UNIVERSITY OF VAASA

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FINDING THE KEY ELEMENTS THAT ENHANCE THE PROCUREMENT PROCESS - CASE WOIMA CORPORATION

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FOREWORD

This Master Thesis was done in the co-operation with WOIMA Corporation. I would like to thank my instructor Joona Piirto for the possibility to write from a subject of my interest and from the guidance I have gotten through this process. I would also like to thank my supervisor Ville Tuomi for the advices and feedback I got during this process.

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Special thanks to my boyfriend Juuso for supporting and encouraging me and always making me laugh during our years together.

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Elli Nykänen

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LIST OF ABBREVIATONS

B2B	Business-to-Business
BM	Benchmarking
BSPS	Buyer-side procurement system
CMM	Capability Maturity Model
COO	Country of origin
EDI	Electronic data interchange
EPC	Engineering, procurement and planning
ERP	Enterprise Resource Planning
ISO	International Organization for Standardization
PCCM	Procurement Competitive Capability Maturity
PO	Purchase order
PR	Purchasing requisition
RFP	Request for proposal
RFQ	Request for quotations
SC	Supply chain
SCC	Supply Chain Council
SCM	Supply chain management
SCOR	The Supply Chain Operations Reference - model
SSPS	Supplier-side procurement system
TOC	Total cost of ownership
TPMS	Third party marketplace systems

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ABSTRACT

Procurement has changed over the years and has become a key element in today's business. Supply chain management and procurement are key business drivers to companies. The changes in business has developed new requirements and the challenge for companies is that how they can adjust their process to meet these new requirements. What truly are the elements that makes a company's procurement process the most effective?

This can be studied through the element of maturity the purchasing process has. In this study, the Procurement Competitive Capability Maturity is reviewed. Through the maturity model the key elements that enhance the purchasing process are tried to find. The study also examines the effect of what e-technology solutions can have on procurement and how they can possibly be an advantage or disadvantage for the process.

This is a case study that applies both exploratory and inductive approach. In this study, the empirical part was conducted by utilizing semi-structured interviews for persons working in the field of supply chain management. The interviews were then analyzed in order to conduct the final results of this study. This study also examines the current literature found in the field of supply chain management and compares findings from the interviews to the literature.

The research has indicated that the procurement process is a complex and multidimensional process. Procurement has a lot of moving parts that can affect the whole supply chain. What was found that a lot of communication and co-operation is needed with suppliers and that was the most important element when it came to procurement. The need for good supplier network was also highlighted. The study also showed that time management is also important when it comes to procurement. The communication inside own organization is also an important part of the procurement process.

Furthermore, this study offers some insights for the case company on which they should focus on while of developing their own procurement process to achieve their goals regarding to effectiveness.

KEYWORDS: Maturity model, Supply chain management, Procurement, Purchasing

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TIIVISTELMÄ

Hankinta on keskeinen osa yrityksien liiketoimintaa. Nykypäivänä toimitusketjun hallinta ja hankinta ovat yritysten avaintekijöitä. Muuttuva globaali ympäristö on luonut yrityksille uusia vaatimuksia, jotka niiden on täytettävä. Kuinka yritykset siis pystyvät muuttamaan prosessejaan niin, että ne täyttävät uudet vaatimukset? Mitkä ovat ne tekijät, jotka tekevät yrityksen hankintaprosessista tehokkaimman?

Tässä tutkielmassa tutkitaan ostoprosessia niin kutsutun maturiteettimallin (maturity model) kautta. Sen kautta pyritään tunnistamaan keskeisiä elementtejä, jotka parantavat osto- ja hankintaprosessia. Tutkimuksessa selvitetään myös, miten uudet teknologiaratkaisut voivat vaikuttaa hankintaan ja onko näistä ratkaisuista etua tai haittaa prosessille.

Tämä tutkielma on case-tutkielma, joka hyödyntää sekä tutkivaa, että induktiivista lähestymistapaa. Tutkielman empiirinen osa toteutettiin suorittamalla puolistrukturoituja haastatteluja. Lopputulokset tehtiin haastattelujen ja niiden analysoinnin perusteella. Tutkimuksessa tarkastellaan myös hankinta-alan nykyistä kirjallisuutta, jota myös hyödynnettiin lopputulosten analysoinnissa.

Tutkimus osoitti, että hankinnan prosessi on hyvin monimutkainen ja moniulotteinen. Hankinnan ketjussa on monta liikkuvaa osaa ja niiden hallinta tekee koko toimitusketjun hallinnasta haastavaa. Kommunikaatio ja yhteistyön tekeminen toimittajien kanssa korostui lopputuloksissa. Myös toimittajaverkoston tarve ja laajuus olivat tärkeä osa hankintaa. Yhä kiihtyvässä globaalissa ympäristössä ajanhallinnan tärkeys korostui, koska ajoittain hankintatyö voi olla hyvinkin hektistä. Kommunikaatio oman organisaation sisällä osoittautui myös tärkeäksi menestystekijäksi.

Tutkimus myös tarjoaa case-yritykselle ideoita ja mahdollisia ratkaisuja, joiden avulla he voivat kehittää prosessiaan mahdollisimman tehokkaaksi ja toimivaksi.

AVAINSANAT: Hankinta, Toimitusketjun hallinta, Maturity model

1 INTRODUCTION

1.1 Background of the study

In 1998 McIvor et al. already stated that procurement should be thought as a peer for the organization's other strategic functions, such as marketing, finance, and production. Supply chain management has gained a lot of attention in the past years. It is getting more popular because of the dynamically changing environment and the even tougher competition. There are more demands coming from the stakeholders' side also. (Gangurde & Chavan 2016:1751.)

Purchasing nowadays is more than just a traditional function. Purchasing has changed to a strategic imperative. If a company decides to strengthen its purchasing process it can at the same time strengthen the company's competitive advantage. (Gangurde & Chavan, 2016:1751.)

Because companies purchasing volume has grown it is crucial that better performance from procurement function makes a big contributor to the firm's overall performance (Schiele 2007:274). Both purchasing and supply chain management has become one of the key business drivers (Weele 2010:18).

But how can the purchasing function fulfill all these new requirements that it has? This can depend on its development level or maturity. Maturity is the "level of professionalism in the purchasing function" (Schiele 2007: 274). By testing the maturity of the purchasing function, it is useful to test the link between the quality of the purchasing function and its participation in a firm's performance in general (Schiele 2007:274).

Studies from Paulraj et al. (2006), Schiele (2007) and Batenburg & Versendaal (2007) has found that the organization's performance has a positive impact on what higher the level of the maturity its supply chain has. Maturity can be tested in many fields of business

not only in procurement. However, because the focus of this thesis is procurement, we focus on procurement and supply chain maturity models.

Benchmarking combined with maturity is one way to discover the maturity of the purchasing process. In Simatupang's (2004) research it is shown that benchmarking can lead to a growth of productivity in the supply chain. Also, by utilizing benchmarking the weak spots of the supply chain and purchasing process can be detected.

Many companies have a different kind of purchasing practices and ways how they document and develop their process. Therefore, it will be interesting to examine how the purchasing process of other companies can be tested and benchmarked. By examining other organizations processes, big and small companies, it can be seen if their process has similarities and how the process from a big global company can be brought to a smaller organization. When thinking the purchasing process, it could be thought that every company goes through the same steps of the purchasing process it will be interesting to see if it is so. Also, the methods company's use in their process is fascinating to see if there are similarities and what are the differences between them.

In this study, the case company WOIMA Corporation's business focuses highly on managing the total cost of ownership, within the supply chain by effective procurement operations. While ensuring the acceptable availability to the customer with the objective of generating sustainable profit through supply chain management. WOIMA Corporation being still as a start-up company is currently verifying their procurement operations to ensure the needed project delivery capabilities with the purpose of securing long-term success, in exporting their solutions to emerging markets. Therefore, it is crucial to develop operations enabling the valuable contribution of a globally operating supplier to occur sustainably and competitively.

1.2   Introduction to Case-company

WOIMA Corporation is a company that is established in 2017 and it is located in Vaasa (Kauppalehti 2018). WOIMA delivers to its customer waste-to-energy solutions. They also want to provide a better quality of life and more social equality in developing countries. (WOIMA Corporation 2018) The customer focus group of WOIMA is, therefore, in developing countries.

WOIMA can be considered as a start-up company. WOIMA has focused on establishing the supply chain cost structure and collaboration set up with preferred partners together with product and sales development. The intention is to shift focus on verifying the plan for the project delivery including procurement operations supporting that the supply chain will align for its solutions and customer needs accordingly. The goal with WOIMA is to make the procurement process into seamlessly gain the benefits of the collaboration together with its partners to reach and cultivate WOIMA's organizational capabilities such as speed, flexibility and innovation.

The company's business is widely based on procurement and subcontracting. WOIMA corporation delivers EPC-projects (engineering, procurement, and constructions) to its customer. They do not manufacture the power-plants themselves, but they subcontract most part of the project. That is why the procurement process is a key competitive advantage of the company

As for the start, WOIMA Corporation has utilized an internet-based SCM shared platform service. They have now used it for the purposes of onboarding, bidding and maintaining supplier collaboration. It is a buyer-side procurement system, that can be used on the internet and by a mobile device.

The SCM service has different features that are for making the PO's RFQ's and offers, forecasting, and auditing. In it, contracts can be made and share information and documentation between the organization and suppliers. The communication is visible to the whole organization which also helps with the information flow that comes from emails.

The point with this platform is to help its customer to achieve automatization of the business process and ease the current information flow. The purpose is to make the information that is shared visible, available and manageable.

1.3   Objectives of the study

The objective of this study is to establish highly effective procurement activities for global project deliveries. The key is that the process and its documentation is flexible as possible. The hope is that WOIMA could utilize an SCM platform service they have already started to experiment.

Another objective is to examine how the procurement activities in a project business can be influenced by standardization and what are the areas of the procurement process that should be standardized in a start-up company and why?

This study has two research question through which the end results are developed. The questions are:

1.   What are the key elements that enhance the procurement process?

2.   What are the parts of the procurement should be subjected to standardization within start-up company?

The study is conducted by applying a qualitative method. At first theory behind procurement and standardized procurement process is examined. The theoretical findings are then utilized in the empirical part of the study which is conducted through qualitative interviews from other companies. The interviews are done in order to benchmark other companies. By benchmarking we can find key elements that enable a high performing procurement process for WOIMA Corporation and find the important decision points and key elements that enhance the procurement process.

1.4   Scope of the study

The scope of this thesis is to research a standardized procurement process and supply chain management. The objective is also to find studies of how standardized procurement process has affected the companies' effectiveness and what the benefits of it are. Another objective is to see if there are similarities or differences between big and small companies purchasing process.

The empirical part of this study is to deepen the practical knowledge and ways how a standardized procurement process can be developed. This thesis also examines to what extent the purchasing process of a bigger organization can be adapted into a smaller organization and what are the benefits of such adaption.

In conclusion of the study, the thesis examines how all the theory found and the results of the empirical part can be combined and how through this a process for the case company can be developed.

1.5   Key definitions and concepts

This part will describe the most important definitions and concepts of this study. A deeper insight to this concepts and definitions are presented in chapter 2.

Supply chain management (SCM): SCM has many different definitions, but shortly SCM is all the business process involving planning, controlling and executing a product's flow. It includes acquiring raw materials and production through to the end customer. All these processes are done in the most streamlined and cost-effective as possible. (Gunasekran 2004:265-268; Weele 2010:11)

Supply Chain (SC): Network of individuals that are directly or indirectly linked to one another. Typical SC has vendors of raw materials, producers, warehouses, distribution

centrals and retailer that delivers the product to an end customer. (Bozarth & Handfield 2008:7.)

Procurement: The term procurement is used to describe all the activities related to the purchasing process (Weele 2010:6).

Purchasing: In this thesis the term purchasing is used to describe the operational parts of procurement.

Purchasing management: All the activities that are included in managing suppliers.

Benchmarking: A way to measure a company's practices with peers. Comparing companies to one another. Finding out key improvement points and analyzing how other companies have achieved high-performance levels. Using the information gathered in order to improve own performance (Bozarth & Handfield: 2008:60).

Maturity model: A process improvement technique. Evaluating how efficiently the company is performing for example in procurement unit.

SCOR model: Model to measure the performance of a supply chain. Developed by the Supply Chain Council in 1996 (Supply Chain Council 2012).

1.6   Structure of the study

This study is constructed of five different chapters. The construction is a linear analytic model. This kind of similar structure of the thesis is widely used in academic journals articles as well as in case studies (Saunders, Lewis & Thornhill 2009:176).

The first chapter consists of the introduction to the topic and the background for it. Chapter one also introduces the structure of the study. Chapter two includes the key definitions of this thesis and examines the existing theories of supply chain management in the literature. Chapter three presents the methodology of this study. It explains the data-collection

and data analysis process. In chapter four the empirical results are shown and drawn from the study. Chapter 5 draws in the results and presents the conclusion of the study. The structure of this study can be seen in Figure 1.

Chapter 1: Consists the introduction and the background of the study. Presening the case-company

Chapter 2: Litterature review of existing theories in procurement and supply chain management. Focuses on maturity model and Procurement Competitive Capability Maturity model.

Chapter 3:Methodology and the data gathering process is presented. Analyzing the results from qualitative interviews. The validity and reliability of the study.

Chapter 4: Empirical results drawn based on the results. Discussion of the results compared to other companies and theories.
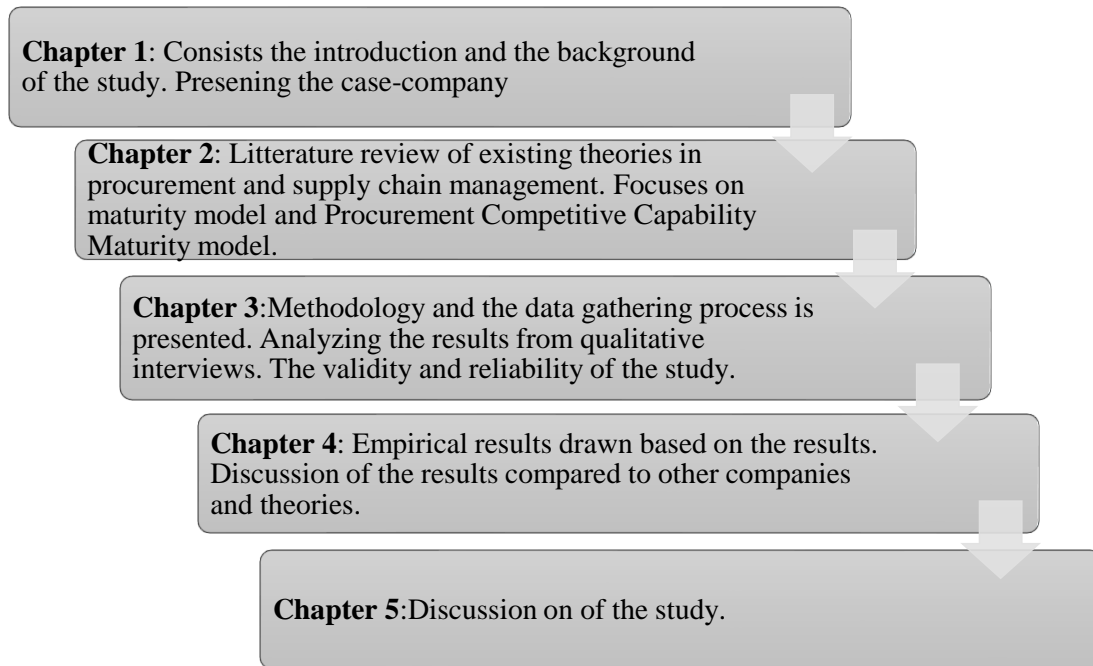
Chapter 5:Discussion on of the study.

Figure 1. Structure of the thesis.

2 REVIEW ON SUPPLY CHAIN MANAGEMENT AND PURCHASING PROCESS

2.1 Supply chain management

Supply chain management (SCM) is a competitive strategy that integrates suppliers and customers. The objective is to improve responsiveness and the flexibility of manufacturing organizations (Gunasekran 2004:265-268).

The term SCM has originally appeared already in the 1980s when it was first introduced. SCM is a network that consists of information, materials, and services. It also processes links with the characteristics of demand, supply, and transformation. SCM can also be used to explain the control and the planning of materials. It also explains the information flows and both external and internal logistics activities. (Chen & Paulraj 2004:119-150.)

Supply Chain (SC) links organizations together. In SC the links can be physical flows, information flows, and monetary flows (Bozarth & Handfield 2008:7). Kraljic (1983:110) has said in his article *Procurement must become Supply management* that there is a need to purchasing change from operational function to a strategic one. The difference between SCM and purchasing is that SCM also includes all the logistics activities and it also includes the management of relationships (Weele 2010:11).

The purpose of SCM is to develop a competitive supply base for the company. To companies achieve these goals they need to adopt the process orientation view rather than a functional orientation towards issues with purchasing.

A simple illustration of an SCM is seen in Figure 2. Shortly SC is a network of materials, information, and services processing links with the characteristics of supply, transformation, and demand (Chen & Paulraj 2004:119).
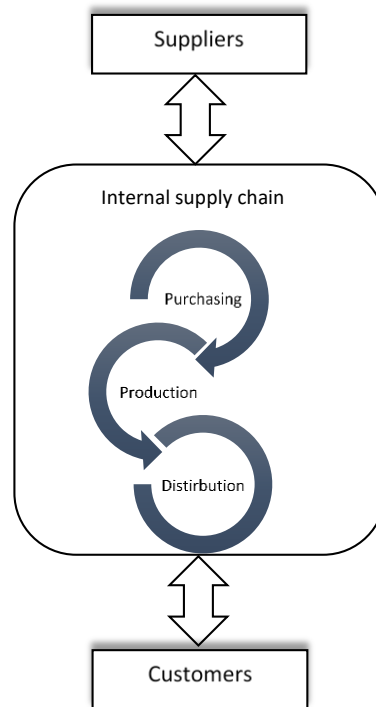
Figure 2. Illustration of a typical supply chain.

In this illustration of an SC seen in Figure 2, the purchasing, production, and distribution form the internal supply chain. In this model, the supplier is seen outside of the internal supply chain and it communicates with the company's purchasing department. These all are linked to each other to please the end-customer.

2.2   Procurement

Procurement is a set of activities, in the function of purchasing inputs used in the firm's value chain. Procurement involves all the activities that are required in order to get the product from the supplier to the end destination. The purchasing process is part of procurement. The procurement is traditionally used when the buying is based on total cost of ownership (TCO). TCO means the end cost that the company will obtain over the lifetime of the product that is purchased. Procurement can include supplies, raw materials and/or other consumable items or even services. (Weele 2010:5-7.)

Procurement can also be seen as having a wider meaning than purchasing. Procurement manages the entire cycle. However, it does not include the logistics activities which SCM does, and that is the main difference between procurement and SCM (Do 2016:17).

Both in practice and in literature the terms purchasing, procurement, sourcing, and supply management are all used interchangeably (Weele 2010:8).

2.2.1   Purchasing process

The Purchasing process is carried out by the purchasing function. Purchasing function means all the activities aimed at determining the purchasing specifications. This means selecting the best possible supplier and developing routines and procedures that enables to achieve this. It also includes conducting negotiations with a supplier to achieve contracts, ordering process, handling routines, and the process of monitoring and controlling the order to achieve secure supply, follow up and lastly evaluation. (Van Weele 2010:8-9.) The purchasing process is portrayed below in figure 3. Purchasing function is an operational activity.
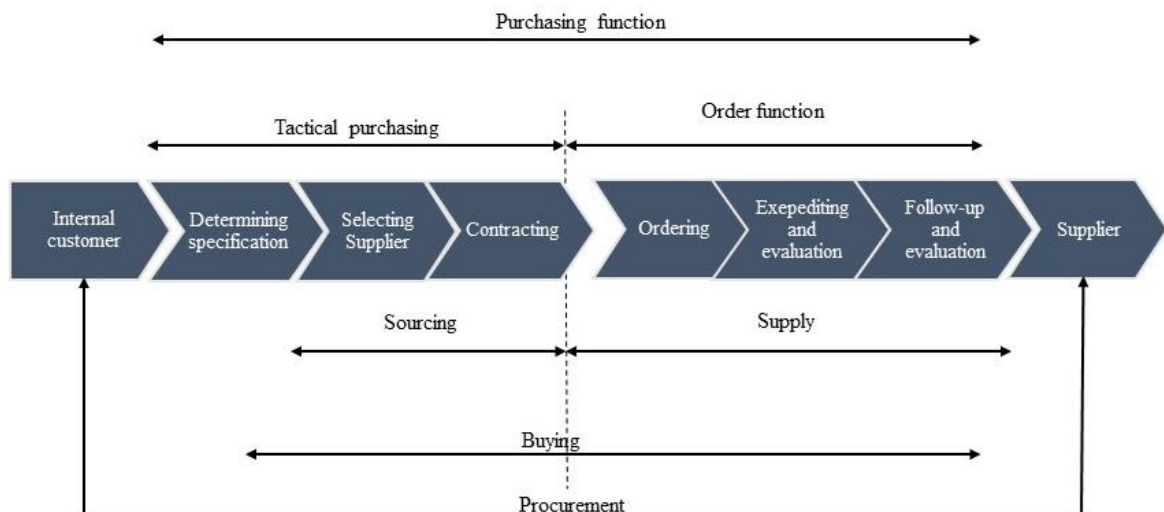

Figure 3. Purchasing process model (Van Weele 200:9).

Figure 3 explains the process of purchasing. It includes the main activities of the purchasing function. In the purchasing function, there is not included the responsibility for materials requirements (planning, materials scheduling, inventory management, and quality control). These activities should be closely linked to the purchasing process to be effective (Van Weele 2010:9). The explanation for the purchasing process activities are explained here below:

1. **Determine specification:** Determining the specifications of the goods that are purchased.

2. **Selecting Supplier:** Choosing the best supplier for the delivery can be a new one or an existing and qualified supplier. This part can also be called as sourcing. Sourcing is part of strategic procurement. It means finding, selecting, contacting and managing the best possible supplier. (Weele 2010:10.) There can be four different sourcing strategies; outsourcing for cost-efficiency, insourcing, outsourcing for capability and out-tasking (Jensen 2017:139). For a simple way to describe sourcing strategy, it is the way to find the best possible supplier for the job.

3. **Contracting:** Making agreements or a contract with the supplier in order to formalize the buyer-supplier relationship.

4. **Ordering:** Placing an order to the selected supplier. Most commonly this is done by releasing a purchase order (PO). This can be done by utilizing electronic data interchange (EDI).

5. **Expediting:** This phase means the monitoring and controlling the order in order to achieve a secure supply chain.

6. **Follow-up and evaluation:** Settling claims (if there are any). Supplier rating and ranking. Keeping supplier and product files up-to-date.

   (Bozarth & Handfield, 2008:346-351; Van Weele 2010: 8-9.)

More models of purchasing process do exists but in this thesis, Van Weele's model was chosen to be presented because of its universal construct. However, this is only a theoretical model and in the real world, the organizations purchasing process can deviate from this model. There are different kind of situations that can influence the process some example are personal relationships, insufficient supplier selection and lack of good contractual agreements. (Van Weele 2011:47.)

2.2.2 Purchasing management

Purchasing management is all the activities that are included in managing supplier relationships. This is done in a way that the activities are aligned in the company's overall strategy and interests (Van Weele 2010:11).

Purchasing management is focusing on improving the purchasing process within the organization but also between the supplier and the organization. The purpose of purchasing management is that if suppliers are not managed by the customer the relationship is then managed by the supplier.(Van Weele 2010:11.)

Purchasing management is done because it contributes to the achievement of long-term benefits. Purchasing management is done because purchasing has gained a more strategic role in companies than it has before (Corina 2012:1048). Purchasing management can have the following impacts on the organization:

- Fundamental impact

- Information impact

- Impact on the organization's image

Fundamental impact means that a company can gain savings that influences the organization's total turnover. This can increase the profitability of the company. Information impact means that the organization gets more information that is useful for the whole organization. This is due to the position the purchasing function is in because purchasing

has a direct interface with the market that the organization operates. The impact on the organization's image is because of the co-operation with suppliers. If a relationship with a supplier goes bad it might affect the whole company's image. (Corina 2012:1048.)

2.2.3   Strategic procurement & procurement strategy

Shortly explained strategy is a plan, usually a written plan that determines the goals the company wants to achieve. The strategy also states the means to achieve those determined goals. Companies usually have a business strategy and then smaller strategies for different parts of the company. When it comes to strategic procurement, it must be aligned with the company's strategic plan and planning process (Carr and Pearson 1999:501). This is also true not only with procurement, but other departments strategies must also be aligned with the company's strategic plan.

Strategic procurement explained means a degree that the procurement/ purchasing function plans, evaluates and implements the strategic plan. It also must control the strategic plan. When the company's strategic plan and purchasing function are aligned with each other, then the purchasing function can be called as a strategic procurement function. (Carr and Pearson 1999:501.)

Strategic purchasing can be classified into three different levels. The levels are focus, involvement, and visibility. These levels are there to operationalize the strategic procurement and determine the level of which the strategic procurement function is. (Paulraj et al. 2006:107-108.) These levels are shortly explained below.

Focus: The function has a written and formal plan for the long-range the focus is put on issues that involve in the future like risk and uncertainty.

Involvement: It is included in the company's strategic plan. The organization's common goals are known. The performance is measured, and development is made accordingly. The management sees the procurement function having a strategic role.

Visibility: Management sees strategic procurement as an essential part of the corporate strategy. The manager of procurement has visibility and is heard among with the top management. (Paulraj et al. 2006:108.)

There is more support these days for purchasing seen as a strategic part and having an influence on the company's whole strategy (Paulraj et al. 2006:108). This is because it has become a key business driver.

The strategy will determine the goals of the purchasing process therefore, it is important that the performance is measured as it was stated earlier. The company also must develop a system in which they can measure the performance. The measurement system must be based on the company's strategy. (Iloranta & Pajunen-Muhonen 2008: 445-448.)

The measurement system is part of a bigger concept and at its best, it helps the company to clear the visions and determination of the procurement department. It also helps to determine the critical success factors. Determining the critical success factor is best to determine with the help of others in the organization. All the perspectives of how the procurement is performing should be measured in the company. They should be measured from the perspective of how the supplier performs, what is the innovation level and creativity of the organization, how the procurement department performs with other functions of the organization, and how the procurement department utilizes the supplier market. (Iloranta & Pajunen-Muhonen 2008: 445-448.)

2.2.4   Electronic Procurement

Electronic procurement (e-procurement) are systems that are helpful for companies to reduce costs and help companies to simplify the sometimes, complex purchasing process. E-procurement systems give direct interference with the supplier (Zunk, Marchner, Uitz, Lerch & Schiele 2014: 13-14).

E-Procurement systems also help the business-to-business (B2B) relationship. E-Procurement systems also help with the flexibility of the process and can also help with time

reductions (Zunk, Marchner, Uitz, Lerch& Schiele 2014: 15). There are currently many different explanations for the word e-procurement, for example, De Boer et al. (2002) defines e-procurement as a facilitator that enhances and simplifies the procurement process in all levels and utilizes the company's other functionalities like the ERP system. (Enterprise Resource Planning) Vaidyanathan & Devaraj (2008) has called e-procurement as the automatization of the purchasing process. Boer et al. (2002) also state that the definition also entails the offer process and rendering by utilizing electronic data interchange (EDI) and/or intra-and extranets or marketplaces.

In his book, *Purchasing and Supply Management* Van Weele (2011) describes e-procurement as solutions that support the purchasing process and all the electronic data that is exchanged during the process. Van Weele also divides e-procurement solutions into three different categories electronic marketplaces, electronic auctions and order to pay solutions.

According to Zunk et al. (2014) there are seven different categories where the e-procurement can be helpful for the organization they are: improved general conditions, improved collaboration with suppliers, shorter purchasing process, higher price transparency, lower cost in administration, improvement in systems (better flow of information) and acquisition of data. Van Weele (2011) adds that e-procurement also helps the procurement team to widen their scope and through it, they can have a larger sample of suppliers that they can negotiate with.

E-procurement systems can be divided into three different basic categories.

1. Buyer side procurement systems (BSPS)

2. Supplier side procurement systems (SSPS)

3. Third party marketplace systems (TPMS)

In SSPS systems the suppliers often offer internet-based catalog systems where the buyer can go and see available products, prices and delivery times and even buy straight from

there. BSPS Systems, however, are more for the buyer. These systems help the procurement team to manage their supply chain. They can also manage their supplier relationships through this. TPMS systems are controlled by a third party. They are systems that offer a place where the buyers and suppliers can connect with each other through web portals. (Mena, Van Hoek, Christopher 2018: 192.)

2.3 Standardized procurement process

International Organization for Standardization (ISO) is an organization that has been established in 1946 their purpose is to develop international standards that indicates the quality, safety, and efficiency (ISO 2018). ISO has created a standard for good procurement. It is part of the ISO 9001:2015 Quality Management standards. Companies can utilize these standards in order to get better results and minimize possible problems. Standardizing also can lead to better customer service and continuous improvement. In ISO 9001:2015 there are certain requirements for the companies to apply in order to get the ISO certificate.

Companies have understood the need for a standardized procurement process. By standardizing the procurement process the company can avoid the possible problems during the purchasing process. The goal with standardized procurement is to but all the information so that every party involved understands it. (Ackerley 2007:2.)

One way to help the standardization process of the procurement process is by utilizing EDI. It is a format that organizations can interchange messages, invoices, PO's, etc. Through the EDI companies can exchange standardized information (Speyer & Amerom Van, 2000:28).

A standardized procurement process will give the company needed transparency and supports the organization in its goals. A routine gives the company better quality and efficient outcomes. This all can be achieved through standardizations (Rottman, Glaes, Essig 2015:158).

E-procurement can be useful when standardizing the process. Since a lot of the aspects that are gained from e-procurement are useful when creating a standardized process.

2.3.1 Documentation of procurement process

Documentation is a vital part of the SCM, and it is one of the key components that follow the whole journey of SCM from the beginning to the end. Documentation is not only for the company itself and for its stakeholders but also governments and customs have regulations and for them documentation is also needed. Documentation needs to be handled with diligence and care. (Cook, Alston & Raia 2012.)

Documentation can also benefit from the company's EDI. It can help the company in the automation of the documentation process (Cook et al. 2012:60). Documentation is also part of business communication. Documentation is also vital for a legal reason and it protects the company in possible controversial situations (Bauld 2017:1). Documents such as POs are legally binding.

In some companies, the purchasing process contains a phase called purchase requisition (PR). It is a document for the finance department of allowance to purchase the item or service. This can be done by the project manager or the purchaser itself. (Murphy 2017) Usually, in large companies, this is done for bureaucracy reasons because that way power is divided equally.

The key documents in a purchasing function are:

- RFQ or Request for proposal (RFP)

- Quotation

- Purchase requisition

- Purchase order (PO)

- The shipping information

- The delivery notes

- Invoice

- Claim

Claim documentation is used only when needed for example if something has gone wrong with the delivery or with the product. They are used when the organization in demanding something from the supplier for compensation.

Contracts with suppliers such as frame agreements are also part of the documentation of procurement. The contracts can be long terms and new purchases may just have references to these old contracts. Part of this documentation in some cases can also be price-lists.

There can be more documents involved in cases for example when the supplier is from another country. Then the purchasing company might need packing lists, country of origin certificates (COO)

By utilizing a different kind of e-procurement systems the documentation process can be made easier since the e-procurement improves the transparency and software records all the steps conducted in the purchasing process (Zunk, Marchner, Uitz, Lerch, & Schiele, 2014:15).

2.4   Benchmarking

Benchmarking (BM) is shortly explained comparing own business process against those of competitors. BM can also be done between other firms that have similar processes. The meaning of this process is to identify, understand and adopt the practices that are outstanding from other organizations to improve own performance. (Bozarth & Handfield: 2008:60.)

BM can also be divided to process benchmarking and competitive benchmarking. In competitive benchmarking, the BM is done between competing organizations. Process benchmarking is on the other hand made between organizations that are not competing but have been identified having a superior process. (Bozarth & Handfield, 2008:60.)

BM can be seen, as a powerful method to identify procurements best practices and weak spots. BM can be done to operative and strategic tasks. (Brandmeir & Rupp 2010:5). Benchmarking has a lot of benefits. One of the main benefits of benchmarking is that benchmarking organization gets to measure the performance against the best-in-class organizations. By doing benchmarking organizations gets an insight into the key areas of processes. They can identify potential improvement opportunities (Lahti 2005:19). Benchmarking also helps companies be updated on the new and current best practices (Thompson 1998).

2.5   Maturity model

This part of the master thesis will review the concept of maturity model in more detail.

Maturity level means the level of professionalism in the purchasing function. With the maturity model, we can see what affects the company's performance. The concept of maturity management has expanded strongly. Originally it has risen from the concept of quality management. (Tontini, Castro de Cavarlo, Da Costa Schlindwein, & Tomarevski 2016:316.) Maturity models are made to assess the situation as-is (Pongsuwan 2016:46).

The first maturity model was developed by Crosby in 1979 in his book *Quality is free*. After Crosby, the Software Engineering Institute developed a model known as the Capability Maturity Model (CMM). This model was developed more for software development (Tontini et al. 2016:316).

In the literature, there exist numerous different kinds of maturity models. Most of the maturity models are conceptual. These models are summarized in table 1. Because there are multiple different adaptions of maturity models not all of them are listed in table 1.

Table 1. Different purchasing maturity models developed (Schiele 2007: 275).

	No empirical performance test	**Maturity-performance empirically tested**
Primarily deduced from dominant theory	Bhote (1989), Freeman and Cavinato (1990), Chadwick & Rajagopal (1995)	Schiele (2007)
Primarily observation based	Reck & Long (1988), Cammish & Keough (1991), Keough (1993), Burt & Doyle (1994), Barry et al. (1996)	Paulraj et al. (2006) Cousins et al. (2006)

What is common with maturity models that there is a limited number of maturity stages, for example, in Paulraj et al. study there are three different levels of maturity distinguished (Schiele (2007: 275-276). Levels are there to indicate the current situation and capabilities of an organization in a specific class of entities (Pongsuwan 2016:46). Maturity models usually have the same key components that are presented in each model. The components are presented in a list below.

- Number of the stages

- Descriptions of the stages

- Summary or a description of the characteristics of each stage

- Number of key process areas

- Number of activities for each area

- Description of each activity

(Lahti 2005:26.)

The difference in maturity models is the way the stage models of maturity is found and the way how the stages and dimensions are evaluated and delimited. Some of the maturity models are also empirically tested and others not (Schiele 2007:275).

Many of the maturity models can be divided into two groups. In the analyze phase, some of the maturity models use questionnaires that fit into the Liker scale, or then maturity grids questionnaires (Lahti 2005:26). For example, Schiele's maturity model (2007) uses the Likert scale. In the Likert scale questionnaire, the questions are done so that the respondent can answer them in scale from 1 to n. (Lahti 2005:26).

An ideal maturity profile should cover all the dimensions that describe maturity. Commonly strategic purchasing is one of these dimensions. However, it should be noted that strategic purchasing only represents one part of the maturity in purchasing. For example, the position of purchasing in organizations hierarchy influences the maturity of the purchasing process and that is why organizational structure can also be a dimension. (Schiele 2007:276.)

2.5.1 Procurement Competitive Capability Maturity

In 2016 Pongpanga Pongsuwan developed a maturity model called Procurement Competitive Capability Maturity (PCCM). This model is divided in to six different dimensions, and then the dimensions are estimated in four different stages. The dimensions that Pongsuwan's model covers are listed below and presented more detail in figure 4.

1. Organization

2. Process

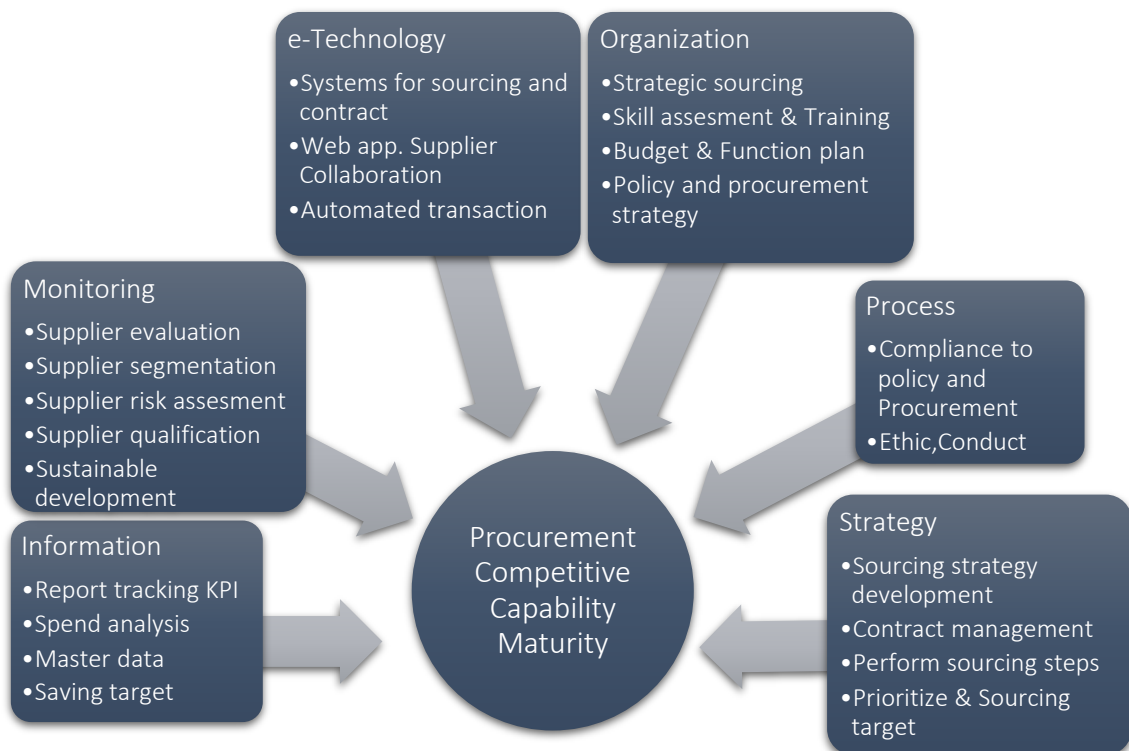3. Strategy

4. Information

5. Monitoring

6. E-Technology

Figure 4. Dimensions of the PCCM model.

The maturity of the organization in PCCM are measured through these dimensions. PCCM also takes account the e-technology and the use of different e-procurement tools. Dimensions are measured as the following table 2 indicates. These measurement dimensions are very common in all maturity models except e-technology. Most of models use the same kind of dimensions with term that may vary.

Pongsuwan's (2016) PCCM compared to Schiele's (2007) maturity model shows a lot of similarities between them. However, for instance Schiele's model and many older versions of maturity models' do not cover the e-Technology aspect

Table 2. Dimensions and criteria for measurement in PCCM (Pongsuwan 2016).

Dimension	Measurement
Organization	What are your skills and operating model to drive leading process in procurement?
Process	How is your procurement in line with the process?
Strategy	What is your performance in strategic procurement?
Information	What is your performance in strategic procurement?
Monitoring	How good is your supplier management?
e-Technology	How good is your deployment and adaption of technology?

2.5.2   Schiele's model

This study also examines the maturity model developed by Schiele (2007). Schiele's model has been empirically tested and it has been divided into five different dimensions. The dimensions cover:

1.   Procurement planning

2.   The structural organization of the purchasing function

3.   Process organization and purchasing function in the firm

4.   Established human resource systems and leadership model in procurement

5.   Purchasing controlling structures

Schiele's (2007) maturity profile is management-oriented. In all the dimensions Schiele (2007) has inserted smaller subdivisions. In this Schiele's model, he has used four different stages. Schiele's model can be easily adapted into benchmarking and its dimensions can be reflected on Brandmeier's and Rupp's article *Benchmarking procurement functions causes for superior performance*. In their questionnaire, the questions are divided into six assessment fields that are similar once to Schiele's dimensions. Rupp's and Brandmeir's dimensions are strategy, organization processes, methods and tools, human resources and supplier management. In figure 5 the dependencies of Schiele's model's dimensions to the procurement unit can be seen.
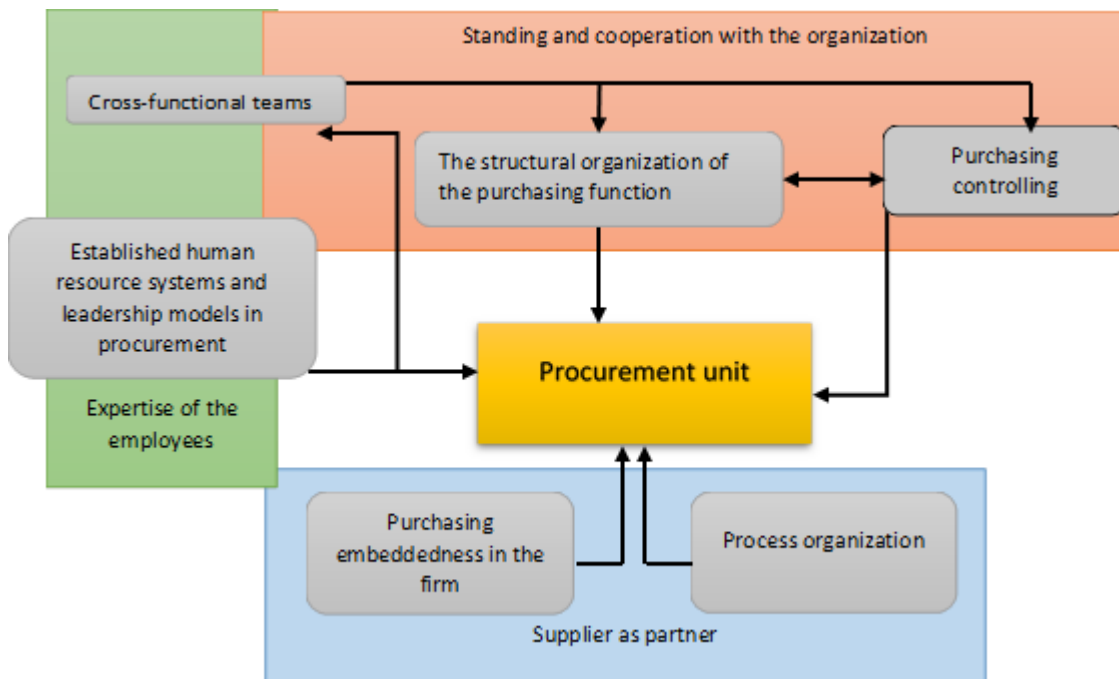
Figure 5. Dependencies.

Explanations to the dimensions are the following:

Procurement planning: Covers all the first operational functions in the purchasing lifecycle.

Organizational Structure of Purchasing: Covers the structures and mandates of purchasing and the strategic integration of purchasing.

Process organization and purchasing embeddedness in the firm: Covers the existing sourcing strategy, the supplier development, and evaluation and selection process.

Established human resource systems and leadership models in procurement: The expertise and professionalism of the purchasing unit. Covers also the existing job descriptions and requirement profiles. Recruiting and performance appraisal and career development.

Purchasing control: Covers the controlling systems, the processes and structures that are existing and the methods and tools that are used to support the purchasing control.

2.6   The Supply Chain Operations Reference

The Supply Chain Operations Reference model known as SCOR model is a model developed to measure the performance of the SC. SCOR model was developed by the Supply Chain Council (SCC) and was first introduced in 1996. (Supply-chain Council 2012.) Nowadays SCC is known as APICs SCC. SCC integrated to SCOR model the concept of business process re-engineering, benchmarking, and process measurement into a cross-functional framework. In the model, the process from order entry to the paid invoice is all gone through. It also goes through all the operations from owns supplier's supplier to the own customer's customer (Li, Su & Chen 2011:34). The model is based on the basic assumption that any supply chain process could be represented as a combination of the whole process (Georgise et al. 2017).

SCOR model version 11.0 is consistent with six different elements*: Plan, Source, Make, Deliver, and Return*. The sixth element *Enable* was added to as a new element to this version 11.0 of the model. Enable means how the whole supply chain is enabled by these other five elements (Supply-Chain Council 2012:2). From earlier models, the enable element is missing (Li et al. 2001; Ntabe et al. 2015; Georgise et al. 2017). These five elements are the management process. These elements are also divided into smaller categories and tasks. The elements are presented in figure 6. The explanations and definitions for these elements are explained in table 3.

In their study Li et al. (2001) state that the SCOR model helps companies to examine their configuration of a supply chain. Many studies have shown that the SCOR model is applicable in many industries, for example, the construction industry (Cheng et al. 2010) and the tourism industry (Yilmaz & Bititci 2006).

SCOR model can be seen as a standard for the modeling of the supply chain process. (Georgise et al. 2017). The model consists of key performance indicators. Also, the model has the best practices that will help companies in benchmarking and in their improvement
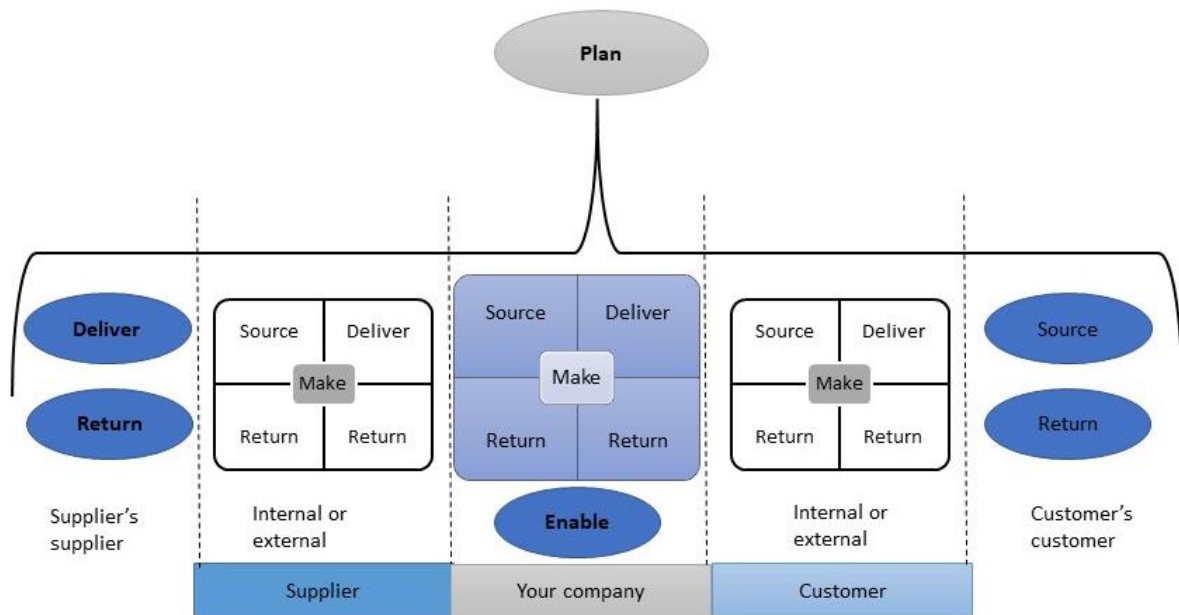
Figure 6. Elements of the SCOR-model.

activities (Georgise et al. 2017). The SCOR model does not attempt to describe every single business process organizations have such as marketing and sales (Supply-Chain Council 2012).

The main idea of SCOR is a pyramid. The pyramid is consistent of four different levels. The idea of the pyramid is to represent the company's journey to improve its supply-chain. *Level 1* determinates the scope and content of a supply chain. Also, the targets for the supply chain are set. In *Level 2* the operations strategy is developed and the capabilities for the supply-chain are set. *Level 3* is about configuration of individual process. The final *Level 4* is about implementing. In the final level the activities that are performed are described. The implementation is done to achieve required performance. (Supply-Chain Council 2012)

Table 3. Definitions of the five elements (Georgise 2017:19).

Score process	Definition
Plan	Means all the activities needed to gather the information of customer requirements, resources that are available and the balancing of requirements. Determining also the capabilities.
Source	Ordering, scheduling and receiving goods and services.
Make	The process of creation materials in to finished products or services.
Deliver	The activities that are needed to create, maintain and fulfil the orders from customers.
Return	Reverse flow of the process. Customer returning goods back to the seller.

2.7 Summary of the models

For this study, the maturity model developed by Pongsuwan was utilized. The model called PCCM suited best for the needs of this study. This model was chosen over Schiele's model and the supply chain reference model because PCCM covers all the aspects wanted to discover in this study. It was the most compatible with the research questions of this study.

Schiele's model could have also been an option because it also covers a lot of the subjects of this study. However, it does not consider the impact of e-technology and how it can be

an advantage or disadvantage to the process. E-technology and its aspects was a key question in this study for the case-company because they want to utilize an EDI/ SCM platform program in their process.

SCOR model was not chosen because of the nature of this study and the method of how the study wanted to be conducted. SCOR model is more suited for companies that already have an established and long-running supply chain process. SCOR model does not therefore suit the best for this kind of study because of the case company. SCOR model also concentrates more detail in the process and for example in cycle times. These are information that in this point of the case company is not necessary. SCOR model is also more used in the manufacturing industry than in project business where nothing is bought to stock.

PCCM was the most applicable for this study. It was the most compatible with the research questions of this study. It also suited the way the study was conducted. PCCM questionnaire was easy to execute and conduct for the companies interviewed. PCCM was the best option also from the viewpoint of time and resources.

3 METHODOLOGY

In this chapter of the thesis the research methods used are presented. First the method used is presented. The approach is described and after that the data collection is presented and the analysis method. The final part will cover the validity and reliability.

3.1 Research approach and design

In this thesis, an exploratory approach was utilized as well as there, are features of an inductive approach. According to Saunders (2009), there are three ways of conducting exploratory research, interviews from experts, search from the literature and focus group interviews. In exploratory research, the purpose is to find out what is happening already and through that seek new information.

Inductive research means that the conclusion of the study is based on several observations. This study focuses on finding the key success points of the purchasing process. This study aims to make observations gathered from other companies and then draw in a conclusion from those observations. First data will be also gathered from the literature review. This data that is gathered from journals and books of the industry and will then be reflected in those observations made from interviews. Data gathered from the literature will also support the observations and help to make the conclusion of the study. In inductive research, there is a habit of gathering more qualitative data because it suits better the purpose of inductive approach. (Easterby-Smith, Thorpe, Jackson & Jackson 2008.)

A qualitative approach is also adopted in this thesis. The data that will be gathered comes from personal one-on-one semi-structured interviews and therefore qualitative approach is best suited for this study. Semi-structured interviews are suitable for qualitative research and are often referred to as qualitative interviews (Saunders 2009). In a semi-structured interview, the flow of the conversation determines the context. There are guideline questions made in advance. In order to get the best end results, more questions can be asked during the conversation. This way the subject can be explored more and widely.

This study also is a single case study conducted for a one case company. Typical case study answers to questions "why?", "what?", and "how?". Case study as stated before is widely used when related to exploratory research. Because this is a case study the data is also coming from multiple sources as stated earlier from interviews and from literature.

3.2   Data collection method

The method used to gather the empirical data for this thesis was semi-structured interviews. This data is also the primary data of this study. According to Saunders (2009), there are three different ways to conduct interviews: structured, semi-structured and unstructured or in-depth interviews.

In structured interviews, the interviews are highly organized and questions to each interviewee are pre-determined and identical. Usually, in structured interviews pre-coded answers are used. In semi-structured interviews or in unstructured interviews the person doing the interview can conduct more questions during the interview. In semi-structured interviews, there is a list of questions designed beforehand but questions can be added during the conversation. The order of the questions may also vary depending on the conversation flow. Unstructured interviews are the most informal of these three methods. In this method, there are no pre-determined questions. The interview is solely based on the aspect chosen by the person doing the interview.

A semi-structured interview was chosen for this study because it suits best the needs of this study. In order to ensure that same process phases of procurement were covered in all interviews there needed to be an interview structure. However, because the interviewed companies' sizes varied there needed to be room for more questions if needed. This way the study can find all the differences and similarities in the company's procurement process. Also, according to Saunders (2009), the semi-structured interview supports the exploratory method this thesis also uses. This method also supports the qualitative analyze used in this study.

3.3   Data Collection process

The empirical data for this thesis was gathered by performing semi-structured interviews in different companies. Companies size varied from large global companies to smaller businesses. This is because the case company in question is a start-up company. All the companies, however, were in the field of technology. During the interviews, there was also time for open discussion. All the persons interviewed work in the field of procurement and SCM. Table 4 summarizes all the details of the interviews that were conducted. All interviews are one-on-one interviews.

Because SC and procurement is a hard and complex process and it is no longer process orientated. It has a more holistic approach to encompassing strategies and system orientation. This can be seen in the questionnaire made for this thesis as it has been divided into six assessment segments (Brandmeier & Rupp 2010: 8). The questionnaire was done in Finnish (Appendix 1.) and then translated in English (Appendix 2.). The questionnaire can be found in the appendices section of this thesis.

Before conducting the final interviews, a test interview was made in order to test the questions. The test interview was done with a person working in the field of supply chain management and her title was a supply chain manager. After the test interview, some corrections and new questions were added to the questionnaire. Also, some comments were considered by the person interviewed for the final interviews.

The interviewees were contacted by e-mail in order to arrange the time and place for the interviews. The questionnaire was sent beforehand to the interviewees so that they could see before the interview the topics of the discussion. The topics of the interview were:

1. Organization
2. Process
3. Strategy
4. Information
5. Monitoring
6. E-technology

In the beginning of the interview a permission was asked to record the interviews, confidentially. Also, a possibility to express if they weren't comfortable to answer some of the questions was also given. After the interviews the recorder material was transcribed. From the transcribed material a summarized, answers were drawn into a table to make the comparison of the answers easier.

Table 4 Summary of the interviews.

Inter-view	Com-pany's size	Position	Years of working in SCM	Date	Length of the interview
Buyer A	Large	Supply chain manager	8 years	9.1.2019	47.54 min
Buyer B	Large	Supply chain director	26 years	17.1.2019	33.36 min
Buyer C	Small	Production manager	6 years	24.1.2019	36.40 min
Buyer D	Small	Procurement manager	12 years	31.1.2019	42.35 min
Buyer E	Medium	Account Manager	6 years	6.2.2019	47.45min

3.4   Data analysis

In this thesis, the data collected from interviews are analyzed by using the PCCM model presented earlier in this thesis. Pongsuwan's model developed 2016 best suits the analyses

since it takes account of all current aspects by providing a dimension for the e-Technology also.

The data collected from the interviews were compared to the PCCM model. The answers were analyzed based on the four stages Pongsuwan (2016) has established. The four stages are the foundation, established, leading, excellence the criteria for each dimension are shown in Appendix 3. The analysis is divided into six different segments in order to make the structure more consistent. An analysis was done separately from each interview. Each dimension was analyzed from the interviewee's point of view. After that, a conclusion was made to found out what are the key points of the process and best practices to it.

3.5   Validity and reliability

To ensure the validity and reliability of this research in the literature section of this study only valid academical journals, books and scholars are used. Sources and theories are from authors and scholars that are widely known and appraised. The source of the articles is also from well-known and appraised publications that are relevant in the field of business and industrial management.

The validity of this research was increased by co-operating with the case company and by doing a weak market-test for the company in which based the end results were directed more to suit the case company's needs.

In their article *What makes a good case study*? *A positivist review of qualitative case research published in Industrial Marketing Management*, *1971–2006* Beverland and Lindgreen (2010) state that there are three different ways to ensure the reliability of a case study. These are:

- A standardized interview protocols.

- Constructs well defined and grounded in extant literature.

- Providing an audit-trail by providing access to data.

In this study, these three points are tried to follow however because confidentiality reasons providing access to the data is limited, and full interviews are not shown.

The subject of this thesis also is widely known in the literature and examined. That is why many of the key concepts and terms have been used interchangeably to ensure the reliability and keep the study clear we use the terms in the way they are defined in chapter 1.4.

Even though a structured interview would enhance the reliability and repeatability of this study a semi-structured interview suits this case better. This way the interviewees can speak more freely of their views and insights when it comes to SCM. This way a deeper interview can be conducted. A highly structured methodology would also, according to Saunders (2009) increase reliability. Saunders (2009) also states that case studies might not be seen as scientifically as others but through case studies, the theory can be challenged and the possibility to provide new research questions rises.

Because this is a single case study, for further testing the results, it would be beneficial to test the results gained from the data collection in other similar cases. That way the findings could be generalized and see if the findings are truly applicable in other cases. This is one of the reasons that Yin and Campbell (2003) argued that multiple case studies are preferable. Yin also states that if the study is only a single case study it just strongly justifies why it is so. In this study, one case-study was used because of time and resources. Thus, further study could be made and test the finding of this study to other cases. All the methodology aspects that are key to this study are summarized in table 5.

Table 5. Summary of the methods applied in the thesis.

Key methodology aspects	Adopted method
Research approach	Exploratory and Inductive.
Research design	Case study.
Data collection	Semi Structured interviews, Sample size 5.
Reliability	Reporting is transparent as possible, interviews recorded and made in to transcripts.
Validity	Valid academic material from valid journals and books related to the field of industrial management, experienced participants.
Case description	WOIMA corporation, delivering waste-to-energy power plants for developing countries.
Analysis methods	Case-analysis, Discussion based on the theoretical framework (PCCM).

4 RESULTS

For confidentiality reasons, only the name of the case company (WOIMA Corporation) is mentioned. The persons interviewed will be discussed as buyer A and so on. Also, the companies they work are not revealed however the size of the company can be seen in table 4. The transcribed interviews are only viewed by the author and destroyed after finishing the study for confidentiality reasons. In appendix 4, a shorter version of the answers to each question is presented.

4.1 Results of the interviews

The results of the interviews are analyzed through dimensions that are shown in the PCCM. From those analyzes and from the literature that is related to the subject the conclusions are made and the end result of the key points that enhances the procurement process are presented.

4.1.1 Organization

In PCCM organization and procurement are studies on how well, does the procurement link to the whole organization and what are the capabilities, and how the different functions can support each other in the process.

While interviewing many of the target companies they had a different kind of ways of how the procurement is linked with the organization. It was noticed that with the bigger companies the procurement was more involved with other functions. One of the interviews stated very clearly that the procurement team should be involved already in the designing phase.

> *I think purchasing should be involved from the designing of the project to the end.*
> *– Buyer B*

All the interviews, especially from the smaller companies, stated that they want to evolve their purchasing more and try to implement the procurement department more in the development and sales phase.

In Pongsuwan's article *How does procurement capability maturity affect e-Procurement adoption and leverage purchasing in the supply chain* (2016) he states that maturity is best shown in the organization when the knowledge is high and there are cross-functional teams that work well together. Pongsuwan also states that this can lead to a competitive advantage.

What more the procurement team can be involved in the designing or even in the sales phase the better. Because then they can have the most effect on the result.

> *Most of our savings we get from suppliers are already received in the sales phase.*
> *– Buyer A*

Not only by involving the procurement in the sales phase it can help companies to win projects when they have negotiated good prices from their suppliers. Many of the smaller companies interviewed had cross-functional teams but it was not clear of how the procurement team should be implemented therefore many of them stated that designers usually ask offers from suppliers during the sales phase. However, all of them also stated that it should be the procurement department who asks the offers in the beginning and all of them were moving towards this model.

> *We are trying to unify our units so that purchasing would be part of the designing of the project, but right now it is not. – Buyer E*

For smaller company they have smaller resources when it comes to the personnel and that is why it might be harder to assign a resource from procurement to support the sales and designing phase. That is why it is important to have cross-functional teams that share knowledge together. In smaller companies these cross-functional teams could be easier to implement and develop. Problem with bigger companies is that there are too many

people working on same things and the information about who has asked what might get lost.

> *Sometimes the communication does not work between colleagues and sometimes people who make the offer requests don't know anything about commercial conditions and in the end, it makes my job harder. – Buyer A*

Like buyer A stated it would be beneficial if everyone had more knowledge about what everyone does.

Because WOIMA is a small company and with a small team it would be beneficial to them to start the model of involving purchasing from the designing and sales phase. This could give more room for getting savings and help to develop the relationship between suppliers. WOIMA could also start with small cross-functional teams where either the designer or person responsible with purchasing communicate with each other. That way both can learn from each other and knowledge is shared.

4.1.2 Process

In PCCM the process is referred to as how well does the whole procurement process work. It also takes in if it is measured and monitored. It inspects how the process works and how it is in line with the company.

From the interviews, the first thing was clear the bigger companies had a much higher amount of bureaucracy compared to the smaller companies. However, each company's, processes were very similar to another. All of them followed the basic procurement model that was introduced by Van Weele (2011) and is also presented in this thesis in chapter 2.2. The amount of bureaucracy has a clear affect to the process. Four out of five interviews said that the process always works according to the agreed plan. However, Buyer B was strongly against of standardizing and clearly stated that it would not be possible to standardize the purchasing process because Buyer B stressed the importance of flexibility when it comes to purchasing

Quite standardized depends on the situation but basically there are 2-3 options where to choose. – Buyer A

I think you can't standardize the process. It always depends on the situation. I think standardizing is only a downfall, because you need to be flexible as possible. – Buyer B

Currently, we are moving towards standardization. Through utilizing our new ERP system. – Buyer D

Buyer C however pointed out that if you have a standardized process the room for errors becomes much more, smaller.

I think it is a big advantage when it comes to purchasing. Room for errors becomes smaller. – Buyer C

What came out from the interviews was that the company should have a basic operating model because then depending on the situation you can add or take out something. Some of the persons interviewed mentioned that a part of the process at least should be standardized for instance the operative part of purchasing that includes sending orders and order follow-ups should be standardized. The most efficient would be that the operative part of the procurement is standardized and that everyone would obey this process.

When regarding to WOIMA because it is a start-up company, they should think about what they want to standardize and what things are reasonable for them to standardize. Because during the interviews Buyer E stated that:

However, at small organizations I see that it also might be difficult to do and keep it going. It should not be the sole purpose because then it will take time away from everything else. – Buyer E

Flexibility and the possibility to adjust and measure the process is important (Pongsuwan 2016:46). This same statement was also received from the interviews. The process and its

standardization should not be the sole purpose because then it will take resources away from somewhere else.

Because nowadays we live in a global fast-changing world companies need to be even more flexible than ever. That is why there needs to be room for changes in the process. Even Pongsuwan states in his article *How does procurement capability maturity affect e-Procurement adoption and leverage purchasing in supply chain* (2016) that the process should be adjusted due to changes in markets.

When asked about three things that the interviewees thought to be as the most important things that make the purchasing process successful the answers varied quite a lot. However, one thing that was common almost everyone mentioned the importance of co-operation and communication. Buyer C mentioned also the importance of the systematic process.

In most companies, ERP systems are used to ensure the smoothness of the process. ERP systems also give the company the automation they need in their procurement process. Automation of the process will also help in the standardization of the process. However, it is also important and maybe even more important to be able to align the process with suppliers. (Mena, Van Remko & Christopher, 2018:26.) More about suppliers and aligning them with the process will be presented in the next chapter.

4.1.3 Strategy

In PCCM the strategy is how well does the strategy support the procurement and how the procurement strategy is aligned with the organization's strategy. Strategy is also about sourcing and how suppliers are selected. It also studies if there are any strategy when it comes to the company's procurement.

Strategic procurement or the procurement's strategy main goal is to determine the goals of procurement. This involves also the actions of the company's suppliers. How well their

suppliers perform and deliver. It also includes the process of selecting the right kind of suppliers.

In PCCM a company whose strategy and its measurement are part of daily activities is considered to be in the level of excellence. This also means that the procurement strategy is visible and known for everyone in the organization.

Surprising factor that came out from the interviews was that most of the companies do not have a clear strategy when it comes to purchasing.

> *Our strategy should be based on the whole organizations strategy however currently the strategy is not clear. – Buyer A*

> *We don't have any specific strategy. Of course, we have basics requirements from supplier for example we want ethical suppliers that can deliver what is promised. But a big amount of our decisions is determined by our customers. – Buyer C*

> *Right now, we are updating our strategy to a written form. Before there only has been a spoken strategy not an official and written one. I think strategies are good if they are realistic and can be followed through. It is a good guideline for everyone. – Buyer D*

In the PCCM model strategy and its existence is highly recommended and during the interviews, everyone stated that strategies are good and useful guidelines for the company. However, strategies should always be realistic and reasonable.

> *A strategy will help in the day to day basis decision making process. However, you must have a certain flexibility and common sense when it comes to strategies. – Buyer E*

Strategies should be there to make the guidelines clear. Usually, in bigger companies, the roles and responsibilities are not always clear for everyone. A good and clear strategy

could help to explain and clarify what we do and therefore the information flow would be better.

In small companies, strategies might be hard to do and handle. They might not have the same kind of resources to implement them as bigger companies have. That is why at first the procurement strategy could be involved in the business strategy. After when the company has grown more then, an actual strategy for procurement could be done.

A part of procurement strategy is usually what kind of suppliers we want, how they are selected, are they measured, contracts and price lists and price negotiations are a part of this also. One of the important aspects when it comes to procurement is to determine your risk suppliers. From your own products you need to know the critical components. Then you need to know how to segment your suppliers.

> *You must learn how to segment your products and that way you can segment your suppliers. – Buyer B*

For instance, if you have component and you only have one supplier for it then that component and supplier are critical for you.

> *For us I would say that the downfall is that we have all our eggs in one basket. So, if something happens to our supplier we are in trouble because we don't have a second option for supplier. – Buyer E*

It is not a good idea to have only one supplier per component because this might lead to big risks, when it comes to delivering the end product for the customer. The relationships also with suppliers are important when it comes to the strategy related to the suppliers.

A lot in the interviews were discussed about the relationship between a supplier. Everyone stated that a good and tight relationship with a supplier can only be beneficial for both parties. However, with this kind of relationship, there are always risks. With a tight relationship, both can help one another better.

You must have tight relationship if you want to succeed. Business is not just emails, you need to meet partners face to face so that you learn to know people.
– Buyer B

Suppliers can also be included in developing the strategy and during the interviews, it came apparent that every company expected innovation from suppliers. Not from all suppliers but from those whom they have closest relationships they provide an important component for them.

Through segmentation of the suppliers, it can be detected which one's the company should build a stronger and tighter relationship with. You do not have to have a tight relationship with every supplier, for instance, if the supplier provides something general like nuts and bolts you can get those everywhere and that is why a tight relationship is not needed. That is why you should concentrate to have a tight relationship with those suppliers who are critical for the company and for the projects.

When it comes to those general suppliers and general components, they should be automated. In a way that purchasing general components does not take so time and would be as easy as possible. Companies should also consider if they want to standardize some parts of their components. This would make the whole process faster. Also, the downsize is that it will take away the flexibility then.

I think it is good that we have these certain components already that is standardized so we know that it will always go the same way. We also have a plan to standardize certain parts of our products. – Buyer D

A good way to segment and manage your suppliers could be to divide them in to three different categories.

1. Strategic Suppliers

2. Tactical / Core Suppliers

3. Transactional Suppliers

In the first category, there are suppliers that are the most critical ones to the company. They are the ones that help achieve the business strategy. These are also the ones that the company needs to have the strongest relationship with. (Mena, Van Hoek, & Christopher 2018:170-171.)

The second category is the tactical suppliers most likely the company will have more of these core suppliers than strategic suppliers. These are the suppliers that also most likely will have the biggest spend from the company and they are relied on because of their reliable performance.

The third category has 'commodity' suppliers. There are the suppliers that offer the company products that are widely available such as bolts and nuts. In this category, price and delivery are the most important things (Mena, Van Hoek, & Christopher 2018:170-171). By organizing the suppliers in different segments will also help the company in risk management. A way to categorize the suppliers can be seen in figure 7. It also shows the importance of the strategic aspect and how does the complexity of the market have on the suppliers.

Figure 7. Supplier categorization (Mena et al. 2018).

4.1.4   Information and Monitoring

Information and monitoring in the PCCM are about how well information is shared and how it is documented. It is also how the suppliers are monitored and are they evaluated. It is also about how much documentation and communication is happening in the company and how transparent the process is. Both information and monitoring are therefore to see how well, does your company perform, because they measure the process.

As stated in the chapter 2.2.3 it is important to measure the process because otherwise it would not be known if the process works and how well does it work. Information is not just measurements, but it also includes how people communicate in the workplace and outside own organization.

Everyone mentioned that they have their ERP or other systems that measure some of the key measurement of performance and everyone had in plans or are doing right now the supplier evaluation. In some of the companies the evaluation was done regularly and in others after every project. In some of the companies, the evaluation process was just getting started and becoming a regular basis operation.

Especially the evaluation of critical suppliers was seen beneficial.

> *We do this for our critical suppliers. And sometimes we go case by case the details of what are the risk and possible situations. In the future, one of our goals is to make this a bigger part of our procurement. I see that this is a very important point when it comes to procurement. This way you can also develop your co-operation. It can really deepen the relationship. Because this way we can also see what we can do to make our suppliers work easier. – Buyer E*

The evaluation is a very important factor, and everyone supported doing that. Such as buyer E stated it can be also helpful when developing your co-operation with the supplier. If the supplier does not work well it can be harmful to the whole project.

> *You are only good as your suppliers. – Buyer E*

It is important to monitor the suppliers and keep updated on the process. For instance, by expediting. Expediting is also an important part of the whole purchasing process. Expediting means checking up on the supplier on how the order is progressing (Van Weele 2010:9). This can easily be done on a regular basis in the organization. This is also important to do especially when the ordered component is critical for your project.

Utilizing expediting and communicating with the supplier can help detect problems earlier and even before it can influence the supply chain and its success. Communicating not only with your co-workers but with suppliers is important. Communication is not just about emails you really must get to know your suppliers and meet at least some of them in person.

Both bigger companies interviewed admitted that communication is hard and sometimes other people in the same organization do not know what the role of procurement is. Communicating your roles and responsibilities is important. That would increase the knowledge of what others do and clarify everyone's role. That would also clarify the

whole process for everyone in the organization. By clarifying the roles and adding more information would also help to simplify the information flow.

Information flow is extremely important, and the meaning of communication was emphasized. Also sharing information and knowledge is important. When the communication is transparent it is easy for everyone to see what has been happening and what things have been asked. Adding more transparency between you and your organization will help the whole process.

For instance, utilizing EDI systems can help the process become more transparent. Also, the use of e-technology systems can help companies in this. During the interviews, one of the persons interviewed mentioned the importance of ERP and how it should be flexible and a system where you can get data and those measurements.

> *It helps creating more transparency to the process. – Buyer A*

> *You also need a good ERP system. It should make your job easier. It also needs to offer you some data. That you can use. – Buyer E*

It is clear, that in these days a lot of these problems that occur in information and monitoring can be helped or even solved by utilizing e-technology. More about e-technology and how it can help is in the next chapter.

4.1.5   E-technology

In this modern world, there are numerous technological options available for companies to use. E-technology has tremendously changed the world during history. In PCCM e-technology is about how well does the company utilizes the e-technology options that are available.

During the interviews more was concentrated to find out if companies use and e-technology solutions related to procurement. This was due to the fact the case company has an interest in utilizing an e-technology solution and have started to experiment with it. The

smaller companies did not have the same experience as the bigger companies had but however, they were familiar with them either in previous jobs or by personal interest. In the bigger companies, these are utilized daily. However, in the smaller companies, they might not have their own e-technology systems, but they do utilize the systems of their suppliers when they offer an Internet-based procurement portal.

We use our biggest suppliers' online portals. They are very useful. You can see the prices and delivery times right from there. However, we don't ourselves have anything like this. – Buyer E

Yes, we have an internet-based procurement system that I use daily. It has a lot of good qualities however not everyone uses it as it should be used. It helps creating more transparency to the process. However, it is quite new and has some trust issues but other than that is gives good information and it is easy to use. – Buyer A

Because of technology there are many possible options where to choose from when considering an ERP or EDI system for your company. However, when choosing a new system to use, you must make sure that is useful for you and that it suits your needs.

Yes, I have looked and tried many systems. It is hard to say if they are good or no because some of them are but some of them aren't. But I do see them as useful and they do have a lot of potential. It is always good if these systems help you to save on cost and amount of papers. – Buyer B

These e-technology solutions are widely seen as a positive option. Because they do help to reduce the paperwork and save on costs. Dependent on the system they also provide more transparency and can even make the information flow easier. E-technology solution can also be helpful when wanting to standardize and make the process automated.

However, when implementing an e-technology solution you need to be sure that it is implemented properly, and training and possible tutoring are easily available. Good implementation is the key when a company starts utilizing a new program. If this is not properly done there is a risk that a lot of money is put into something that people won't use. Like Buyer A stated even though many considers the system great and easy to use not all of them are onboard utilizing it. Then a lot of money and resources are wasted on nothing.

During the interviews, it was also discussed if the companies own supplier have systems together that they utilize. Only one company had experience of this kind of SSPS system and doing collaboration in their customer's EDI. This can be also problematic because who is for instance responsible for the training of the supplier so that they learn how to use other company's EDI system.

> *If we would have this kind of systems, someone would need to train the suppliers on how to use the EDI. In my opinion I think that suppliers would not utilize the EDI still they would just continue to send offers by email. – Buyer A*

WOIMA is considering utilizing an SCM platform that, requires the participation from both parties even though it is a BSPS system. This could be a possible risk since it might be difficult to get the suppliers to collaborate in a new system.

In conclusion e-technology can be beneficial to the company however you need to know how to utilize it. You also need to train your staff so that everyone can use it. It also needs to be simple. Best kind of e-solution is one that suits your company needs. Because there are a big variety of programs available it might be a difficult task to find the best suited one for your own use. It is essential that e-technology solutions will provide an advantage for the company

4.2   Recommendations for WOIMA

In the end procurement could be divided into three different process that needs to work together and must be in line with each other. These, and their operations are presented in Figure 8.
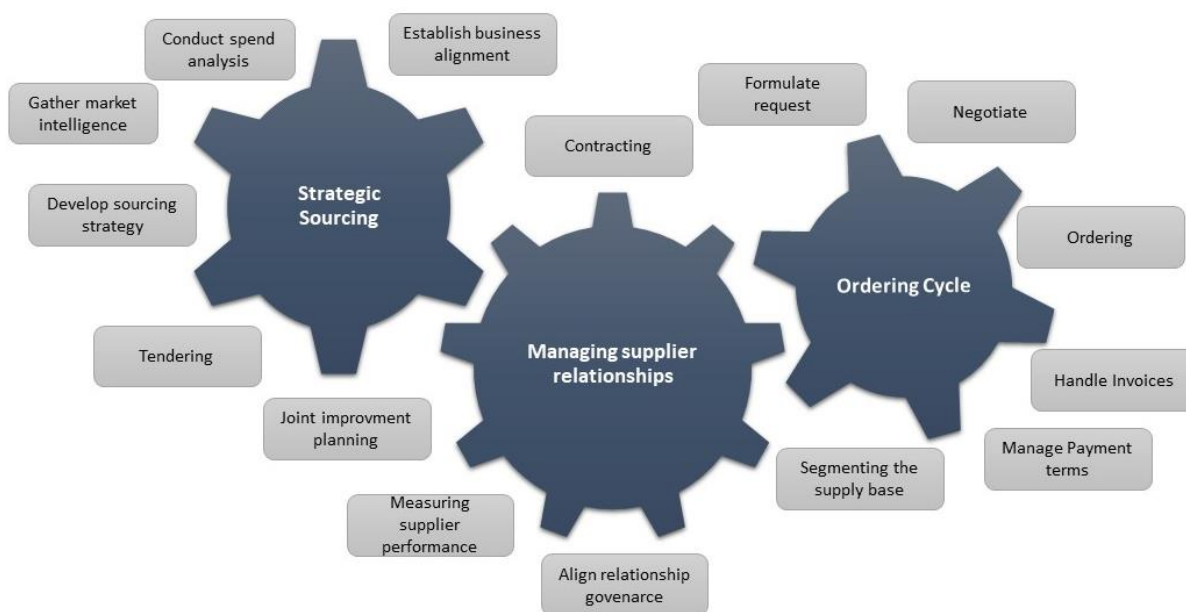
 Figure 8. Main processes of procurement (Mena et al. 2018).

Because WOIMA is a start-up company they should focus on getting the basic operation of these three different processes to work. That is why there is not any necessary need for a procurement strategy. They should focus mainly on aligning the procurement process with the company's business strategy and over time develop the procurement strategy.

Procurement should also be involved in the projects right from the sales phase. The earlier procurement is brought in to the projects the better. The current situation with WOIMA is that right now when the personnel amount is small it is easier to keep the procurement involved in the sales and designing phase. They should continue to do that also in the future because that way WOIMA can generate the best possible outcome.

This is also a challenge for the future that needs to be tackled however by determination this also easy to handle. This can be done for instance by keeping regular project meetings and keeping everyone involved informed. Creating a project procurement plan for each project would also be beneficial.

Importance of making common rules and communication in their own organization is important. These are easy to do when the personnel amount is relatively small. The rules then must be implemented and followed. When the company gets growing it is even more important that there are rules and guidelines that everyone follows.

The following of the rules needs to be inserted in the organizational culture, then in the future, these are easier to implement on another people's behavior and show that in this organization we follow the rules. It is important to know who has done what and what has been agreed. This will help in communication and in the process. In every business process, the importance of communication is vital. Communication needs to be done in the organization itself and towards the suppliers.

The second thing that is important in procurement is the identification of the risk suppliers and segmenting all their suppliers. This is done through the identification of the key components of their projects. That will help in the building of a relationship with a supplier. Then the company can easily focus on those ones that are crucial to them and to their business because they are the ones, they need to have the strongest relationship.

This is something that in the current situation of WOIMA has already begun and they have started to identify all potential suppliers. A more concrete way of segmenting them would also be beneficial for WOIMA. Also aligning the suppliers in a way that which of them are the most preferable to co-operate with. In the future, it is also useful to keep searching for the right partners and finding other possible options for suitable suppliers. This segmentation of suppliers will also help WOIMA to build up the relationships they want and to achieve their goals together with the suppliers.

The relationship with suppliers and supplier network is substantial. Especially because of the business model the case company as they need to have a strong supplier network. The need for strategic suppliers, in this case, is important however the company also needs other possibilities and keep good relationships with the tactical suppliers. It is a downfall if all the suppliers are strategic because when something happens it might put the whole supply chain of the project in risk. It is good to keep in mind that you are only as good as your supplier.

Because the case company is a start-up company, and in the beginning, the operations are wanted to keep in small scale the need for good suppliers and co-operation high-lighted. In this case, a lot of responsibility is moved to the supplier and this is a question that needs to be considered. Is this a risk they want to take. However, the risk can be reduced by enough motoring and expediting.

Evaluation of the suppliers might not be so important during the beginning but in the future will become a critical success factor for WOIMA. That is why at least after each project it would be good to review the project and how it went and discuss the co-operation with each supplier and see if there were any downfalls. This also something that the case company is committed to doing and have planned to do this in a regular phase. This could be even done continuously and even when selecting suppliers. WOIMA could estimate in the beginning and evaluate if these suppliers are the ones we want to work with.

Because WOIMA is a start-up company, the processes can be flexible because there is not any heavy bureaucracy in the processes of the company. This is also something that can bring a competitive advantage to the company as they can be as flexible as possible. The part of the process that should be standardized is the operative part of the procurement. This way the risk of making mistakes reduces. These include the ordering and expediting and handling of the invoices. The important thing to remember is that the focus should not only be in trying to focus on the following procedures. This could take time away from everything else that is important

Automation for the documentation of procurement process can be done through utilizing their SCM platform. Utilizing it will also increase the amount of transparency for their own organization. However, if the utilization of the SCM platform between the suppliers is not beneficial and suppliers are not involved in utilizing the platform, then other options should be considered. It is important to keep in mind that these kinds of programs are supposed, to help and make the process faster rather than make it more difficult. This might lead to the growing importance of using their ERP system in the procurement process. The best option would be if the SCM platform and their ERP systems could work together and communicate with each other.

5 DISCUSSION

5.1 Conclusion of the study

This study was done to find out what are the key elements that enhance the procurement process. This study was also done to find out how a start-up company can utilize the success factors that enable a high performing procurement process. These questions were the aim of this study. The study was conducted for a start-up firm that does project business.

This study was conducted by utilizing valid literature found in the field of procurement and supply chain management. The focus was highly on procurement and its activities and how these operations perform in real-life situations.

The methodology was exploratory and inductive. The empirical part of this study was conducted by doing semi-structured interviews for persons working in this relevant field. The size of the companies interviewed varied because in this study the aim was to get a wide perspective on how other companies handle their supply chain. Also, because this was a case study and the target company in question is a start-up company, this way an end result that suits best the company's needs could be found. The methodology in this study is easily repeatable and could be utilized in other studies.

The theoretical background of this study focused highly on the maturity model developed by Pongsuwan. Maturity models are developed in order to measure the maturity of the supply chain. Maturity models have a long history and they are utilized widely and could be utilized even to study something else than the procurement process.

The finding from the theoretical background supported the findings from the interview. Validity of the study has been ensured by presenting the results of the study in the case company as well as asking comment concerning the usefulness of the results in practice this can be also called as a weak market test.

The collaboration with suppliers and communication was found as the key element in enhancing the procurement process. Supplier evaluation and transparency in own organization was also highly appreciated and deemed to have a big effect on the process. One of the key points of the purchasing process was the selection of the right kind of supplier.

Even though the standardization of the whole process was not encouraged the standardization of the operative activities, such as making orders and handling invoices, was encouraged. The process should also be kept as agile as possible. The integration of procurement unit to be strongly involved in the whole projects was also encouraged.

E-technology solutions nowadays are almost inevitable, but you need to find the right solutions for your company. Because there are multiple options the finding of the right one might be difficult. These solutions, however, should help the process and not make it more difficult.

In conclusion, some limitations were found regard to this study and they are presented next. The limitations, however, offer possibilities for further research on the subject.

5.2   Limitations

This study followed the guidelines of making a qualitative study. However, there are some limitations regarding this study. First, more interviews could be conducted in order to get a wider view of the industry and it challenges. However, many were reluctant to participate in the study and share their insights. The viewpoints are only from managerial point of view and that why the contribution is mainly managerial. There could also be discussion of what way the recording of the interviews effects the end results.

More interviews could have given a wider result when more opinions could have been seen. Time resources were also a limitation and that is why a greater amount of interview wasn't conducted. Also, the end results are opinions and viewpoints of persons working

in the field of supply chain management and they can't be generalized to a bigger population even though many findings from the literature supports them.

A multiple case study could also be conducted because a single case study has its limitations, and this also affects the generalization of the end results. As Yin and Campbell (2003) argued that multiple case studies are more preferable than single studies.

Theoretical contribution is limited because the study utilized the material and journals that are available for the students in the University of Vaasa, however theoretical sources used in this study are widely appraised journals and scholars.

5.3 Further research

This subject could be also examined from the prospect of project deliverable business and focus on what are the key elements that enhance projects. Also, further research could be made on how does the e-technology solutions truly effect, on the procurement process and how they could be utilized in the best way. More study could also be made from the collaboration of a buyer-supplier relationship.

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APPENDICES

Appendix 1. Interview questions in Finnish.

Alkutiedot:

Mikä on sinun, työtehtävä ja kauanko olet työskennellyt tällä alalla?

Organisaatio

1. Miten paljon hankinta/osto-organisaatio on mukana projektin suunnittelussa

Prosessi

2. Kuvaile lyhyesti millainen teidän hankintaprosessinne on?
3. Kuinka standardisoitu prosessi on?
4. Mitkä ovat mielestäsi prosessin standardisoinnin hyödyt ja haitat?
5. Mitkä osat ostoprosessissa kannattaa standardisoida ja nopeuttavatko ne prosessia?
6. Mitkä osat standardisoinnissa mielestäsi hankaloittavat koko prosessia
7. Kolme tärkeintä asiaa onnistuneessa hankintaprosessissa

Strategia

8. Kuvaile teidän hankinta strategiaanne (hyödyt ja haitat)
9. Kuvaile teidän tarjouskyselyprosessianne?
10. Miten paljon yhteistyötä tapahtuu toimittajien kanssa, miten tiivistä se on ja kuinka suhdetta rakennetaan?
11. Mitkä tekijät johtavat onnistuneeseen toimittajavalintaan?
12. Testaatteko tai odotatteko innovaatioita toimittajilta?
13. Mitä hyötyjä tai haittoja on tiiviissä/ pitkäaikaisessa toimittajasuhteessa.

Informaatio

14. Kuinka läpinäkyvä prosessi kokonaisuutena ja samassa tiimissä työskenteleville on?
15. Kuinka paljon toimittajien kanssa kommunikoidaan / jaetaan tietoa

Valvonta

16. Miten toteutatte toimittajien arviointia ja dokumentoitteko sitä?

E-teknologia

17. Onko teillä käytössä jokin internetpohjainen hankinta järjestelmä tai systeemi. Jos on, kuinka paljon käytät sitä ja kuinka käytät sitä (hyvät ja huonot puolet).

Appendix 2. Interview questions in English.

General Information

       What is your job title and how long have you worked in this field?

Organization

1. To what degree is purchasing involved in the project/ product planning

Process

2. What kind of procurement process do you have?
3. How structured / standardized the process is?
4. What benefits or disadvantages there is in the standardized process?
5. What parts do you see beneficial to be standardized in the process?
6. What parts that are standardized you see as disadvantage?
7. Three main points in to a successful purchasing process

Strategy

8. How would you describe your sourcing strategy?
9. How deep is your co-operation with suppliers?
10. How tight is the relationship and how much co-operation are happening with suppliers?
11. What factors lead to a successful supplier selection
12. Do you test or expect innovation (new solutions) from suppliers?
13. What benefits or disadvantages there are in a long-term supplier relationship?

Information

14. How transparent the whole process is?
15. How transparent is the process to the people working in the same team?
16. How much communication is happening with key suppliers?

Monitoring

17. Is there a systematic procedure for supplier evaluation in place and do you document it?

E-technology

18. Do you use e-sourcing or e-procurement platform or a system if yes how much do you use it and how do you utilize it? (Pros and cons)

Appendix 3. Table of assessments stages of PCCM (Pongsuwan 2016).

	Foundation-stage 1	Established – stage 2	Leading-stage 3	Excellence – stage 4
Organi.	Success of the capabilities depends on certain specialist.	Procurement knowledge is performed but lacks cross-functional teams.	Procurement functions work as cross functional team.	Practice knowledge is very high and leads to competitive advantage.
Process	No measurement and Performance adjustment.	Foundation capabilities with business processes, methods and projects are becoming more formalized.	Operating models and skills alignment to practice are seeded.	Process are analyzed optimized and adjusted to changes in market requirements systematically.
Strategy	At the basic level, with phone and fax considered the primary tools.	A process for conducting basic sourcing events likely via emails with spreadsheet.	Business process capabilities are integrated with blend of methods, tools and technologies.	Procurement goal's metrics are part of the daily life and become visible across the enterprise.
Information	Quality and cost of efforts are always not predictable.	Basic spend analysis likely spreadsheet basis.	Proper spend analysis using business intelligence across business units, regions.	Benchmarking and leading practice are continuously used to identify improvement potential.
Monitor	Seldom perform supplier performance on paper basis.	Perform supplier assessment for risk, Performance capability likely managed via.	Supplier networks integrated into the sourcing solutions to improve company supplier base.	Supplier networks integrated into the sourcing solutions to improve company supplier base.
e-Technology	Basic technology and platform components are in place, store record in paper base.	Basic technology and platform components are in place, likely on-premise ERP solution.	E-procurement used to reduce paper, PO and invoices to a bare minimum.	Integrated source to pay into cloud online via web browser.

Appendix 4. Summary from the answers.

Question	Buyer A	Buyer B	Buyer C	Buyer D	Buyer E
1	We are included in the project already in the sales phase- During project we co-operate with the PM.	I think purchasing should be involved all through from the sales phase.	Out of our 3 buyers maybe one of the participates more in developing and planning. Other than that, no.	We come in after the sale. Sometimes we are involved in the sales phase but rarely.	We are trying to unify our units so that purchasing would be part of the designing of project but right now it is not.
2	We only buy for projects not to stock at all. We get a PR from designer which is then approved by project manager. When the purchase is done by another purchaser needs to accept it before sending it to the supplier.	Again, from my point of view we are included already from the designing phase. After the sales phase it is purchasing responsibility to make sure everything goes as planned.	We have contracts with customers that we use the suppliers that they want to be used. That's about 60% of our purchases Other than that in other cases we negotiate with our suppliers about the prices and agreements. Sometimes, we buy general components to storage so that they won't run out.	We have certain components that we know that we can buy straight when the deal has been made. Then we have components that needs designing and the designers give the purchasers list of parts and images that needs to be bought. Then manufacturing and procurement decide what is been bought or if something is cheaper to manufacture ourselves. We also buy to stock.	We have SCM manager that negotiates agreements and price-list etc. He also finds new partners and has good networks with our suppliers. But usually after designing phase the operative purchasers buy and monitor the process.
3	Quite standardized depends on the situation but basically there are 2-3 options where to choose. By using e-technology we have tried to increase the transparency of the process.	I think you can't standardize the process. It always depends on the situation.	The process always works the same way. Our customer gives us the information and then we deliver it accordingly. We use a lot of prices list. Some cases we negotiate the prices ourselves.	Well right now it is messy. But when the new ERP is working as we want it. Then I see the process going according our standards. The idea is that the designers will insert the needed parts list and drawings to the ERP and the purchasing gets the Purchase requisition through ERP and then can make the PO's.	It always goes the same way because we usually need the same kind of solutions. However nowadays a growing number of our projects are one's that we design together with customers and they are brand new. This brings variety to the process.

4	It is useful to have few options you always know what to do. We do have official how to buy guides, but I am not familiar with them. The down size is that we have a lot of bureaucracy and it makes sometimes the process slow and hard to get changes through.	I think it is only a downfall, because you need to be flexible as possible.	I think it is a big advantage when it comes to purchasing. Room for errors becomes smaller and especially with us it can affect to the production and to the value of storage. I think it is good it goes with these standards and everyone is aware of the process.	I see it as a good thing. I like that it will become standardized.	I see it as a good thing. Especially if your personnel number is growing you need a good and strong basic process behind it. However, at small organizations I see that it also might be difficult to. It should not be the sole purpose because then it will take time away from everything else.
5	Making offers should be standardized that way everyone would know the current situation of what has been asked. Difficulties is to get people to understand why this should be done.	If the process is too standardized and planed it causes problems if everyone starts to follow the process exactly it may take days to achieve the goal.	The basic operative purchasing should be standardized. Also, from strategic perspective I think that I think it is good if contracts etc. are gone through in regular basis.	I think it is good that we have these certain components already that is standardized so we know that it will always go the same way- We also have a plan to standardize certain of our products.	I think that you should go case by case in the parts that involves lots of risks and that are key components. Also, these general components like bolts and nuts etc. you don't want to waste time on those.
6	Opening new vendors. It has a lot of bureaucracy, so it is a bottleneck with us. Also, the process could be faster there are lot of approvals needed in order to get the order done.	You can't really standardize it maybe you can have some simple basic process and then add something depending on the situations.	For us right now I don't see any bad sides. For us I see that is positive that there is not that much of bureaucracy. The buyers are responsible for themselves about their job	We have certain areas, that we have agreed that these should go the same way, but it just won't and right know these are making the process more difficult.	Before it you need to have some data so that you can see how the process can be made to work. If people don't understand why certain parts are standardized it might be difficult.

7	Communication, time management and strategy.	Quality, delivery and Cost.	Understanding about what you are asking, Right kind of persons, Organized process.	Good supplier network, good and clear operative methods, Organizations clear line for procurement.	Transparency, understanding and Co-operation.
8	Our strategy should be based on the whole organizations strategy however currently the strategy is not clear. Main goal right now is to downsize the amount, of vendors and find vendors that truly understand our needs. Most of the strategy development happens in higher places in our global organization.	I think especially in per category level strategies should be made. When you do strategies, you should be aware not to make them too long because then it does not get read and it is just forgotten.	We don't have any specific strategy. Of course, we have basic requirements from supplier for example we want ethical suppliers that can deliver what is promised. But I big amount is determined by our customers.	We are updating our strategy to a written form. Before there only has been a spoken strategy not an official and written one. I think strategies are good if they are realistic and can be followed through. It is a good guideline for everyone.	For procurement we don't have a specific strategy right now. We are currently developing it. Basically, our procurement is also in line with our business strategy. I have to say that in every company there should be a person or a department that takes responsibility from suppliers and from procurement it shouldn't be left for the operative purchasers.
9	The idea is good behind it but in practice it always does not come out as it should. Problem is with communication. People who don't know about commercial conditions or savings sometimes do the sourcing which is not good.	You must know what you are asking and from who you are asking it. You must make NDA contracts before sending request then send a request with all the information needed not all information need to be told in this phase.	In bigger projects our sales persons do the sourcing phase. We don't have any special tender support from the procurement department.	We don't have a straight process for it but basically offers are asked on the sales phase. Our goal is to move the RFQ process done by procurement department. Because right know there is not enough time given for procurement to do the RFQ process.	We do not have a certain process for this. Because we have certain suppliers that we use all the time and we have agreed on prices and use price list and so on. However, with new suppliers we do have a guideline which we follow but new suppliers come in rarely.

10	It depends on the vendor. With some vendors we might discus often (weekly) and with some very rarely. We do have vendors that we should discuss more because things haven't worked out as agreed but time is a critical resource here.	I think it depends on the product in questions. If it's some general material like bolts and nuts, you can get those anywhere so a close relationship is not needed but if the product is critical you are buying you should have a tight relationship and maintain it.	Mainly the co-operation happens with emails and by phones. We have some international suppliers that we never meet and the we have some Finnish suppliers with who we make more product development.	Depends on the vendor. With our standard suppliers we communicate almost daily or on weekly basis. We go through regularly their capacity levels and so on. I Think working together with problems etc. Is a key thing when you are building a relationship with a supplier.	We have almost daily co-operation with suppliers. We communicate often and even with big global suppliers we have a very tight relationship. Giving each other information and sharing it openly from my point of view is the key in building relationship. It does not motivate at all to work with someone who does not communicate. We do not try to for example hide mistake etc. it is very important to be open about situations that happens.
11	Flexible vendor who knows our needs. They need to have understanding and willingness to solve problems.	You must learn how to segment your products and that way you can segment your suppliers.	Communication and being open towards one another and through that build the connection.	You must know the backgrounds of the suppliers and make sure that they know our expectations towards the end result.	I believe that you can succeed with anyone. It depends basically on you if you give the supplier good premises then anything is possible. You must give them contacts etc. And discuss with situations and so on.
12	From some suppliers we do. We have instructed them to give as new ideas etc.	Yes. That is why we use suppliers.	Maybe not innovation at its self but sometimes we hope some solutions for situations we can't solve.	Yes, and we openly discuss with them. But we do expect it from some of our suppliers and have asked the to help us to solve problems.	We try to talk with suppliers, and they have given us better solutions and so on. And we do this to our customers also we offer them better solutions it is a day to day thing for us.

13	The downsize and positive side is that they understand us and know how we handle things. The know how to operate with us but also it is hard because we have a lot of competition in our area so they could basically tell our competitors how we do things because they know us so well.	There are always risks but, in the end, money is really what matters the most for each party. You must have tight relationship, if you want to succeed. Business is not just emailing you need to meet partners face to face so that you learn to know people.	I think that if the relationship it is too tight it might be difficult when solving problems because possible conflict wants to be avoided also it could affect to the pricing and pricing competition. We have had no disadvantages when regarding to the closeness of the relationship. On the contrary one of our problem got solve thanks to a close supplier.	I think the one benefit is that we get to make our products as good and cost effective as possible. The downsize is that you might not realize that after a long time this good vendor is really expensive compared to others. It can have effect on pricing level. We have categories for our suppliers. For critical components I think it would be best if we had more than one supplier and try to find abroad another supplier.	For us I would say that the downfall is that we have a lot of our eggs in the same basket. So, if something happens to our supplier we are in trouble because we don't have a second option for suppliers and sometimes the cooperation is depended on the persons who have cooperated. However, I see more benefits the better you know each other the better you can help the other. Then you know the needs and so on.
14	I don't think it is transparent at all others don't know what we do. Not entirely it would be difficult to cover my team mate, but I think I would manage.	It should be but people don't understand what procurement does. I think everyone should know their roles and work together and understand what others do.	Because we are a smaller company the process and what everybody does it is clear to everyone. All the purchaser knows what they do, and everyone could do the others job. Even I as their superior could cover their absence.	In our company everybody knows what purchasing does and it is clear. In our new system everybody can go and check what has been ordered and inventory levels etc.	We have a very transparent process here in Vaasa. We discuss and communicate with each other often and very openly.

15	Very little is communicated. We meet some of them sometimes but that's about it.	I think the relationship can be fairly open. You just must have NDA contracts available and make sure that they are valid.	We do tell if something bigger is coming especially when we know that there are items with long delivery time so they can also prepare for it. The we also have yearly discussions with suppliers.	It depends on the supplier. But a lot is communicated. I also ask once or twice a year an updated pricing list etc.	This happens almost daily. We try to be as open as possible and not hide mistakes and so on. However, it is difficult to give predictions and we don't have a systematic way to give this to supplier.
16	Yes, we have a global system where we can evaluate suppliers and see other units' evaluations also. It is a global system.	Yes, I don't personally do it, but we do have a system that does it and a different department that executes it.	We do not actively have done this. But now we have developed our model that will help us to do it, so this is starting now and its one of our targets to develop.	Yes, we do. We have to ways to evaluate them. Evaluation is done once a year. Sometimes we go and see their factories and from that evaluation we give feed back to them.	We do this for our critical suppliers. And sometimes we go case by case the details of what are the risk and possible situations. In the future one of our goals is to make this a bigger part of our procurement.
17	Yes, we have an internet - based procurement system. It has a lot of good qualities however not everyone uses it as it should be used. It helps creating more transparency to the process. However, it is quite new and has some trust issues but other than that is gives good information and it is easy to use.	Yes, I have looked and tried many systems. It is hard to say if they are good or no because some of them are but some not. But I do see them as useful and they do have a lot of potential. It is always good if these systems help you to save on cost and amount of papers.	I have never used, and we don't not use any of these methods in our company.	Yes, we do but it consists our whole systems. It is good that everything is in one place but then again, the downsize is that when making changes some people don't know how to use it and it can get the whole system wrong.	We use our biggest supplier's online portals. They are very useful. You can see the prices and delivery times straight from there. However, we don't ourselves have anything like this. I think these tools are good and I have found them to be useful. You also need a good ERP system. It should make your job easier. It also needs to offer you some data. That you can use.