-procurement adoption	0,184	2,09	0,076
Additional H5: Normative pressure → internal support	0,373	4,518	0,108
Additional H6: Task improvement→ internal support	0,365	4,397	0,095
Additional H7: Firm size → SaaS	0,189	2,162	0,041

Table 16: Hypotheses

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Chapter 5: Discussion

In this section, we will discuss the results more in-depth and see if the findings are in line with the initial expectations of this research.

First, all tested relationships between variables turned out to be significant and were in line with the expectations in the theoretical framework. The higher a company's perception of e-procurement improving daily tasks like, communicating with sales people, the higher an organizations e-procurement intention will be. This is due to the fact that e-procurement can help clients find products with lower cost prices and reduce work content procurement professionals. The relationships between normative pressure and e-procurement intention also proved to be significant. This is caused the institutional pressures, or the amount of entities that have already adopted e-procurement in the same industry. Another significant positive relationship was between internal support and e-procurement. This can be explained by the fact that a high commitment to implementing new technologies and e-procurement knowledge of top managers inside the organization lead to higher e-procurement intentions. Providing procurement personnel with sufficient training to use e-procurement solutions plays also a role in e-procurement intention. Finally, firm size has a positive relationship with e-procurement intention. This is due to the fact that large organizations often have sufficient financial resources for the implementation of e-procurement systems. Also, organizations with a high number of employees and department units have more benefits of implementing e-procurement, because the need for internal coordination in these organizations is relatively high. Observing the chosen variables in different industries, we see that the means differ per industry and firm type. This is an interesting result, because it makes it possible to state that certain industries and firm types are more likely to adopt e-procurement systems than others. Explanations for these observed differences per industry could be that the nature of the supply chain and a firm's positions in the supply chain can differ between industries, which could stimulate more intensive use of e-procurement systems in certain industries over other industries. The ICT industry came forward as the industry with the most positive perception about the use of e-procurement systems. This finding is in line with the finding of Batenburg (2007). Batenburg explains that firms in the ICT industry often produce and consult about IT applications and are intensively organized around testing and applying ICT products and services (Batenburg, 2007, p. 188). A finding that seems to be contradictory with Batenburg's findings is that there is relatively low support for the adoption of e-procurement systems for Retail companies. Batenburg states that procurement is a primary activity of retail companies and an intensive use of e-procurement applications can be expected (p. 188). This contradiction can be partly explained by pointing out that, although the Retail industry had low e-procurement intentions, companies in this industry rated the value of Firm X's modules the highest. Also, e-procurement intentions seem higher in public organizations than in private organizations. This can also be explained by the large number of employees working in public organizations and the high number of departments in these organizations. Public organizations could have a high degree of bureaucracy, in which case e-procurement

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systems can be particular useful in reducing costs and improving the daily tasks of employees.

In addition, the value of the modules provided by Firm X was rated higher in certain industries and firm types than others. This could be an indication that e-procurement systems are perceived as more useful in certain industries than in others. This could again be related to the nature of the supply chain and processing large amounts of information in certain industries than in others.

Furthermore, additional hypotheses were tested to examine the results between the variables normative pressure, task improvement and internal support. The results have shown that, while these variables are positively related to e-procurement adoption independently, they also significantly influence each other. Also the relationship between firm size and the need for Software as a Service was investigated. The results have shown that larger firms are more likely to adopt SaaS solutions than smaller firms.

Chapter 6: Conclusions and implications

This section is dedicated to present the reader with the final research conclusions that can be drawn from the results and advising Firm X in how the company should target new markets for e-procurement software. First, we will elaborate on the sub questions, before we answer the main research question. The sub questions were proposed to discover the factors that contribute to e-procurement adoption and to gain insight in the perceived value of Firm X's modules in different industries and firm types.

6.1 Which factors contribute to the adoption of e-procurement systems by firms?

In this research, the factors normative pressure, internal support, task improvement and firm size were analyzed in relation to e-procurement adoption intention. The results of this research show that all analyzed factors were positively related to e-procurement intention. Normative pressure relates positively to e-procurement intention, which means that the higher the institutional pressure by external forces is, the higher the e-procurement adoption by clients will eventually be. Institutional pressures are caused by the client's perception that competitors have already obtained competitive advantage by using e-procurement and that a large number of suppliers and customers have already automatized their operations with e-business software. The findings show that, although the average normative pressure is relatively low in all industries, there are differences in normative pressures between industries. Therefore, Firm X should market its modules in industries and firm types where the normative pressure is the highest, because this will lead to higher chance of e-procurement adoption. These industries are respectively the ICT industry, Service industry and the Health industry. In marketing its modules, Firm X should emphasize the rate of competitors in the industry that already use e-procurement and the rate of suppliers that are willing to participate in these kinds of innovations in order to convince potential customers and managers.

In addition, the more convinced managers are about e-procurement improving daily tasks of procurement professionals, the higher their intention of adopting these systems will be. It is important to note that managers did perceive e-procurement systems to be

time reducing and a convenient solution for procurement professionals. Therefore, it is advised to market these benefits as core benefits for targeted organizations in Firm X's marketing strategy. Also, if we take the scores on task improvement as the only criteria to select new markets, Firm X should target the ICT industry, Service industry and Health industry, because these industries score the highest on e-procurement's task improving capabilities. Firm types that should be targeted are public organizations, because the perceptions of public organizations on e-procurement's task improving capability are the highest between all firm types.

In addition, we see that the internal support in organizations for e-procurement solutions differ between industries. The results show us that in the current landscape, internal support for e-procurement solutions seems relatively low. This means that managers have a relatively low commitment to implement e-procurement solutions. Managers also lack knowledge about what e-procurement functionality is needed in their organization and how these systems should be implemented. This could be a challenge for Firm X when in selling its modules. A solution seems to highlight e-procurement's task improving capabilities to inform and convince managers of the benefits of e-procurement. However, when managers were asked if e-procurement solutions were a hype that would soon be obsolete, the majority of the managers disagreed with this statement. This indicates that there is still a business opportunity for Firm X, even when the internal support in organizations is relatively low. The highest scores for internal support were in the ICT industry, Health industry and Service industry. This means that Firm X should market its modules to companies in these industries. The findings show us again that internal support for e-procurement solutions was the highest in public organizations.

Firm size is also positively related to e-procurement intention. This has also implications for the Firm X's marketing strategy. Firm X should target large organizations to sell its modules to. Large organizations have the highest need for e-procurement solutions and have sufficient financial resources to implement new systems. Using the database of CBS, we see that the largest organizations in the Netherlands are public organizations and are in the Transport, Mineral, Health and Education industries.

In addition, if we observe the variable e-procurement intention, we can see that intentions differ between industries. The industries with highest adoption intentions are again the ICT, Health, Service and Electronic industries. This research indicates that companies in these industries are the companies who are planning to adopt e-procurement systems earlier than companies in other industries.

6.2 What is the perceived value of Firm X's modules in different industries with regard to e-procurement solutions?

This paper also examined the managers' perceived value of Firm X's modules in different industries. The perceived value of the modules Sourcing, E-procurement, KPI, Order Request, Staffing, Invoicing and Connect (Interfacing) was investigated. This was done to assess the Firm X's separate offerings and total value proposition. The results of this research show that, on average, the top three highest rated modules were respectively

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the E-procurement, Invoicing and Connect modules. The lowest rated modules were the Staffing and Sourcing modules. This could have implications for Firm X's marketing strategy and on how Firm X should construct its value proposition. In developing its marketing strategy, Firm X should advertise the most popular modules to its customers. Also, Firm X could decide to focus on the development of the most popular modules and decrease the amount of organizational resources dedicated to the development of less popular modules, like Staffing and Sourcing. In addition, this research examined the perceived value of modules in different industries. The results indicate that Firm X should advertise the benefits of the E-procurement and KPI modules to companies in the Chemical industry. To companies in the Service industry, the benefits of the modules Invoicing and E-procurement should be advertised. To companies in the Electronic industry, Firm X should advertise the benefits of the Invoicing and Connect modules. To companies in the Health industry, Firm X should advertise the benefits of the E-procurement and Invoicing modules. To companies in the ICT industry, Firm X should advertise the benefits of the E-procurement and Sourcing modules. To companies in the Retail industry, Firm X should advertise the benefits of the E-procurement and KPI modules. To companies in the Transport industry, Firm X should advertise the benefits of the E-procurement and Invoicing modules.

Next to Firm X's specific modules, this paper also investigated the perceived value of some general e-business offerings. The results show that the most popular e-business functionalities rated by managers were order taking and procurement. The least popular e-business functionality was internal administration. The results confirm that Firm X should focus its modules around order taking and procurement functionalities, as the company is already doing.

Furthermore, the viability of a new module/functionality called Software as a Service was explored in this research. The results show that managers indicated a moderately high need for Software as a Service implementations. The companies that indicated the highest need for SaaS solutions were companies in the Retail industry. This research shows that there is a moderately high business case for SaaS solutions. However, it is unclear to what extent SaaS solutions would require a change in Firm X's core competences and capabilities.

6.3 Answering the main research question
Firm X can engage in new market development by marketing its existing modules to companies with high intentions of e-procurement adoption. These companies can be identified by observing the industry specific perceptions on e-procurement's task improving capability, the degree of internal support and the degree of normative pressures that exist in specific industries. Currently, companies that could potentially adopt e-procurement systems lack a significant amount of internal support and normative pressure. Firm X should take this into consideration when targeting certain companies over others in specific industries.

In addition, it is important to advertise the right benefits of e-procurement solutions in order to gain support from procurement professionals in organizations. Also, Firm X

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should take into consideration how companies perceive Firm X's offerings and which modules are more popular in certain industries and for which firm type. This can help Firm X target the right companies with the right solutions and be responsive to the market. Offering existing modules to clients in new markets ensures that Firm X can still operate within its core competence of developing electronic procurement software. However, since Firm X sells and implements its modules via specialized partners, it is important to determine which partners are suitable to implement Firm X's modules in specific industries. On request of Firm X's board, a list of potential implementation partners have been identified, which will be delivered to Firm X's marketing team. However, the selected partners will not be analyzed within the framework of this research and are subject to further assessment by Firm X's own marketing team.

Chapter 7: Recommendations

In light of this research, several recommendations have been developed in order to advise Firm X in taking practical actions. These recommendations are as follows:

- Firm X should target its offerings to organizations with more than 250 employees.

- Firm X should target public organizations since these organizations have indicated the highest scores on task improvement, normative pressure, internal support and e-procurement intention.

- Firm X should target the ICT, Health, Service and Electronics industries, since these industries have scored the highest on the adoption variables and e-procurement valuation. The Retail industry could also be targeted, because companies in the Retail industry rated Firm X's modules the highest.

- Firm X should attach the lowest priority to the Chemical industry, since this industry has the lowest e-procurement intention.

- Firm X should advertise e-procurement's task improving capability and convince managers to gain internal organizational support. Also Firm X should first investigate the adoption of e-procurement systems by a client's business partners before targeting these clients.

- Firm X should increase the resources allocated to the development of the E-procurement, Invoicing and Connect modules, since these modules were rated the most valuable on average.

- Firm X could possibly decrease the organizational resources committed to the development of the Staffing and Sourcing modules, since these modules were rated the least valuable on average.

- Firm X should target the right industries with the right e-procurement modules. The findings can be seen in table 14.

- Firm X could possibly develop SaaS modules, since the need for these solutions was found to be moderately high on average.

- Firm X should keep focusing its offerings around procurement and order taking e-business functionalities, since these functionalities were rated the most valuable among managers.

Chapter 8: Limitations and future research

This section is committed to discussion the limitations of this research and directions for future research. This paper researched factors that influence e-procurement adoption and the perceived value of Firm X's procurement modules. In doing this, a quantitative research method was proposed. Quantitative methods enabled this research to gain general insights with descriptive statistics in the perceived value of Firm X's modules and the current state of e-procurement intentions in different industries and firm types. However, the results only describe the current trends in the market and are limited in explaining the discovered trends. For instance, Firm X's e-procurement module was valued the most in the ICT industry, however, it is not clear how the e-procurement module should specifically operate inside the organization and what the possible shortcomings of this module could be. In depth interviews with existing clients are necessary for determining more specific information about the shortcomings of Firm X's modules.

Another limitation of this research is due to the used sampling method. Due to practical limitations like the absence of a large database to select companies that represent the analyzed population, the method of purposive sampling was used to increase the number of respondents. Respondents have been selected based on their function in the organization they were employed in and not based on the size of the organization, because this data was not available. The survey was mailed to all respondents in relevant LinkedIn groups to ensure a large number of respondents. This led to an unevenly distributed sample population, which could have an influence on the significance of the tested hypotheses.

Also, one can argue that the number of respondents was too low in order for this research to be reliable. Although the number of respondents passes the threshold of 100, a higher number of respondents could improve the statistical validity of this research. In addition, since this research was carried out in the Netherlands, the results are limited and may not be comparable with market trends in other countries, which limits the external validity of this research.

Directions for future research could be a qualitative analysis of Firm X's procurement modules. This research could focus itself on getting more insight in the possible shortcomings of Firm X's modules for existing clients in order to improve the quality of

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the modules and get more insight in the overall value proposition of Firm X. Another direction for future research is explaining the different perceptions between industries in adopting e-procurement systems and the differences between the perceived values for each industry. Also, the results show that the independent variables examined in this research are significantly related with each other. Future researchers could examine the relationships between these variables more closely. The R square value of 0,186 could also be an indication of investigating other variables that could explain e-procurement adoption, since the R square value of the model in this research could be perceived as low by some researchers, but acceptable by others.

Finally, this research can be executed again with a higher number of respondents and an equal distribution of sample characteristics in case an accessible database of company information is available to select representative respondents.

Chapter 9: Research relevance

9.1 Scientific relevance
This research analyzed several e-procurement adoption factors in relation to e-procurement intention. By integrating relevant adoption factors throughout scientific literature, like task improvement, normative pressure, internal support and firm size, this research provides the scientific community with an integrated model of e-procurement adoption. In addition, this research has collected data from managers and companies in the Netherlands. This way, the identified adoption factors in the scientific literature, have also been tested in the context of the Netherlands. The findings indicate, that all tested factors have positive relations with e-procurement intention, which strengthens the adoption theories and similar findings of other researchers in this field. This research also investigated differences in the perceived value of e-procurement systems across industries and firm types. The findings show that differences in intentions and perceived value occur across industries. However, these industry specific differences have not been elaborated in detail in this paper and are subject for future research.

9.2 Business relevance
Next to the scientific relevance, the findings of this research have practical implications for developing Firm X's marketing strategy. This paper describes in which markets the business opportunities are and what the most relevant factors are that may hinder the adoption of e-procurement software. In addition, Firm X can gain more insight in what industries may not be viable after all. This way, Firm X can target markets with the highest business opportunities with the most appropriate e-procurement modules. Since Firm X was already actively marketing its offerings to companies in the Health industry, the findings show that it is also beneficial to target the ICT, Service and Electronic industries. This research tried to discover what the factors were that would stimulate the adoption of e-procurement systems. Firm X can use the findings of this

research to approach potential customers appropriately and develop a marketing strategy based on these factors that would stimulate e-procurement intentions. Overall, e-procurement intentions in industries were relatively high. This means that the business of selling e-procurement software is still viable for Firm X. Also, the business case for Software as a Service was assessed in this research. Companies have indicated that there is a moderately high need for implementing software as a service. This may stimulate Firm X in the development of SaaS solutions. However, it is unknown to what extent this would bring a change in Firm X's core competence and the recruitment of the appropriate employees. In conclusion, this research helps Firm X to gain more insight in new business opportunities and viable markets.

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Appendix A: Online questionnaire

Wat zijn de huidige trends in het gebruik van elektronische inkoop oplossingen in organisaties?

Voor mijn afstudeeropdracht aan de Universiteit Twente onderzoek ik de laatste trends in het gebruik van elektronische inkoop systemen. Dit zijn systemen die organisaties in staat stellen om het inkoopproces van haar producten/ diensten te automatiseren. Inkoop systemen kunnen verschillende voordelen bieden zoals het vinden van de goedkoopste leverancier, het verwerken van geplaatste orders en het verbeteren van de interne administratie. Het is de bedoeling van dit onderzoek om er achter te komen hoe er in het algemeen wordt gedacht over het automatiseren van de inkoopfunctie. Heeft het wel degelijk toegevoegde waarde of is het een hype? Hoe is de huidige adoptie in de markt van dit soort systemen?

Als u uw e-mail achterlaat, zal ik u de resultaten van dit onderzoek in een mooi grafisch weergegeven formaat opsturen. Ook zullen er drie VVV cadeaubonnen worden verloot t.w.v. €30,-. Ik hoop dat u de tijd neemt om deze vragenlijst in te vullen, zodat de resultaten van waarde kunnen zijn.

Het invullen duurt ongeveer 10 minuten. Alvast bedankt voor uw tijd en moeite.
*Vereist

Wat is uw e-mail adres? (Voor het opsturen van de resultaten van het onderzoek/ loting cadeaubonnen)

Hoe denkt u tegenwoordig over elektronische inkoop systemen? Elektronische inkoop systemen...1= Volledig mee oneens, 2= Oneens, 3= Neutraal, 4= Eens, 5= Volledig mee eens *

	1	2	3	4	5
Reduceren de communicatietijd van medewerkers met andere bedrijven					
Zorgen ervoor dat het inkoopproces makkelijker wordt voor inkoop medewerkers					
Zorgen ervoor dat het inkoopproces geschikter wordt voor inkoop medewerkers					
Dragen bij aan kostenbesparing door het vinden van de goedkoopste leveranciers					
Zijn duur om te implementeren binnen de organisatie					
Zijn duur om te implementeren, maar de voordelen wegen zwaarder dan de hoge kosten					

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Hoe zou u de volgende functies van elektronische inkoop systemen waarderen? 1= Zeer weinig waard, 2= Weinig waard, 3= Neutraal, 4= Waardevol, 5= Erg waardevol *

	1	2	3	4	5
Zoeken en vinden van potentiële leveranciers online					
Het elektronisch plaatsen en bijhouden van orders bij leveranciers					
Leveranciers in staat stellen om online biedingen te plaatsen					
Online marktplaatsen om de meest geschikte producten en leveranciers te vinden					
Elektronisch accepteren van orders van klanten					
Elektronisch accepteren van betalingen van klanten					
Klanten elektronisch orders laten volgen en ernaar informeren					
Uitvoeren van financiële accounting en meten van bedrijfsprestaties					
Beheren van vergoedingen en loonuitkeringen					
Beheren van werknemersvoorzieningen					
Aanvragen van producten die niet in de vaste catalogus staan					
Bieden van automatische facturaties					
Leveranciers op de hoogte houden van de ontwikkelen in het bedrijf					
Leveranciers voorzien van productspecificaties waar ze aan moeten voldoen					
Delen van product en voorraad planning met leveranciers					
Leveranciers direct verbinding laten maken met de databases van het bedrijf (ERP)					

In hoeverre bent u het eens met de volgende stellingen over elektronische inkoop systemen in uw markt? 1= Volledig mee oneens, 2= Oneens, 3= Neutraal, 4= Eens, 5= Volledig mee eens *

	1	2	3	4	5
Elektronische inkoop systemen dragen bij aan het succes van onze concurrenten					
Onze concurrenten hebben reeds elektronische inkoop systemen geadopteerd					
Onze handelspartners willen elektronische inkoop systemen adopteren					
Meer leveranciers gaan					

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	1	2	3	4	5
elektronische inkoop systemen adopteren binnen 12 maanden					
Onze leveranciers bieden nadelige contracten wanneer een order niet elektronisch wordt geplaatst					
Het is belangrijk dat we worden gezien als een bedrijf die de nieuwste technologieën adopteert					

In hoeverre bent u het eens met de volgende stellingen over elektronische inkoop systemen en steun voor dit soort oplossingen in het bedrijf waarin u werkzaam bent? 1= Volledig mee oneens, 2= Oneens, 3= Neutraal, 4= Eens, 5= Volledig mee eens *

	1	2	3	4	5
Medewerkers krijgen genoeg training voor het gebruik van elektronische inkoop systemen					
Managers weten precies welke elektronische inkoop oplossingen het bedrijf nodig heeft					
Managers benadrukken continu dat we moeten inspelen op Internet gerelateerde trends					
Managers weten hoe de elektronische inkoop software moet worden geïmplementeerd					
Elektronisch inkopen wordt gezien als hype en zal binnenkort verouderd zijn					
Integratie met bestaande IT systemen zal moeilijk zijn					

In hoeverre bent u het eens met deze stellingen? 1= Volledig mee oneens, 2= Oneens, 3= Neutraal, 4= Eens, 5= Volledig mee eens *

	1	2	3	4	5
Onze klanten vinden dat we elektronische inkoop systemen moeten implementeren					
Onze klanten beschouwen ons als niet up-to-date als we geen elektronische inkoop systemen hebben					
Onze orders bestaan uit herhaal-orders van hetzelfde product					
De specificaties voor elke order veranderen niet per bestelling					
We hebben vaste leveranciers die niet					

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Geef aan welke elektronische inkoop methodes worden gebruikt in het bedrijf waarin u werkzaam bent. Wij gebruiken... *

Het Internet om online producten of diensten aan te schaffen
Online catalogi om orders mee te plaatsen
De website van andere bedrijven om orders op te plaatsen
Ons eigen platform om orders op te plaatsen
Speciale online marktplaatsen om orders op te plaatsen
Systemen die zijn geïntegreerd met onze leveranciers om order op te plaatsen
Online veilingen om de meest gunstige product of service mee aan te schaffen
Geen online inkoop systemen

Wat is het benodigde organisatorische bereik van het elektronische inkoop systeem in het bedrijf waarin u werkzaam bent? *
1= Desktop, 2= Werkgroep, 3= Afdeling, 4= Onderneming, 5= Globale onderneming
      1   2   3   4   5

Wat is de benodigde integratie van het elektronische inkoop systeem met het bestaande IT infrastructuur in het bedrijf waarin u werkzaam bent? *
1= Geen integratie, 2= Lichte integratie, 3= Normale integratie, 4= Diepe integratie, 5= Zeer diepe integratie
      1   2   3   4   5

Hoe hoog zijn de beveiligingseisen die worden gesteld aan het elektronische inkoop systeem? *
1= Geen, 2= Weinig, 3= Normaal, 4= Veel, 5= Erg veel
      1   2   3   4   5

Hoe ziet de opbouw van de gebruikers van het elektronische inkoop systeem eruit binnen het bedrijf waarin u werkzaam bent? *

Interne medewerkers
Externe partners
Beide

Hoe vaak vindt er een update plaats van het elektronische inkoop systeem? *
1= Geen, 2= Weinig, 3= Normaal, 4= Vaak, 5= Erg vaak
      1   2   3   4   5

Welke IT functies gebruikt het bedrijf waarin u werkzaam bent? *

Internet
Intranet
E-mail
Programma's voor interne samenwerking
Video-conferencing software

Binnen wat voor periode denkt u dat uw bedrijf over wil stappen naar elektronische inkoop systemen? *

Gebruikt al elektronische inkoop systemen
Binnen 1 jaar
Binnen 2 jaar

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Binnen 5 jaar
Nooit

In welke sector opereert het bedrijf waarin u werkzaam bent? *

ICT sector
Chemische sector
Gezondheidssector
Textiel sector
Elektronische sector
Transportsector
Retailsector
Touristensector
Dienstensector

In wat voor type bedrijf bent u werkzaam? *

Publieke organisatie
Private organisatie
Semi-overheidsorganisatie

Wat is uw functie binnen het bedrijf waarin u werkzaam bent? *

Hoofd inkoop
Inkoop manager
Inkoop medewerker
Hoofd financiële afdeling
Financieel manager
Financieel medewerker
Marketing manager/ medewerker
Anders:

Hoeveel werknemers heeft het bedrijf waarin u werkzaam bent? *

<50 fte
51-100 fte
101-200 fte
201-250 fte
>251 fte

Hoe heet het bedrijf waarin u werkzaam bent? (Antwoord is niet verplicht)

Appendix B: Results

Descriptive Statistics

	N	Mean	Std. Deviation
INTERNAL 1 [Medewerkers krijgen genoeg training voor het gebruik van elektronische inkoop systemen]	128	3,21	1,040
INTERNAL 2 [Managers weten precies welke elektronische inkoop oplossingen het bedrijf nodig heeft]	128	2,47	1,094
INTERNAL 3 [Managers benadrukken continu dat we moeten inspelen op Internet gerelateerde trends]	128	2,78	1,143
INTERNAL 4 [Managers weten hoe de elektronische inkoop software moet worden geïmplementeerd]	128	2,32	1,019
INTERNAL 5 [Integratie met bestaande IT systemen zal moeilijk zijn]	128	2,95	1,235
Valid N (listwise)	128		

Descriptive Statistics

	N	Mean	Std. Deviation
TASK IMPROVEMENT 1 [Reduceren de communicatietijd van medewerkers met andere bedrijven]	128	3,81	1,033
TASK IMPROVEMENT 2 [Zorgen ervoor dat het inkoopproces makkelijker wordt voor inkoop medewerkers]	128	3,87	,991
TASK IMPROVEMENT 3 [Zorgen ervoor dat het inkoopproces geschikter wordt voor inkoop medewerkers]	128	3,47	1,003
TASK IMPROVEMENT 4 [Dragen bij aan kostenbesparing door het vinden van de goedkoopste leveranciers]	128	3,10	1,183
TASK IMPROVEMENT 5 [Zijn duur om te implementeren binnen de organisatie]	128	2,80	1,123
TASK IMPROVEMENT 6 [Zijn duur om te implementeren, maar de voordelen wegen zwaarder dan de hoge kosten]	126	3,29	1,066
Valid N (listwise)	126		

	N	Mean	Std. Deviation
NORMATIVE: COMPETITIVE PRESSURE 1 [Elektronische inkoop systemen dragen bij aan het succes van onze concurrenten]	128	2,86	1,085
NORMATIVE: COMPETITIVE PRESSURE 2 [Onze concurrenten hebben reeds elektronische inkoop systemen geadopteerd]	128	3,02	,988
NORMATIVE: SUPPLIER PRESSURE 1 [Onze handelspartners willen elektronische inkoop systemen adopteren]	128	3,23	1,031
NORMATIVE: SUPPLIER PRESSURE 2 [Meer leveranciers gaan elektronische inkoop systemen adopteren binnen 12 maanden]	128	3,25	1,004
NORMATIVE: SUPPLIER PRESSURE 3 [Onze leveranciers bieden nadelige contracten wanneer een order niet elektronisch wordt geplaatst]	128	2,30	1,024
NORMATIVE: CUSTOMER POWER 1 [Het is belangrijk dat we worden gezien als een bedrijf die de nieuwste technologieën adopteert]	128	3,11	1,152
NORMATIVE: CUSTOMER POWER 2 [Onze klanten vinden dat we elektronische inkoop systemen moeten implementeren]	128	2,50	1,094
NORMATIVE: CUSTOMER POWER 3 [Onze klanten beschouwen ons als niet up-to-date als we geen elektronische inkoop systemen hebben]	128	2,55	1,107
Valid N (listwise)	128		

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Report

In welke sector opereert het bedrijf waarin u werkzaam bent?		EPROCMODULE	SOURCINGMOD	ORDERMOD	KPIMOD	INVOICINGMOD	CONNECTMOD	STAFFINMOD	SAAS	TOTALPROC
Chemische sector	Mean	3,5625	3,0833	3,2500	3,5625	3,0625	3,5313	2,3125	3,5313	3,2370
	N	16	16	16	16	16	16	16	16	16
	Std. Deviation	1,03078	,96225	1,03280	1,20934	1,48183	1,02419	1,34009	,80039	,71733
Dienstensector	Mean	3,8750	3,4583	3,5000	3,5938	4,0313	3,6719	2,4531	3,3594	3,4928
	N	32	32	32	32	32	32	32	32	32
	Std. Deviation	,84984	,79762	,64758	,94560	,99950	,92987	,98668	,86821	,51801
Elektronische sector	Mean	3,8462	3,4103	3,4231	3,3846	4,0769	4,0385	2,3462	3,3846	3,4888
	N	13	13	13	13	13	13	13	13	13
	Std. Deviation	1,01485	,92450	1,23905	1,04391	,86232	,82819	1,24808	,55542	,64296
Gezondheidssector	Mean	4,0513	3,2564	3,5769	3,7692	4,0000	3,8077	2,5385	3,4423	3,5553
	N	13	13	13	13	13	13	13	13	13
	Std. Deviation	,46837	,74726	,57177	1,01274	,81650	,59646	1,12660	,77831	,35113
ICT sector	Mean	4,0351	3,8246	3,6579	3,6316	3,7895	3,5000	3,0000	3,3684	3,6009
	N	19	19	19	19	19	19	19	19	19
	Std. Deviation	,76089	,67007	,89834	1,30002	,91766	,89753	1,21335	,87943	,60816
Retailsector	Mean	4,0000	3,0238	3,2143	4,0000	3,8571	3,8214	3,0000	3,6607	3,5722
	N	14	14	14	14	14	14	14	14	14
	Std. Deviation	,65372	,75633	,91387	,87706	,86444	,95287	,80861	,64753	,50237
Textiel sector	Mean	4,0000	4,3333	4,0000	4,0000	4,0000	4,0000	2,0000	3,5000	3,7292
	N	1	1	1	1	1	1	1	1	1
	Std. Deviation	.	.	.	.	.	.	.	.	.
Touristensector	Mean	5,0000	4,5000	4,7500	5,0000	5,0000	5,0000	2,5000	3,8750	4,4531
	N	2	2	2	2	2	2	2	2	2
	Std. Deviation	,00000	,23570	,35355	,00000	,00000	,00000	2,12132	1,23744	,40511
Transportsector	Mean	4,1111	3,1481	3,2778	3,8333	3,8889	3,6389	2,6389	3,5833	3,5150
	N	18	18	18	18	18	18	18	18	18
	Std. Deviation	,64676	1,01764	1,12749	1,04319	1,23140	1,01178	1,16070	,56880	,69799
Total	Mean	3,9401	3,3724	3,4531	3,6953	3,8516	3,7148	2,5977	3,4668	3,5115
	N	128	128	128	128	128	128	128	128	128
	Std. Deviation	,80401	,86703	,91022	1,05412	1,07286	,91075	1,12952	,75384	,58950

Report

In wat voor type bedrijf bent u werkzaam?		FIRMSIZE	EPROCINTENTION	TASKIMPROVEMENT	NORMATIVEPRESSURE	INTERNALSUPPORT
Private organisatie	Mean	3,8367	3,8660	3,3939	2,8444	2,6939
	N	98	97	98	98	98
	Std. Deviation	1,60344	1,41884	,63924	,61658	,77070
Publieke organisatie	Mean	3,7273	4,0909	3,5545	2,9489	2,8909
	N	22	22	22	22	22
	Std. Deviation	1,77769	1,26901	,79025	,72237	,81352
Semi–overheidsorganisatie	Mean	5,0000	4,3750	3,2250	2,7031	3,0000
	N	8	8	8	8	8
	Std. Deviation	,00000	,91613	1,24871	,46741	1,28285
Total	Mean	3,8906	3,9370	3,4109	2,8535	2,7469
	N	128	127	128	128	128
	Std. Deviation	1,60332	1,36712	,71224	,62591	,81462

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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	TASKIMPROV EMENT[b]	.	Enter

a. Dependent Variable: EPROCINTENTION

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,215[a]	,046	,039	1,34041

a. Predictors: (Constant), TASKIMPROVEMENT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,909	1	10,909	6,071	,015[b]
	Residual	224,587	125	1,797		
	Total	235,496	126			

a. Dependent Variable: EPROCINTENTION

b. Predictors: (Constant), TASKIMPROVEMENT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,532	,582		4,348	,000
	TASKIMPROVEMENT	,412	,167	,215	2,464	,015

a. Dependent Variable: EPROCINTENTION

Model	Variables Entered	Variables Removed	Method
1	NORMATIVEP RESSURE[b]	.	Enter

a. Dependent Variable: EPROCINTENTION

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,247[a]	,061	,053	1,33020

a. Predictors: (Constant), NORMATIVEPRESSURE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14,319	1	14,319	8,092	,005[b]
	Residual	221,177	125	1,769		
	Total	235,496	126			

a. Dependent Variable: EPROCINTENTION

b. Predictors: (Constant), NORMATIVEPRESSURE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,400	,553		4,340	,000
	NORMATIVEPRESSURE	,540	,190	,247	2,845	,005

a. Dependent Variable: EPROCINTENTION

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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FIRMSIZE[b]	.	Enter

a. Dependent Variable: EPROCINTENTION

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,184[a]	,034	,026	1,34919

a. Predictors: (Constant), FIRMSIZE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,957	1	7,957	4,371	,039[b]
	Residual	227,539	125	1,820		
	Total	235,496	126			

a. Dependent Variable: EPROCINTENTION

b. Predictors: (Constant), FIRMSIZE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,318	,319		10,390	,000
	FIRMSIZE	,158	,076	,184	2,091	,039

a. Dependent Variable: EPROCINTENTION

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	INTERNALSUPPORT[b]	.	Enter

a. Dependent Variable: EPROCINTENTION

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,342[a]	,117	,110	1,28984

a. Predictors: (Constant), INTERNALSUPPORT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27,535	1	27,535	16,550	,000[b]
	Residual	207,961	125	1,664		
	Total	235,496	126			

a. Dependent Variable: EPROCINTENTION

b. Predictors: (Constant), INTERNALSUPPORT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,367	,403		5,881	,000
	INTERNALSUPPORT	,572	,141	,342	4,068	,000

a. Dependent Variable: EPROCINTENTION

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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	NORMATIVEP RESSURE[b]	.	Enter

a. Dependent Variable: INTERNALSUPPORT

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,373[a]	,139	,133	,75870

a. Predictors: (Constant), NORMATIVEPRESSURE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11,750	1	11,750	20,413	,000[b]
	Residual	72,528	126	,576		
	Total	84,279	127			

a. Dependent Variable: INTERNALSUPPORT

b. Predictors: (Constant), NORMATIVEPRESSURE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,360	,314		4,329	,000
	NORMATIVEPRESSURE	,486	,108	,373	4,518	,000

a. Dependent Variable: INTERNALSUPPORT

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	TASKIMPROV EMENT[b]	.	Enter

a. Dependent Variable: INTERNALSUPPORT

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,365[a]	,133	,126	,76152

a. Predictors: (Constant), TASKIMPROVEMENT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11,210	1	11,210	19,332	,000[b]
	Residual	73,068	126	,580		
	Total	84,279	127			

a. Dependent Variable: INTERNALSUPPORT

b. Predictors: (Constant), TASKIMPROVEMENT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,324	,331		4,006	,000
	TASKIMPROVEMENT	,417	,095	,365	4,397	,000

a. Dependent Variable: INTERNALSUPPORT

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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FIRMSIZE[b]	.	Enter

a. Dependent Variable: SAAS

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,189[a]	,036	,028	,74317

a. Predictors: (Constant), FIRMSIZE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,582	1	2,582	4,676	,032[b]
	Residual	69,589	126	,552		
	Total	72,171	127			

a. Dependent Variable: SAAS

b. Predictors: (Constant), FIRMSIZE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,121	,173		18,041	,000
	FIRMSIZE	,089	,041	,189	2,162	,032

a. Dependent Variable: SAAS

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