CREATING SUPPLY STRATEGY BY UTILIZING CATEGORY MANAGEMENT

Lappeenranta–Lahti University of Technology LUT

Master's Programme in Supply Management, Master's thesis

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ABSTRACT

Lappeenranta–Lahti University of Technology LUT

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Creating supply strategy by utilizing category management

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Keywords: Supply strategy, SME, category management, spend analysis

The aim of this research is to reveal most suitable supply strategies for a small sized enterprise by utilizing category management. The study is being conducted as a case study, which used key personnel interviews and spend-data collected from the ERP-system of the case company as information gathering methods. The interviews expose the case company being without a deliberate overall business strategy and supply strategy dictated by the upper management. The case company is currently waiting for further instructions from the executives whereas they have adopted subconsciously emerged business strategy born out of necessity to continue doing business. This has led to focusing on the case company's core competences and their most important customers. Therefore, the supply strategy took shape of supporting and ensuring the optimal manufacturing of the most important products.

Spend-analysis unveils the most significant purchasing categories, of which the largest consists of purchases with ~41% portion of annual purchases. The study focuses on creating supply strategy for the biggest single purchasing category. This specific purchasing category comprehends purchases from two different suppliers while the distribution of annual purchases between suppliers are ~87% and ~13%.

The study introduces three different supply strategy options for the most important purchasing category: The first is deepening the current supplier relationship with the primary sheet metal supplier e.g., in some form of partnership, the second is traditional arm's length relationship enabling bidding among suppliers and the third is purposeful maintenance of an alternative supply chain coming from the secondary sheet metal supplier. This would be done by diverting around 20% from the annual sheet metal purchases to the secondary supplier in order to mitigate the supplier risk caused by sole sourcing.

TIIVISTELMÄ

Lappeenrannan–Lahden teknillinen yliopisto LUT

LUT-kauppakorkeakoulu

Hankintojen johtaminen

Janne Kiljunen

Hankintastrategian luominen kategoriajohtamisen avulla

Kauppatieteiden pro gradu -tutkielma

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Tutkimuksen tarkoituksena on kartoittaa hankintastrategia pienen kokoluokan teknologiayritykselle kategoriajohtamisen keinoin. Tutkimus suoritettiin tapaustutkimuksena, joka hyödynsi tiedonkeruukeinoina kohdeyrityksen avainhenkilöstön haastatteluja ja toiminnanohjausjärjestelmästä saatavaa dataa yrityksen hankinnoista. Haastattelut paljastivat, ettei yrityksellä ole selkeää yritysjohdolta saatua liiketoimintastrategiaa, mikä näkyy myös huomattavina hankintastrategian puutteina. Yritys on jäänyt odottamaan yritysjohdolta selkeitä ohjeita ja on sen vuoksi turvautunut käytännön tarpeista kumpuavaan liiketoimintastrategiaansa keskittyen ydinosaamiseensa ja tärkeimpiin asiakkaisiinsa. Hankintastrategia kehittyi näin ollen tukemaan ja varmistamaan tuotannon jatkuvuutta yrityksen tärkeimpien ohutlevytuotteiden osalta.

Hankintadatasta tehdyn analyysin perusteella saatiin tunnistettua hankintakategoriat, joista suurin oli normaaliin tuotantoon tarvittavat ohutlevyhankinnat muodostaen noin 41% koko vuoden hankinnoista. Tutkimus keskittyy muodostamaan hankintastrategian tälle tärkeimmälle hankintakategorialle. Kyseisen hankintakategorian ohutlevyhankinnat jakautuvat kahden toimittajan kesken, joista toinen saa noin 87% osuuden vuositasolla.

Mahdolliseksi hankintastrategiaksi tärkeimmälle hankintakategorialle valikoitui kolme eri vaihtoehtoa riippuen yrityksen omasta tahtotilasta: Ensimmäinen vaihtoehto on nykyisen toimittajasuhteen syventäminen primääritoimittajan kanssa, toisena ”arm’s length”-kilpailuttaminen tuttujen toimittajien kesken ja kolmantena määrätietoinen vaihtoehtoisen hankintakanavan ylläpito sekundääriseltä ohutlevytoimittajalta noin 20 % vuosittaisella ostomäärällä hankintariskin pienentämiseksi.

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Kuulemani sanonnan mukaan opiskelija valmistuu silloin kun hän itse sitä haluaa tai kun hän on siihen valmis. Olipa asia kummin tahansa, oma pitkä opintotieni tulee nyt (vihdoin) päätökseensä. Ilman perheeni ja puolisoni Lauran järkähtämätöntä tukea ja kannustusta tekisin tätä opinnäytetyötä vielä 2025, tästä kaikesta saamastani avusta kiitän heitä. Professorit Veli Matti Virolainen ja Katrina Lintukangas ovat ystävällisillä neuvoillaan, syvällä asiaosaamisellaan ja buddhalaismunkin kärsivällisyydellään myötävaikuttaneet vahvan positiivisesti opintoihini ja motivaatiooni hankintojen alalla – suurkiitos avustanne.

Haluan myös kiittää tutkimuksen kohteena olleen yrityksen edustajia; Ilman haluanne osallistua ja jakaa tietoa tähän tutkimukseen, sen tekeminen ei olisi ollut mahdollista. Toivon, että yrityksen sama tekemisen meininki, hurtti huumori ja tiivis yhteishenki jatkuu myös tulevaisuudessa.

Tästä on hyvä lähteä jahtaamaan tohtorinhattua.. vitsivitsi. 😉

- Janne

Hyvinkäällä 29.9.2021

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1 INTRODUCTION

Purchasing and supply management have traditionally been seen as means to achieve profitability and affect a company's cashflow (Saunders, M. 1997, 20). Ways to improve the strategic management of supplies, paying attention to both practical and theoretical functions, have continued to progress. Even though progress has been made over the years, supply management is still often seen as one of the operative functions of a company (Tassabehji & Moorhouse 2008). It is clear that a supply management model based on traditional purchasing or supplier comparation is not enough a company to distinguish itself from its competitors. Iloranta & Pajunen-Muhonen (2012, 29) raise out a point of a view that supply management has to be able to grasp processes which have effects beyond the limits of an organization and assess the total cost of ownership of whole supplier network, sources of value and the benefits provided to a customer. Van Weele (2002, 18-19) points out tangible results achieved by successful supply management: 2% saving obtained in purchasing operations can lead up to 15% improvement of a company's return of net assets (RONA).

Supply strategy consists numerous various things and with this study category management was selected to be one of the leading criteria creating supply strategy to the target company. There is a disproportion between practical usage of category management in companies and an academic studies and literature in favor of practical usage (Heikkilä & Kaipia 2009b; Iloranta & Pajunen-Muhonen 2012). One of the reasons to steer this study towards category management was to complement the scarce academic research made from the category management.

This study is written for a small sized Finnish firm in sheet metal production business. The company wanted to update their supply strategy to match today's standards and acquire supply management tools to create competitive advantage for itself. Henceforth the study will be referencing to the Finnish case company under study as "the company" in the future text. Supply management and purchasing operations of this specific company has mainly been short sighted without clear strategy. The company felt the need to get a pellucid direction for its supply management by creating a new supply strategy which will later on work as foundation of developing purchasing processes. The purpose of this thesis is to find

out tangible ways to create a clear supply strategy for the company by exploring literature about supply strategy and category management together with observing the unit's recent and current purchasing activities.

1.1 Objectives and research questions

The objective of this study is to create a supply strategy for a small size company. The case company has not a clear direction to where to steer its purchasing functions' development because of lack of supply strategy.

The main research question:

How category management can be utilized with the most effective manner creating supply strategy for the case company?

The following sub-questions are created to aid answering the main research question:

What are the ways to identify different categories?

What do individual categories include?

What are the right categories to focus on?

With these questions creating supply strategy and category management are discussed in this thesis. Empirical study will give answers to these questions. The findings and the study will be introduced the empirical study chapter and in more profound way the in the conclusions.

1.2 Research methods

The study is divided into two different sections being theoretical and empirical. Theoretical part of the study focuses on supply strategy, different factors affecting supply strategy and category management found from previous studies and academic literature. Potential advantages acquired from category management and successful supply strategy, how categories are identified and divided are taken into closer observation in order to create a suitable supply strategy through category management later on.

Empirical part of the study is conducted as a case study, which utilizes both quantitative and qualitative data. Quantitative data is collected through the company's ERP-system and financial sheet when qualitative data is from half structured questionnaire presented to key personnel in the case company. This study has been conducted mainly as qualitative research, which is considered as a widely popular form of business study due to its ability to present complex phenomena in a comprehensive manner (Moore, Lapan & Quartaroli 2012, 243). Kiviniemi (2001, 68) says that it is typical for a qualitative study to collect the material by observing and qualitative study prefers collecting a thoroughly considered sample instead of random sampling. The aim of studying the collected material closely is to pinpoint relevant and interesting things and phenomena related for the study.

However, the study contains also quantitative information gathered from an internal information system. Hirsjärvi et al. (2009, 140) present fundamental attributes of quantitative study being variables formed into tables, turning data into statistically treatable form. The reasons, why qualitive research was also chosen for this thesis, were, that with qualitive is possible to study intricate processes and phenomena, vaguely known processes, phenomena whose variables are unknown, and phenomena which can't be experimentally studied (Marshall, 1985; Marshall and Rossman, 2010). Alasuutari (2011) and Metsämuuronen (2006) agree that, a study is most likely to achieve more value by utilizing both qualitative and quantitative study methods than just choosing one of them.

According to Hirsjärvi et al. (2009, 134) a case study is used when it is about detailed and intensive knowledge from a single source or small batch of cases related to each other. A case study was selected as used study strategy since its previously mentioned attributes fit the most suitably to the studied situation.

1.3 Limitations and study structure

The company, for which this study is done, represents a small sized organization. Therefore, large sized companies were left out from this study since small and medium sized companies are similar in multiple different ways. This study recognizes the close relation of overall strategy and supply strategy because of in most cases supply strategy is being considered to be derived from the overall strategy of the firm. The study limits a comprehensive analysis of the supply market outside of the study's research scope in order to focus creating simple and effective means to create supply strategy for the case company.

The aim of this study is to focus solely on the case company providing them tools to develop their supply management. That said, the study might not deliver results which as such would be useful to other firms' supply management. However, keeping in mind that a supply strategy includes same elements to every organization regardless of size of the company and because of this, the section covering the elements of supply strategy could prove itself useful for persons working in the field of supply management. It was decided that developing purchasing processes was not part of this work even though it is one of most important following steps to be done after creating supply strategy and divided purchases into different categories.

The structure of the study starts with presenting theory of supply strategy and category management, which follows empirical part explaining how the research process was conducted and what kind of findings were discovered. The conclusions and suggestions for the future actions are being presented in the last chapter.

1.4 Literature review

The last 20 years supply management and supply strategy have been under active research. Same can't be said about SMEs (Small and Medium-sized Enterprises). Peter Kraljic and Michael Porter can be identified as relevant persons in terms of theorizing about supply strategy during 1980's understanding it is not simply just a secondary function to companies but a strategic function. The two previously mentioned gentlemen were able to produce different concepts, such as the Kraljic Matrix and Porter's five forces model. (Keith et al. 2015, 1-2)

Category management has gotten more attention in recent years and it has been clearly discovered as very useful and versatile tool in developing strategic sourcing and procurement processes. However, there are no existing study about creating a supply strategy by utilizing category management and this study aims to fulfill that research opening.

As few examples of studies which can be found regarding category management; Maria Savolainen has studied category management as a tool for strategic purchasing development in her master's thesis written in 2016, Sanna Kivikannisto has created a strategic purchasing model by utilizing category management in her master's thesis published in 2015 and Nina Kaukoranta created a category planning process in her master's thesis 2014.

When it comes to theories about category management, this study heavily relies on the teachings of Jonathan O'Brien and when speaking about supply strategy, the formation of supply strategy presented by Anni-Kaisa Ahtonen and Veli-Matti Virolainen provided theoretical foundation to assess the revealed findings from the case company.

1.5 Theoretical framework and key concepts

Theoretical background portrays the theoretical point of view from which the study is considered and treated (Alasuutari 1995,14,165). Research framework is built on fundamental thought about information flow within the organization. The framework shown in figure 1 is presented through multiple different levels of strategy starting from the company level all the way down to category planning and from continuing from there to purchasing activities.

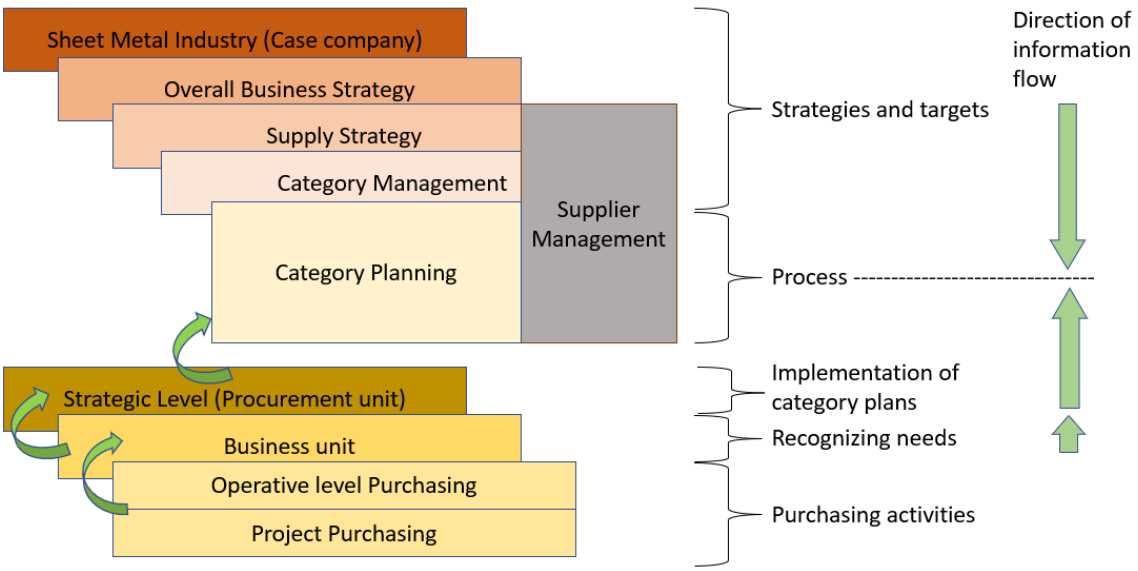


Figure 1: Theoretical framework

In figure 1 the direction of information flow is being presented on the right whereas the effects of operational activities are affecting the strategy of the case company from bottom to top. In a traditional sense the strategy is being derived on the top of the organization and implemented towards operative level but the supply strategy and even overall business strategy can also be influences from the bottom, operational activities. The main three topics focused on this research are supply strategy, category management and supplier management.

SME (Small and Medium-sized Enterprise): Enterprises, which have less than 250 staff members and have turnover smaller than 50 million euros each year or the final result of balance-sheet total doesn't exceed 43 million euros. Also, an SME has to meet criteria of being independent meaning that less than 25 per cent of a company's capital or voting rights can't be owned by one company or collectively by multiple companies, which cannot be recognized as small or medium-sized enterprises by this previous definition. (Tilastokeskus 2020)

Supply strategy is a company's detailed plan aiming to give direction for supply management. Supply strategy should be aligned with and integrated into the overall strategy of the company. (Watts et al. 1992) According to Hallikas et al. (2011, 147) "supply strategy consists of several external and internal aspects, including governance mechanism, industry structure, environmental issues, customer needs, supplier relationships and supply processes" which all should be integrated into a firm's strategical planning as substantial sources of competitive advantage.

Supply management: According to Giunipero et al. (2012, 260) "supply management incorporates environmental, social and economic value into selection, evaluation and management of its supply base". The role of supply management is versatile since it can be seen as part of operational functions as well as strategic management. Supply management needs to be highlighted not only as a source of creating cost savings and value from it supply base but also as a platform for discovering innovations, speeding development of new products, cutting down supply risks, and adds a company's competitive advantage by integrating supply chains and cooperation. (Kähkönen & Lintukangas 2018, 983, 992)

Category management is described as a strategic method that strongly emphasizes studying an organization's spend on goods and services procured from its suppliers (O'Brien 2015, 5). Category management is defined as collecting and concentrating of coincident items into a single contract (Webb 2015). Category management has been a constantly growing trend among companies although it has been usually linked with big companies operating in developed markets; Arkader and Ferreira (2004) point out that category management can be used by any firm regardless of its size.

Procurement category can be defined as a coherent group of material, services, work or subcontracting (Timonen, 2001). O'Brien (2015, 6) points out there are two fundamental

types of categories: direct and indirect categories. Direct categories such as raw materials, components or services, which are directly used for producing the final product. Indirect categories include products and services which are non-product related or otherwise support the company to operate.

Spend category contains services or goods with identical attributes that have been gathered as one for planning and management intentions and are procured and traded in all marketplaces. For example, “cars” can be seen as a spend category including different subcategories containing of trucks, passenger cars, busses and race cars (Vitasek 2015, 227)

Kraljic matrix is a two-by-two matrix, which portraits the relative importance of purchasing and relative complexity of the supply market, which gives tools to assess supply strategy (Saunders 1997, 142). Kraljic matrix has inspired multiple different variations during the past decades but the original matrix was introduced in Harvard Business Review 1983 and it focused on service or product segments to be procured, not suppliers, even though in some cases product and service segments seems to be one and same with suppliers (Iloranta & Pajunen-Muhonen 2012, 115-116).

Spend-analysis collects all the data of past purchases of a company to be studied. With this it is possible to visualize what has been bought, to what units, to what needs, quantities, frequency and the type of products, services or suppliers. Spend analysis can be utilized as a tool for categorization of purchases, governing different categories, viewing total costs of purchasing, limiting costs, planning and utilization of development measures and as part of governing suppliers. Spend-analysis process has multiple phases and the content depends on the studied firm and its present situation. (Huuhka 2017, 47-48; Nieminen 2016, 82-83)

2 CATEGORY MANAGEMENT

Cordell and Thompson (2018, 1-3) describes category management as continuing process of collecting and studying market data to be able to create and go forward with spend strategies that bring long-term business benefits. According to O'Brien (2015, 6) category management is a practice segmenting the most important areas of organizational spend on purchased goods and services into separate groups based on their function and mimic the individual organizational structure of market places. Nielsen (1992, 30) says category management enhances ability to make decisions and react fast to unexpected turns of events occurring in the market place.

Cordell and Thompson (2018, 1-3) present key principles to conduct a successful category management into a following list: Customer focus, changing the status quo, process thinking, cross-functional approach, Facts and data driven and continues improvement.

When studying the customer focus, it is crucial to understand that all in category management has to be led by customers while targets and objectives target on business-wide priorities. Customers can be divided into external and internal customers. Business requirements are the foundation of all category management; insufficient analysis and understanding of business requirements will lead to a lacking category management solution. Category management's true nature lies in constant change and improvement. Thus, category management aims to change the current situation with advanced thinking by searching and utilizing new chances to achieve significant progress. 3.When process thinking is mentioned, it has to be taken into account that category management is a cyclical process of sequential activities. The advantage of using sequencing activities into a process containing step-by-step phases reveals itself when category management teams are able to be efficient and use somewhat standardized approach to development of strategy and its utilization. Process thinking also enables governance to be created, which gives a chance to establish business controls and peer review. (Cordell & Thompson 2018, 2)

One of the most known features in category management is business-wide approach meaning different stakeholders are not viewed as an idle bystanders or consultees but instead active parties leading and managing the various category functions. Cross-functional approach, more specifically utilizing multiple stakeholders, takes category management apart from

regular purchasing activity towards a business process creating transformation and development.

Not a single analysis, decision or strategy should be done without reliable and solid data and facts. With this subjectivity, biases and organizational politics can be removed from the equation. The changes in strategy are much easier to justify with a well-informed market intelligence. Category management does not have defined end like for example a project does. Category management has to be viewed as continues circle in which one process of activities ends after one category management strategy has been applied, another process starts evolving the category management further. Due to this iteration, the process is constantly searching for superior means to govern each spend category. (Cordell & Thompson 2018, 2)

Smith (2017) says that category management is about developing special knowhow in every category by understanding the product, suppliers or the market. More specifically, category management can be regarded as a proactive study on what the organization has procured and what will be the future acquisitions and their strategical plans. (Smith 2017)

2.1 Fundamentals of category management

Smith (2014) states that aggregation, rationalization and standardization are the key principals giving category management chance to achieving smarter purchases, getting rid of redundancies, adding efficiency and effectiveness, achieving higher satisfaction with the delivered product or service. Aggregation groups together identical demand and spend through the organization to receive best possible value for the organization. Synergy benefits such as economies of scale are possible to achieve through aggregation. Rationalization is to search for various suppliers which are able to supply the goods and services which an organization by reducing supply base. Standardization is linked to aggregation and rationalization since focusing on the needs and specifications of procured goods and services, and where able, improve and standardize the procured goods based on market availability and dynamics to receive better value for investment. With these three previously mentioned principles affect positively by reducing organization costs via decreasing chance of duplication, bringing consistent data more available, learned best practices gained from improved market intelligence, better offerings and heightened demand capture accuracy of precise categories. (Smith 2014)

According to O'Brien (2015, 40) category management has three fundamental factors which act as a foundation for an organization's ability to produce value improvement to its processes. These three foundations shown in figure 2 are strategic sourcing, market management and driving change.

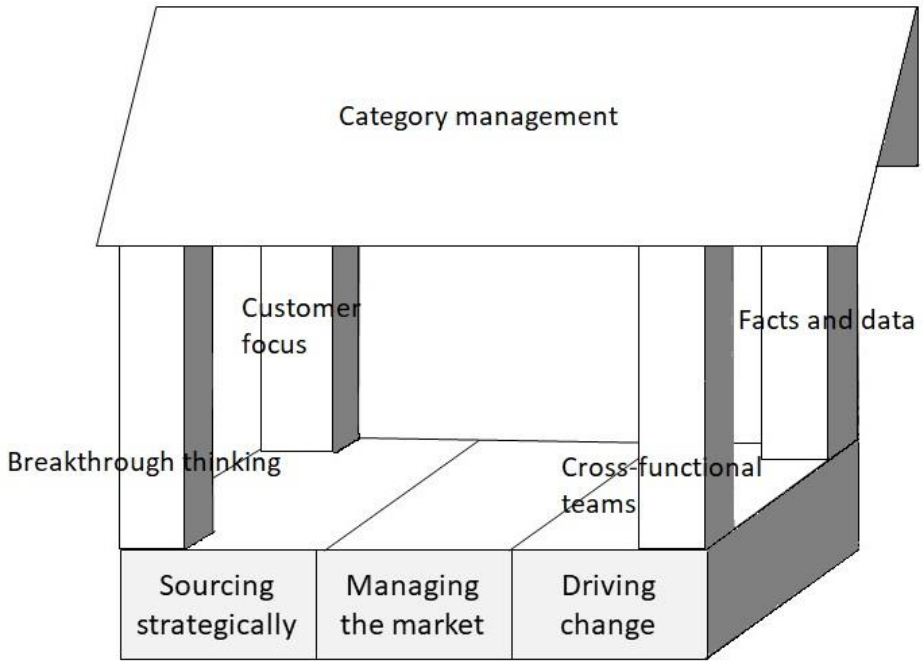


Figure 2: Building blocks for category management (O'Brien 2018, 55)

O'Brien (2015, 41-46) represents category management being fundamentally built from three actions, also pictured in figure 2, from which a foundation for later value improvement in the organization: A strategic approach to sourcing, strong market management and robust change management.

Strategic approach to sourcing, market management and change management offer as a foundation to continue building category management with four pillars, which are: Breakthrough thinking, customer focus, cross-functional teams and facts and data

Strategic approach to sourcing is covered in paragraph 2.1.1, market management in 2.1.2 and change management in 2.1.3. These three are considered to be a foundation for category management whereas breakthrough thinking, customer focus, cross-functional teams and facts and data are viewed as pillars on which to build category management. The four pillars of category management are explained in more detailed manner in chapters 2.1.4 – 2.1.7.

2.1.1 Sourcing strategically

When talking about strategy regarding purchasing, two different types of strategies are needed: An overall strategy guiding the purchasing function which goes hand to hand with a corporate's higher-level strategy and several sourcing strategies different areas of spend. *(Overall) strategy* for the purchasing function points the direction and scope of purchasing function in the long run. As previously said, it has to match with overall targets and needs both of a company and its stakeholders. *Sourcing strategy* affects direction and scope of a specific and determined area of the spend over the medium term studying what and how needs to be procured. Sourcing strategy should produce information about existing and coming needs of an organization and customers. Sourcing strategies should also go hand in hand with goals set by overall strategy.

O'Brien (2018, 43) also points out that if an organization actively uses to think about that its role of purchasing functions is just to buy things and not a major and important enabler of value to the organization, it will not evolve just by repeating processes, applying tools or giving more strict orders and demands. Once the mindset of the personnel has changed from buying things into sourcing activity to help achieve strategic goals, it will result different behavior and thinking in the future. Sourcing, satisfying and strategy, also knowns as 3S model, explains how category management, or some other type of strategic purchasing method, can be fruitful for a company when it has been taken into consideration in the whole organization. 3S model is represented in the following figure 3.

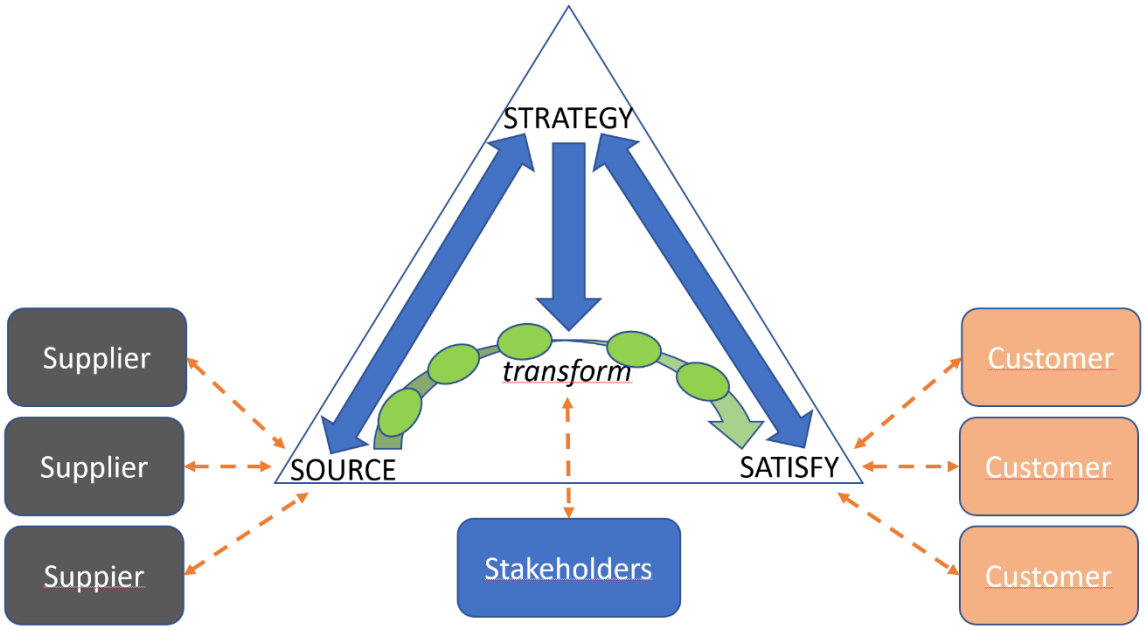


Figure 3: 3S model (O'Brien 2015, 44)

Figure 3 demonstrates how an organization needs to source raw materials, goods and services. The purchasing and supply chain management functions has the responsibility to source for an organization being the primary function working with external players such as suppliers. On the other side, purchasing has to fulfill another external role of satisfying customers' needs, which is usually seen taken care of by sales or marketing teams. Before a sourced material or service gets to a customer, it will go through numerous functions, departments, processes, handoffs and steps that generates the sourced commodity into something satisfying customers in a way they want to buy the product or service and keep doing so in the future. (O'Brien 2015, 43-44) This manufacturing and creating adds value in a similar way which has been described in "value chain"-concept published by Porter (Porter 1985).

The internal value chain between sourcing and satisfying represented in the figure 3 creates value for the firm to exploit. However, same kind of value chain exist in every supplier in the supply chain and this can be tracked back all the way to the original raw material or service suppliers. Therefore, every individual in the supply chain increases value in their own way by modifying, building, combining, shipping etc. to produce products for customers. (O'Brien 2015, 44)

Lanning (1980) suggests that the value which satisfies the needs or wants of clientele is value proposition, which can also be seen as an explanation why customers end up purchasing the service or product in the first place; to satisfy their needs. Value proposition is described as a promise of value which will be delivered paired with a customers' belief that the value can be experienced and secured. (Lanning 1980; O'Brian 2018, 45) From a supplier's point of view a value proposition is means to define what supplier is, what a supplier is offering and how a supplier is building its organizations in a way which would create additional value to the customer service. Attaching end-customer value with value being sourced, it will result an alternate mindset in the role of supply base and change the means how the suppliers should be viewed and handled.

Johnson and Scholes (1993) say strategy is a chosen direction when Andrews (1971) and Hofer and Schende (1978) approaches from an angle where an organizational strategy is derived from stated objectives, policies and plans. Porter (1996) on the other hand suggests strategy as company executives aim of obtaining an exclusive competitive position. Based on these previous descriptions the concept of strategy is rather wide and diverse. O'Brien (2015, 46) explains that traditionally firms have organized themselves in a way that strategy flows from top to bottom and this creates a problem when purchasing does not see need to engage with marketing or when both, marketing and purchasing, are receiving their orders and guidelines from the top. Either each of functions work completely separately by conducting hand-offs between functions or using cross-functional working if an organization supports fully cross-functional working and informs this to the whole organization.

O'Brien (2015, 48) and Huuhka (2017, 67-68) nominate the usual problems of strategic sourcing in table 1. For example, the obstacle in which purchasing function is being considered just an order placing automat could possibly cause internal quarrel since purchasing feels they have no other function than to purchase needed goods in a dictated manner.

Table 1: Multiple obstacles and barriers which hinder strategic sourcing (O'Brien 2015, 48; Huuhka 2017, 67-68)

Obstacle	Clarification
Vertical silos	Different departments have to communicate and cooperate during purchasing projects and it requires significant amount of energy and commitment.
Vertical incentives	Organization motivates its employees for functional success which discrourages to support sourcing projects (flow of value is horizontal in sourcing projects).
Crystal ball	Predicting future is not easy. Predicting future needs of clientele successfully with fluctuations in demand and changed technology requirements is not something taken for granted.
Tug of war	Natural conflicts residing inside an organization regarding purchasing: Different stakeholders state their varying needs for the same purchase.
Perceptions	Purchasing is being considered just a functiong to procure things. Some other department decide what and where to buy it from than purchasing, which just exists to place orders.
Lack of creativity	Relates to creating successfull sourcing strategic. Lack of doubt is not a path to developing more desirable and effective sourcing strategy.
Making it happen	Implementation of plans into reality while battling harsh challenges of managing change in organizations. A magnificent plan is just a piece of paper left on drawing board if it doesn't get proper execution.

The barriers presented in table 1 are hard to overcome but it is possible to succeed with the helping hand of category management if category management is supported fully by an organization (O'Brien 2015, 48-49). Nielsen (1992, 31) comments the vertical silo and vertical incentive-problems in a following manner;

"Category management requires internal synergies, such as providing coordination between purchasing and merchandising functions; which fosters a positive, entrepreneurial spirit within your company by empowering individual category managers, leading to improved and mutually beneficial relationships with manufacturers, many of whom are implementing category management."

According to Nielsen (1992, 31) it is possible to achieve competitive advantage in the current more and more competitive marketplace by utilizing category management.

In a nutshell, a mean is required that links and converges sourcing, satisfying and organizational strategy. Johnson and Scholes (1993) offer potential answer for the dilemma in which a company's strategy has to be equivalent to its resources to the constantly changing environment. The supply base can be seen as a vital resource of a firm and all of corporate strategies have to strongly study how utilize the supply base in the best possible way in order to achieve the organization's goals. Therefore, efficient corporate strategies have to react and be established by the external environment in supplier base and customer base. This principal concept underlines and brings forth the purpose of category management. (O'Brien 2015, 46)

2.1.2 Market management

Whereas strategic sourcing focused on internal actions of an organization, market management does the opposite turning its focus on outside of business. Understanding the market creates ability to control market and reveals the needed reaction to the situation. Road to understanding market is not an easy task. (O'Brien 2015, 50) The existing information is fragmented, false information has to be recognized and filtered out and time-consuming analysis of which leads are worth of your time (Nielsen 1992, 22-23; O'Brien 2015, 50) These previously mentioned examples paired with a wrong assumption of a buyer holding power to manage markets in the role of a customer is a recipe for failing to understand the market. (O'Brien 2015, 50)

A buyer could easily to get the idea of being able to control market and having leverage, especially if he represents a large multinational company with a spend of millions of euros. Courting and potential subservices offered by suppliers only strengthens this false assumption of possessing power over market. Without understanding how market works and power dynamics working in market it will be veritably hard task to understand where the true balance of power resides and next to impossible to be able to improve the situation. (O'Brien 2015, 50) According to Nielsen (1992, 22-23) suppliers and their customer should renew their way of thinking how the market works. In order to succeed, suppliers should provide more exact and category-based information so that suppliers would have more data in their disposable to support their purchasing decisions. In fact, by combining their resources, both parties would be privy to market knowledge they couldn't possibly obtain by working alone. (Nielsen 1992, 23)

Understanding the market, a buyer is purchasing from combined with knowledge what is currently happening and will most likely happen in the market will most likely result in finding lucrative and effective opportunities in the field of sourcing. When sourcing from another angle than original, this could lead to in a situation, in which the assumed leverage of a buyer will shift in favor of suppliers. (O'Brien 2015, 50)

As previously stated, numerous fine opportunities are lost to organizations due to their incompetence to detect and combat these barriers of market managing presented in the table 2.

Table 2: The barriers of market management in sourcing (O'Brien 2015, 50-51)

Obstacle	**Clarification**
Knowledge is power	Markets are in constant change, some more than others. Substitute products, new entrants, technological developments, global events, shifting trends among clients generate changes in the marketplace to source from. Current and foreseeing understanding of a marketplace under sourcing activity is vital in order to manage the market.
Setting boundaries	Organizations might make the mistake focusing on just one marketplace from which they are currently sourcing from. Some other marketplace could be able to fulfill the same needs with a different solution. This would result shifting the dynamics in the marketplace.
The power base	How the power of balance has positioned itself with the supplier or in the marketplace depends on various things: Difficulty of switching suppliers, existing number of suppliers and level of competition. With an elaborate analysis combined with understanding the marketplace alternative plans can be made to swift the power balance into one's favor.

The barriers of market management regarding sourcing activity represented in table 2 demonstrates how huge challenge market management can potentially pose for the purchasing of an organization. When the goal is to lower purchasing costs, way too often the answer is looked for familiar market place instead of turning focus on new market places with potential to produce and deliver the needed commodity even with less costs than previously. (O'Brien 2015, 50-51; Huuhka 2017, 68)

2.1.3 Change management

A great sourcing strategy needs change management in order to increase value of an organization, otherwise it will be practically worthless. Purchasing usually needs help from

other departments to drive the required sourcing strategy through organization. Multiple different departments inside an organization strongly state they are most suitable party to dictate some requirements affecting sourcing strategy. For example, product development team could say that only they should have a say in which components to purchase whereas marketing team would like to have a right to exclusively handle communication with design agencies. Therefore, it is understandable why other departments of an organization are not so keen on discussing what are the needs of the business. If old practices are not changed by departments, this will most likely lead to doing business with favored suppliers regardless of dissenting arguments. (O'Brien 2015, 51)

One of founding attributes of a strategic purchasing function is its ability to drive change. More specifically, launching projects, working in cooperation with other functions and governing the project. Strategic purchasing teams therefore find themselves in a situation where they need additional expertise with traditional purchasing competencies. On a single worker-level a strategic purchasing team member should be included in project management, instructing and guiding teams and handling internal communications that informs rest of an organization in order to sustain and raise supportive atmosphere. As result, strategic purchasing team members would acquire more versatile skill set in driving changes through in an organization. The need for more thorough training is justified when taking in consideration how much energy and effort is needed to get people to surrender their previously known comfortable habits. (O'Brien 2015, 51-52)

According to Lewin (1958) that just defining the objective of change will not be enough and more action has to be planned for how to change the will of an individual who is experiencing the change. Table 3 shows most common obstacles of change management in organizations.

Table 3: The barriers of driving change (O'Brien 2015, 53-54)

Obstacle	Clarification
Resistance to change	Single most important reason why projects hit the wall and never get executed in organizations. Reasons behind it can be conscious, premeditated and executed means done by employees or in a form of subconscious resistance without even realizing. Resistance to change can show itshelf in various forms.
Lack of involvement	Will cause resistance to change if a person has not been included or has not had change to be involved resulting to bitterness towards change. Based on reseach getting people involved lowers resistance to change.
Lack of executive support	Lack of visible support from executive level will give a message to the people involved that the project can be treated with laid-back style and the results are not important. A project will not receive any external help outside project team since there is nobody giving the order to give additional assistance.
No felt need	People need to have belief in the necessesity of change otherwise they are not going to support change. The level of resistance is comparative to the level of change. Small changes will not receive resistance as much as bigger ones do.
Inadequate resources	Applying change needs resources. Change projects require large amount of resources and employees need to have time in order to apply changes into an organization.

Table 3 shows resistance to change being the most important single reason why numerous changes will end up without implementation and are forgotten. Lack of executive support and inadequate resources emphasize the management's ability to have impact on which changes are actually getting done in an organization.

2.1.4 Breakthrough thinking

Category management is about to change supply management in a significant way or in a way, which will result a radical improvement and added value compared to a current status. Breakthrough thinking can create, for example, making suppliers to compete more against each other, changing internal processes, utilizing innovations created by supplier or

removing the need. The biggest challenges for breakthrough thinking are the two different "We have no need to do anything"- and "This is how it has always been done"-mindsets. (O'Brien 2015, 55-57; Huuhka 2017, 69)

Breakthrough thinking is something that should be firmly pursued. This will require an open mind, will to change and detailed studying of a category to gain as much information as possible. When a breakthrough has finally been identified, the resistance to changes will most possibly show itself to be won before the breakthrough innovation can be applied. (O'Brien 2015, 55-57; Huuhka 2017, 69)

2.1.5 Customer focus

It is important to know who are the customers, what are their current and future needs and what are the possible means to answer these needs and wishes. Purchasing has both customers, internal and external. Internal customers are inclined to resisted change if they are not involved into the decision-making process for example to change supplier. Leaving internal customers without consultation will result to resistance to change and energy is being put to prove that the change is not working. However, if internal customers are involved in decision-making, they become part of solution by owning and accepting the change, and thus making compromises and tackling multiple other problems in order to achieve wanted results is agreed by everyone. (O'Brien 2015, 58-59)

It is uncommon, and in some cases even inappropriate, for a purchasing department to communicate directly with an external customer, the end customer to be exact. Sales department and marketing functions would most likely to advice against this by wanting to handle the task by themselves. From a category management point a view, focusing to an external client practically means communicating tightly with internal entities, for example sales and marketing departments, which are working with the end customer and thus are privy to the real needs of the end customer. This information, is needed to build through understanding of the wants and needs of a customer, and thus it will provide a foundation of creating sourcing strategies. Customer focus should be a mean to connect end-customers' needs and objectives with effective supply chain solutions, which would lead to formidable results, rather than just serving the needs of internal and external customers. The key to customer focus realization is to comprehend the end-to-end value chain. (O'Brien 2015, 59; Huuhka 2017,69)

2.1.6 Cross-functional teams

Large part of category management is cross-organizational teamwork across the business because of category management will not succeed if it is perceived only as an action started by purchasing. One man's efforts to drive change originated from purchasing department will most likely to be overruled by others not interested parts of an organization. Cross-functional teams are therefore assembled with members from important functions through organization lead by category manager from purchasing. (O'Brien 2015, 59; Huuhka 2017,69)

Cordel and Thompson (2018, 14) are saying that cross-functional teams are created based on team charter which focuses on how the team communicates, works and executes its tasks. Team charter is seen as a supporting document to a project charter, which is a document declared by senior management authorizing the task of the project to begin or continue and gives the project manager a mandate to do his work (PMI 2017). The project charter defines and specifies following topics (Cordel and Thompson 2018, 7): Purpose, scope, team, objectives, constraints and success criteria.

Project charter determinates several points which team charter has to follow and later on, the category management team's results are being assessed. The project charter gives explanation to questions such as why category team has been created, what is the scope of team, which key representatives of different factions should be included into the category team and what the team is aiming for and what tangible methods will be used to achieve this goal. Project and team charter is being portrayed in the figure 4.

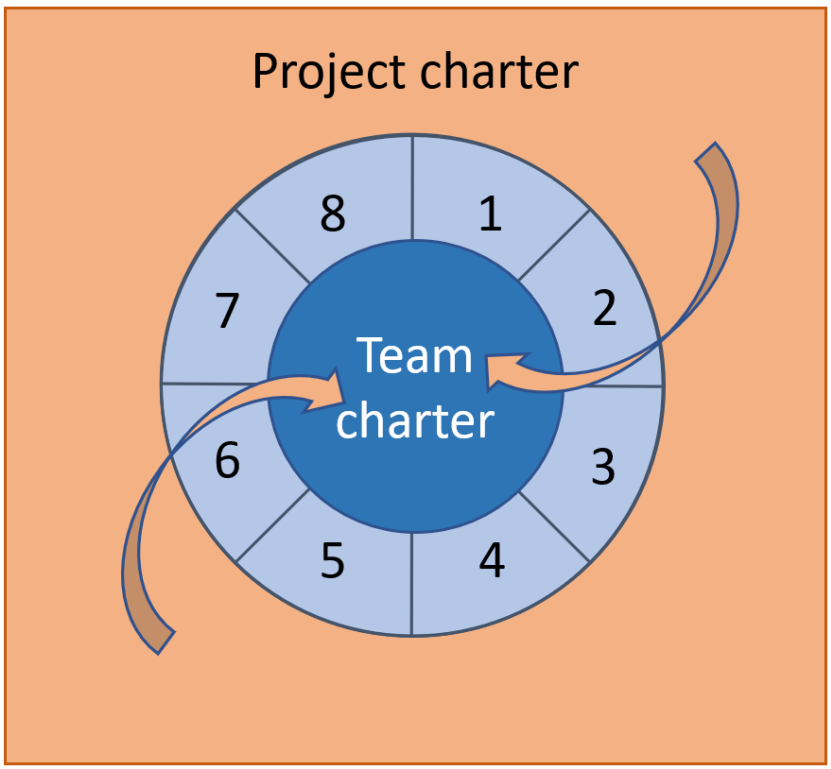


Figure 4: Team charter (Cordell & Thompson 2018, 13)

A normal team structure will be composed of following factors (Cordell & Thompson 2018, 14):

1. Purpose: The incentive for building the cross-functional category team is assigned from the project charter ensuring the unity in general understanding and insight of what the final objective is.

2. Scope: The scope has also been defined by the project charter. The idea is to support constant consciousness of the team's limits. Some team members might be able to contribute this topic.

3. Team: A list of consisting key category team members, defining their roles and time quota to be used for category team tasks. Other useful resources and stakeholders could be identified in order to proceed the cause.

4. Ground rules: General rules to be agreed what kind of actions are acceptable, what are the values of the team and how future conflicts will be handled.

5. Member roles and responsibilities: Each team member's role and responsibility are being portrayed. A team member representing, for instance, marketing function, could be given the role of communication in order to boost the category project crosswise the organization as part of his or her category team responsibilities.

6. A team leader's obligations: Critical role in attaining successful project. The responsibilities of the team leader should be discussed amongst team members will create transparency, acceptance and support for the position.

7. Responsibilities of a sponsor: Team sponsors are rarely seen in team meetings since they are participating by giving their senior level support instead of active participation in meetings. A sponsor's role is to facilitate alliance building and internal growth. A sponsor's level of assistance has to be stated and agreed in the team charter.

8. Risks and restrictions: Potential risks to defy the success of a category team are being identified, such as organizational and political barriers.

In some cases, it is not wise to promote the fact, that the team is led by purchasing because of it could possibly lead to unwanted outcomes, especially if purchasing is still seen only as a tactical support function in the organization. One suggestion to this problem is to change language, for example team leader is mentioned as "facilitator" or "coordinator" which can potentially be seen as less provoking. Purchasing should be the ruling party for the category teams since purchasing has the best view over organization to accomplish this task assuming that the selected persons are capable of completing this task. (O'Brien 2015, 59; Huuhka 2017,69)

Individuals, who are chosen into a category management teams, should have sufficient amount of knowledge about the products and services of a supply category and about their usage in a company. These team members should also have enough time to use for this category management-project accepted and supported by the highest level of management. Communication is a vital skill for a person to be considered as member of a category management team since they should be able to transfer constantly information to their own departments, and when needed, they should also be skillful enough to defeat the challenging opinions coming from their own departments to convince others too about the benefits of these changes. (O'Brien 2015, 59-60; Huuhka 2017, 69)

The category manager's position as a team leader is everything but easy and it can be translated as searched qualities and skills about strong supply management knowhow, motivation skills, understanding of group dynamics, ability to listen, action planning skills, project management skills, prioritization skills, coaching skills and convincing presentation skills. Category manager has to be able to be present and understand the human side factors affecting team formation and later development. (O'Brien 2015, 59-60; Huuhka 2017, 69)

Cross-functional teams usually have very rough start since most of the team members are showing little interest towards the cause, disputes may erupt between team members, knowingly "sabotage" the project by working slowly or creating some other hindrances on purpose. As the team members start to understand the magnitude of what can be achieved with these category teams and working together determining division of labor for searching the needed data, brainstorming the breakthrough ideas, giving support and driving the change into an organization. The former rebellious team members have become apostles of change who have taken the prosed ideas to their own. (O'Brien 2015, 61-62; Huuhka 2017,69)

The amount of team members needs to be carefully considered whenever a category team is being assembled. Too small team will not get enough resources or it is not represented widely enough in an organization whereas too large team will become unstable and unable to make progress or decisions at all. Suggested amount of team members inside of a range from three to eight persons. If a project is a larger one handling extensive category or geographical area involving numerous persons, then sub-teams should be created, which would work on assigned specific areas under guidance of a team leader. (O'Brien 2015, 61-62; Huuhka 2017,69)

As previously said, category management will require lots of resources of a company, this is seen how much category team members have to commit into the project. For a big international or local category project supposedly lasting 12 months, it would require approximately half of a work day worth of commitment every week for the project's duration. (O'Brien 2015, 63-64; Huuhka 2017, 70)

After putting lots of resources and effort into making cross-functional team, the composition of the group might not sadly stay idle. Persons may leave, requirements of the business might state that a certain person needs to be changed or a person needs to be changed based on his

insufficient performance, lack of ability to fit in. However, a team should be focused on searching, collecting and studying data, understanding the marketplace, looking for opportunities and deciding the most optimal sourcing strategy. (O'Brien 2015, 63-64; Huuhka 2017, 70)

Later on, the project will move on to utilizing this strategy, governing change management in the organization, building new procurement relationships, creating KPIs to be used in measuring suppliers leading eventually to the point, where the strategy, has been successfully implemented and relationship with the suppliers, locks in the continuous development-phase. At this point a totally fresh type of a refection might be needed from a group practically meaning the current group will be dismantled and a new, more suitable, group will continue to breathe life into this strategy until it is truly exists. (O'Brien 2015, 63-64; Huuhka 2017,70)

2.1.7 Facts and data

People are constantly making irrational decisions and method of making decisions can vary greatly based on the situation, company and deciding person. For example a decision could be made by a CEO in a dictatorial fashion, through collective voting or based on coincidence in a coin toss. In some cases, the decision is achieved by a one person's opinions, knowledge or assumptions about the current and future situations. Making decisions like this is very short-sighted and it contains numerous risks. (O'Brien 2015, 64-66; Huuhka 2017,70)

Cordell and Thompson (2018, 42) describe data gathering as a vital part of category analysis and gathering of category information, for example revealing how many potential suppliers there currently are and what is the current situation in supply-market dynamics. Figure 5 demonstrates how data gathering process is constantly ongoing process.

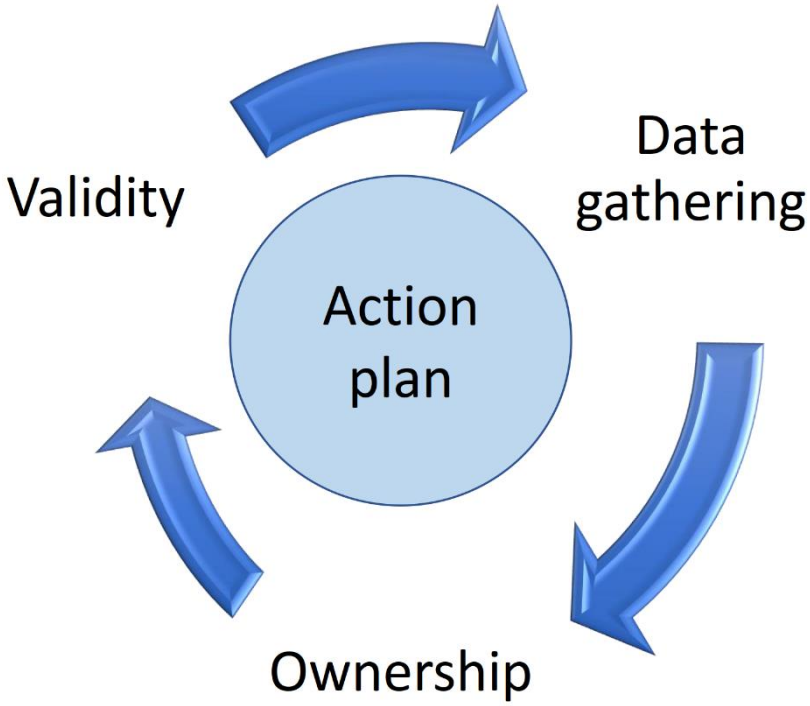


Figure 5: Data gathering process (Cordell & Thompson 2018, 43)

Acquiring and analyzing data to combine it with facts would be the wisest thing to support the decision-making process and simultaneously degrease risks. High level executives seem often very slow in their decision making even though in reality the decision might have been made some time ago. This hold back, until the last possible moment before decision has to be made, is due to acquiring the most recent facts and data available to make sure that the decision will be the right one. This also applies to category management, which aims to make the right decisions, for example studying and possible later applying changes and new sourcing strategies within an organization, analyzing possible risks resulted from potential failing and alternative plans to cope with these unpleasant scenarios. (Cordell and Thompson 2018, 43)

O'Brien (2015, 65) presents three crucial roles facts and data play in category management: Minimizing risks in decision making, supplying convincing examples supporting change and delivering a reason to involve and engage the business and key stakeholder

The chapter 2.1.3 studies change management identified as one of the three foundations of category management and resistance to change has been determined as a most important factor to hinder and possibly even stop a specific change-process altogether inside an

organization. Facts and data can be the needed tools to lower the resistance to change to manageable level to drive the change successfully.

2.2 Category profile, category formation and stakeholder management

Huuhka (2018, 66) states that there is no single way to determine how to categorize purchasing but the different levels of categories in the hierarchy of categories depend on a company and its level of purchasing. Heikkilä et al. (2009a) point out that companies have usually 3-20 different main categories and reaching to over 100 individual sub-categories while small size enterprises are conducting their purchasing by one or two persons. Small sized companies should still utilize category management by dividing purchases into categories and create proper strategies for each of the categories. Categories created by a small firm can be relatable easy to govern with a list of notes whereas a large-scale category strategy is a detailed plan focusing on what kind of relationship is wanted with different supplier bases and what results are being pursued. (Heikkilä et al. 2009a)

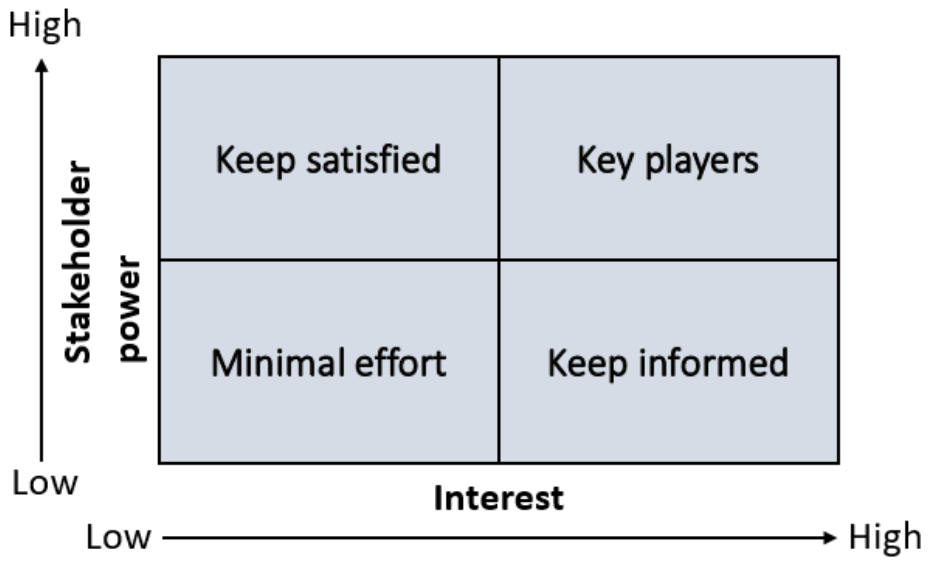
When establishing purchasing categories, it is important to take into consideration the different aspects of supply markets. Item groups can vary greatly inside a purchasing category based on their technical features and functions. However, these varying item groups can be placed into a same category if their business logic and supply markets are similar. (Huuhka 2018, 66)

Cordell and Thompson (2018, 42) explain a detailed category profile being something, which contains all organizational consumption, that could be possible lead to rationalization of specifications, suppliers and legal contracts, and hence improves the ability to bargain volume-based pricing or grasp to other possible opportunities offering additional value.

Stakeholders are classified based on the power they hold and the possibility they are going to be interested in endorsing or resisting the project consequently. From a category management point of a view, this power / interest matrix displayed in the table 4 creates a profile of important business stakeholders in the category management project, helps with setting up cross-functional relationships, makes it easier receiving support and commitment towards category management decision making and helps to predict potential areas of conflict in which a stakeholder might be having an altercation with another stakeholder or organization. Being able to understand creates a possibility for more efficient and relevant

communication. This way the resources are pointed towards the key decision makers in order to get them convinced and give their support to iniatives of a category management team. Even though the power / interest matrix works as efficient and simple way of evaluate stakeholders, it does not give any practical tips how to properly communicate with them. (Cordell & Thompson 2018, 20) Table 4 demonstrates how various stakeholders have a hold over on development of categories.

Table 4: The power / interest matrix (Mendelow 1991)



The four key elements presented in the table 4 are as following (Cordell & Thompson 2018, 20):

Low power / low interest – The stakeholders in this group do not need much attempt in consultation.

Low power / high interest – These stakeholders are the ones, who need to be kept informed but mostly due to courtesy reasons since they do not have lots of power.

Low interest / high power – A group of stakeholders, which needs to be kept satisfied since they have power and influence, which is not wanted to turn against a category team's activities.

High interest / High power – Members of this stakeholder group are the important persons, heavyweights of higher-ups, who needs to be informed and acknowledged at every step of

the category project because without their constant support things will not proceed. The persons of this group have the needed level of influence and a direct access to the required resources.

Although the power of different stakeholders varies greatly depending on which industry and country is being reviewed, two different vital factors have been identified to constantly occur. The interest every stakeholder displays in communicating their expectations on the category management strategy of an organization; The stakeholders' levels of power and the ability to sway creates a possibility to get things done. By understanding different stakeholders, it is possible to improve the level of communication and focus on people, who are key decision makers instead of spending time with stakeholders holding very limited power. (Cordell & Thompson 2018, 20)

2.3 Category strategies and category plan

Cordell & Thompson (2018, 85) are underlining the importance of thorough research and censorious analysis, which are giving the foundation for the development of a successful category strategy. Basically, a category strategy is a continuing plan to govern the spend within various different categories and it shouldn't be mixed up with short-term plan to find a new supplier emphasizing that sourcing and category management are not same processes with same results. Table 5 presents the fundamental differences amongst category strategy and sourcing. (Cordell & Thompson 2018, 85)

Table 5: Category management: Differences between category strategy and sourcing (Cordell & Thompson 2018, 85)

CATEGORY STRATEGY	SOURCING
Can include multiple different and broad range of solutions, not just sourcing	Collecting requirements, studying supply markets, receiving competing quotations
Wider concept than sourcing: E.g. One desired outcome of utilizing category strategy could be	Purchasing agreements will be done with the best overall suppliers
Scope: Long-term plan	Scope: Short-term plan

Table 5 explains that category strategy has more different means than sourcing, which narrow mindedly focuses on procurement, to reach its goals Category strategy ought to examine every possible solution and then create a long-term plan for the full spend in the category. From the category management point of view category strategy means a cross-

functional and long-lasting plan to govern the category spend and complete established business requirements. A category strategy could be put in motion with following examples of usable means (Cordell & Thompson 2018, 85-87):

- Outsourcing / insourcing
- Opening existing deals to renegotiation / new deals
- Offshoring / reshoring
- Joint ventures with others
- SRM (Supplier Relationship Management)
- New product management
- Vertical integration
- Supply chain disintermediation
- Supply base rationalization
- Automation
- Process improvement
- Demand management
- Product substitution
- Business process reengineering

PCA-model is one of the most favored modern methods of strategy development and it is also called as “exploring strategy model”. PCA-model’s dynamic and evolving nature regards three collective sets of activity allowing to create and execute a strategy. (Johnson, G., Whittington, R., Scholes, /K., Angwin D. & Regnér, P. 2014) PCA-model is being presented in the figure 6.

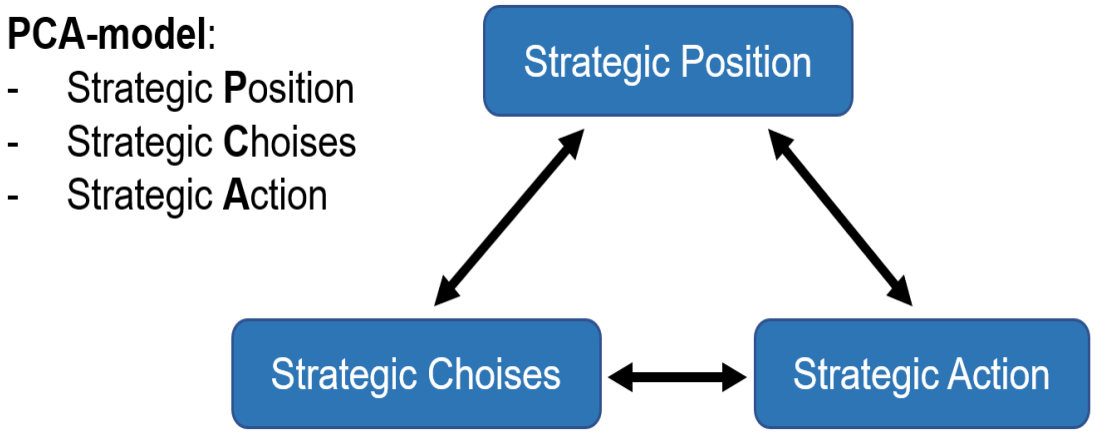


Figure 6: PCA strategy development model (Johnson et al. 2014)

PCA-model includes *strategic position (P),* which can be compared to the research and analysis activities of category management whereas *strategic choices (C)* and *strategic actions (A)* activities are identical to the strategy and phases of taking category management means into action (Cordell & Thompson 2018, 87; Johnson et al. 2014).

Cordell and Thompson (2018, 88) advice creating category strategy based on following rules of thumb:

- Category strategy should be fundamentally customer focused
- Longstanding direction (three to five years)
- Is fully cross-functional
- Can create huge improvement in terms of business value
- Is focused on several results (not only on cost savings)
- Is based on facts, data and research
- Can be agreed on by all stakeholders
- Is adaptable; changes will not cause problems

Cordell and Thompson (2018, 88) are pointing out that previously mentioned factors should be considered when a category team is creating a category strategy. Obvious solutions should

be avoided when a category team looks for creative ideas and solutions for the next time horizon of three to five years-. In stage 1 (Iniation) a category team has freedom to come up with a large number of opening ideas for a category strategy. The best of ideas proceed to stages 2 (Research) and 3 (Analysis) where they are being recorded for more detailed screening. Ideas should be evaluated on systematic manner so that ideas can be molded into something usable and of value. A category team's objective is to create and deepen the fundamental ideas by focusing on their practicality and applicability to become a mean worth considering. An operational effectiveness is the factor which differentiates an idea and an option from one another. When an idea is being scrutinized and constantly evolved in order to supply needed business benefits, it develops into an option which should be evaluated and validated. (Cordell & Thompson 2018, 88-89)

According to Cordell and Thompson (2018, 89) creating sufficient number of high-level ideas can rarely be achieved by staring at a blank document or requesting somebody to deliver a precious idea instantly. For a tool to make the idea generation process for category management easier Cordell and Thompson (2018, 89-90) are introducing a category strategy cube represented in the figure 7.

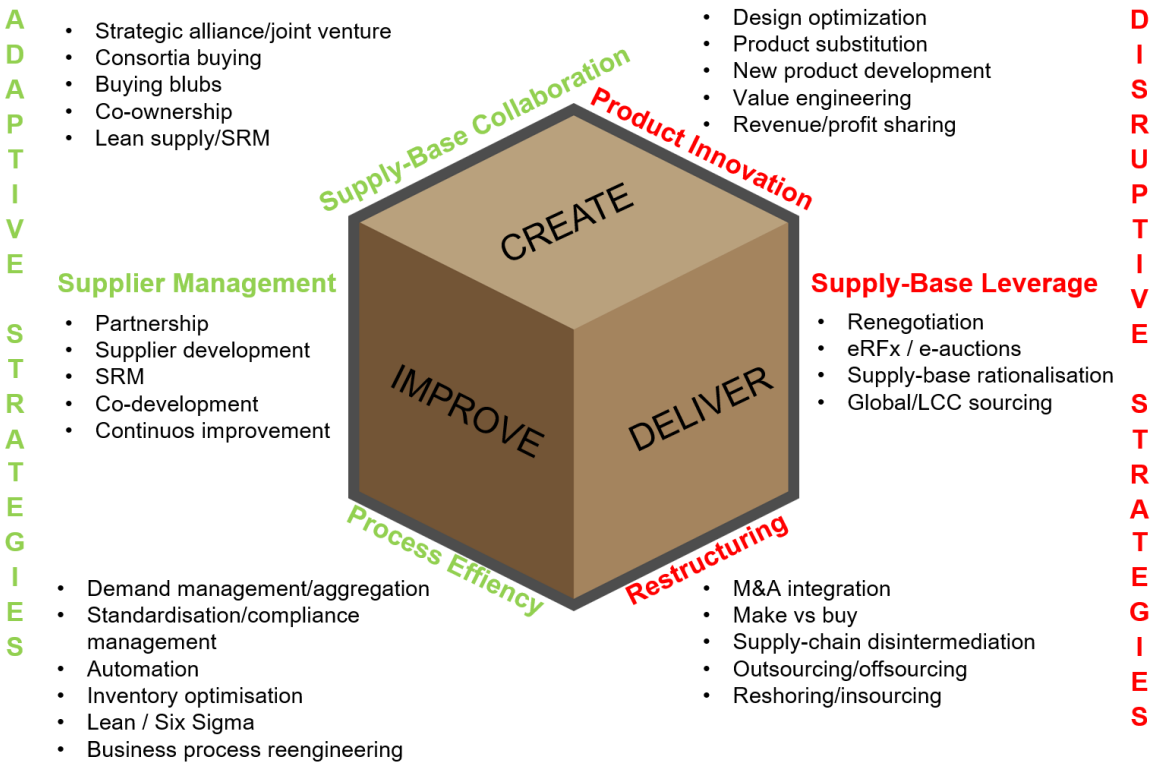


Figure 7: Category strategy cube (Cordell & Thompson 2018, 90)

The category strategy cube shown in the figure 7 is being explained through two different dimensions, the first of being *adaptive strategies* marked with green, such as supply-base collaboration, supplier management and process effiency. The second main dimension is *disruptive strategies*, for example product innovation, supply-base leverage and restructuring. Disruptive strategy's concept recognizes the fact, that the existing circumstances will be changed. This is due to new operating models, business reorganization and increase or decrease of business relationships. A category strategy cube presents three deeper features, which *create* value via fresh products and supply chains, those that are *delivering* value by altering the attributes of relationships and supply chains and those that will be *improving* value from remaining relationships and supply chains. A category strategy cube's three features and two dimensions function hand in hand in order to create a proactive and dynamic framework for accomplishing value-adding category strategies which are focusing on possibilities found outside the realm of traditional purchasing community. (Cordell and Thompson 2018, 90-91)

Cordel and Thompson (2018, 91) are giving following instructions to idea creation and utilization process:

- Crafting ideas is every category team member's and some other named stakeholders' obligation.
- Ideas should be recorded into an "idea log" all through the category management process so that every idea and insight are documented before the evaluation.
- Ideas should not be assessed over early and the flow of ideas suitable for a category strategy shouldn't be hindered.
- Practical tools, such as the category strategy cube, are recommended to create new thoughts inside a category team and amongst stakeholder community.
- Do not limit your business and supply chain solutions just into sourcing.
- Find different origins for your ideas with wide spectrum challenging traditional "limits" of innovations and thoughts.
- Whenever the needed quantity of initial ideas has been collected, study the attributes of the ideas in order to combine similar ones into same groups for increased synergy for the category.

- Thoroughly evaluate different options and ideas in a cooperation of different stakeholders with advanced suitability, feasibility and acceptability framework
- A couple or several different initiatives should be combined if it leads to a longstanding and adjustable category plan.
- Different stakeholders should be included in every different step of strategy-creating endeavors.

In the following list there are six different key activities which are potential continuums in this stage of the category management process: Dutch windmill, sourcing strategy wheel, power/dependency profiling, opportunity analysis and quick wins, option appraisal and category plan

The category plan compiles the strategy created by the category team and forecasts what will be the most likely managing method for a category for the coming three to five years. Being a constantly changing, "living" document, category plan needs to be regularly checked and revised according to coming updates as they show themselves inside the category. A category plan is regarded as the most useful method to distribute information to key stakeholders and request their constant involvement and criticism in order to breathe life into the constantly evolving category plan. Category managers might find themselves giving regular presentations about their category management proposals to their leadership team and stakeholders, which would only naturally create fruitful atmosphere for criticism and development. The idea behind this questioning is to challenge the proposals and their strength finally leading to strategy documents, which will go through to the implementation phase. (Cordell & Thompson 2018, 112)

According to Cordell and Thompson (2018, 112) a category plan can be recognized as an effective communication tool crosswise an organization, depending on the target audience the content has different forms: Executive summary, category overview, key stakeholder, analysis, category strategy, project plan, benefits and implementation.

Executive summary is a compilation of hard facts included in the plan, which gives its reader an instant information about vital points of the strategy and analysis of the achieved improvement inside the category. *Category overview* focuses on the types of goods or services being studied, how the category has been segmented, what is the geographical scope and high-level costs of the category. *Key stakeholders* is a list of an important persons, who

has been associated with the category and the potential effects, which could influence the key stakeholders' endeavor. *Analysis* compiles the most important discoveries gained from the analysis phase of the category management process and it should include aiding material in a form of schedules and attachments. (Cordell & Thompson 2018, 112)

Category strategy is a bird's eye view of the chosen strategy or strategies, for example outsourcing, utilizing dual suppliers or starting discussions again with a supplier. *Project plan* includes important milestones and dates combined with requirements for various resources. Project plan also takes into consideration risks and shows how different parts are interdependent. Project plan is usually shown as a Gantt chart, therefore all included documentation needed for reporting must be incorporated into timetables and attachments. *Benefits* is a list of profits to be aimed at as result of utilizing the category and waiting for the practical results to emerge. *Implementation* can be seen as the date when the delivery or handover, when the wanted change will be taken into practical setting and hence it might need a transition plan to help the adaption. (Cordell & Thompson 2018, 112)

Cordell and Thompson (2018, 113) underline several category management applications of the category plan in the following list:

- Gives a condensed analysis of a category strategy
- Allows key stakeholders to study and take part into to the strategy
- Works as an advertising method for the process
- Enables category team members to proceed without having to worry if personnel changes occur within the team causing data disappearing
- Leaves trackable audit trails for the projects

When in speaking of limitations of category plan Cordell and Thompson (2018, 113) mention that the amount of time and resources used to create category plan varies greatly from company to company. Other organizations choose to go with short and compact category plan whereas in the world of consulting, where details are highly valued, a category plan can be several hundred pages long even though the category being studied could be relatively small in size leading to wasting time for a modest gain. Another potential downside of category plan is that category plan presentations held for the function's leadership team can change from helpful and productive situations into a traumatic experience, in which the

category team's member are being ridiculed with overflowing criticism and subjective strong opinions by the evaluating leadership personnel. (Cordell & Thompson 2018, 113)

2.4 Process of category management

There is not only one suitable category management process existing but several various options without telling which one them earns the title of being the best. Category management processes can vary from short and general to long and detailed versions depending on situations and companies. However, it is to be noted that a category management process cannot be comprised into one universal mold regarding the length and stages of category management process, it is closer to reality to argue that each category management processes are individuals with their own attributes. Figure 8 represents a classical category management process with five different stages, which has been widely used within corporate world. (Cordell & Thompson 2018, 2)

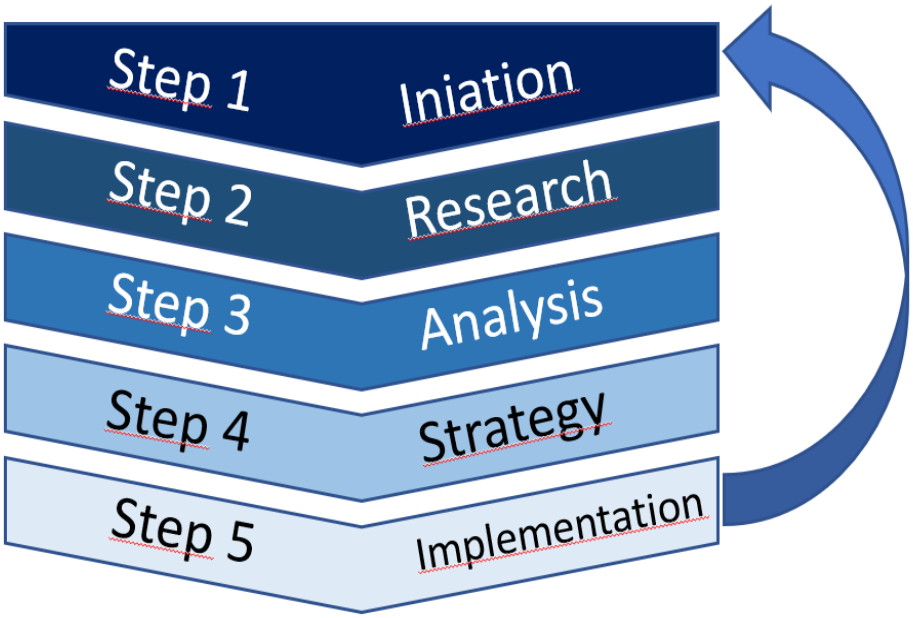


Figure 8: Category management process (Cordell & Thompson 2018, 2)

The pros of five-stage category management process model shown in the figure XX are keeping the structure understandable and it collects the different actions into logical executing order. Less than five stages could cause single process stages being too massive whereas more than five stages could make thing more difficult. Between each step is "a

gateway" where assessment and monitoring of development happens. These so-called gateways also function as methods to install governance to the whole process and in more developed category management processes they are "go/no go" judgment milestones, which helps keeping focus and high-level project management trailing each of the process steps. (Cordell & Thompson 2018, 2-3)

3 SUPPLY STRATEGY

Supply strategy has got significantly increased level of interest during these past decades. Large scale companies have managed to invest to study and develop supply strategies whereas smaller firms haven't been able to develop their supply strategies due to their scarce resources. (Anttila, Jussila & Mikkola 2013, 3-11) Supply strategy can be seen as long-term plan giving correct direction for supply management. Supply strategy has been defined in several different ways in the past and one of the most popular method is to utilize strategic purchasing matrixes, derived from the purchasing portfolio of Kraljic, to categorize purchases effectively. (Hawkings, Gravier & Powley 2011, 567-568)

Simply put supply strategy is, according to Lysons and Farrington (2006, 44), related to the certain activities that procurement is able to reach its set targets. Ahtonen and Virolainen (2009) underline that the roles of supply management and supply strategy have grown stronger within organizations and Carter and Narasim (1996, 26) found in their research that supply strategy has a clear correlation with a company's business performance. Mintzberg (1994) points out that strategy, can be deliberate plan, of which's creation demands extremely complicated thought processes regarding human creativity but at the same time strategy can be developed unintentionally as a result of learning and adapting to one's surroundings one situation at a time.

The business strategy of an organization is not enough to guide the supply management on its own, thus more specific and effective supply strategy needs to be developed, in order to lead the performance as effective as possible. Supply strategy shouldn't object overall business strategy or be without including it into the business strategy. (Watts, Kim & Hahn 1992) Lintukangas et al. (2013, 398) point out similar results that supply strategy should be incorporated into other strategies of a company, and that these strategies can differ based on each existent situation, depending on the service or item being purchased. The aim of creating, implementing and assessing supply strategy is to build perfect balance regarding the purchasing resources and the barriers and opportunities set by present environment (Scheuing 1989, 140).

On the other hand, strategic purchasing differs from supply strategy since it combines the targets of purchasing and the entire organization being as one relatively easily utilized

method for supplier management. Hence the utilization needs some important actions, e.g., properly crafted long-term purchasing plan, including reservations for various types of supplier relationships. (Carr & Peason, 1999)

According to Spekman (1985) strategic sourcing is divided into three different levels of strategy: Activity based strategies, strategies based on sourcing system and competitive sourcing strategies. Activity based strategy focuses on governance over sourcing resources, user services and cost management. Strategies based on sourcing system targets organization's ability to transfer information with its closest business partners, supplier selection, viable duration of contracts and value analyses. Competitive sourcing strategies concentrate on purchasing party's negotiation power, which can be seen as a factor to increase an organization's competitive advantage. (Spekman 1985, 94-99)

Supply strategies vary between different companies due to various supply markets. Strategy is being molded by different factors, for example the item being procured, timing of the purchase, purchasing history, the nature of purchasing environment and the sourcing company itself. Usable resources, negotiation power and sourcing principles are always individual characteristics to each company and thus every supply strategy should be individually tailored to each company. (Corey, 1978) Whereas Corey mentions that sourcing strategies need to be individual to each company Hawkings et al. (2011, 567-568) say that the products and services being sourced by a company differ greatly from one another, which means that not all of the sourcing and purchasing activities can be led by single supply strategy. Therefore, supply strategy contains a group of various strategies for different product and service categories. Supply strategy determines contract types, supply risks, time period of valid supply contracts, selection criteria for suppliers, number of chosen suppliers, incentive program and strategies regarding supplier governance. (Hawkings et al. 2011, 567-568)

Theoretical supply management and supply strategy decisions can be derived from transaction cost economics and resource-based point of view which are both traditional theories bringing up the intimate relation amidst supply strategy and the business strategy. Creation of supply strategy can be started from focusing to key elements, which act as a foundation of building and developing supply strategy. These key elements help to determine what are the areas of supply strategy in need of development. (Ahtonen & Virolainen 2009) In figure 9 Ahtonen and Virolainen (2009, 270) present an example how supply strategy

creation starts from make or buy- decision but they also underline that, supply strategy can as well originate from other supply strategy elements.

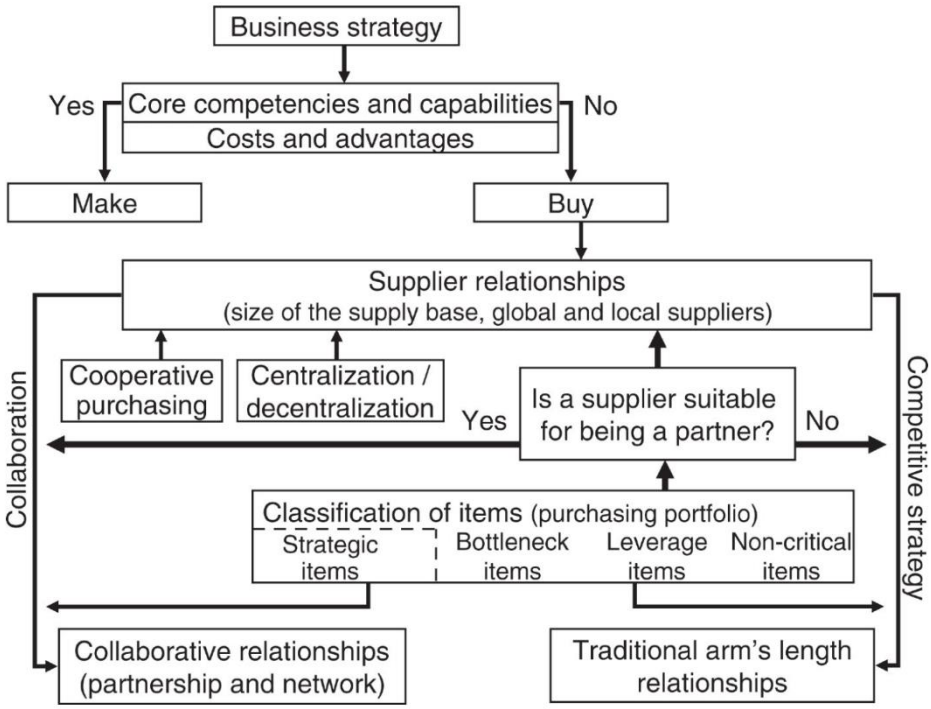


Figure 9: The formation of supply strategy (Ahtonen & Virolainen 2009, 270)

Figure 9 also shows that the overall business strategy combined with other strategies should act as a foundation for supply strategy. In ideal situation supply strategy starts to evolve with the make or buy-situation based on the company's core competences, but is not abnormal if supply strategy starts from some other element based on each individual situation. (Ahtonen & Virolainen 2009, 270)

3.1 Make or buy – decisions

Several financial decisions have to be made in order to be able get different goods and services for a company. These decisions dance around the question whether a company should purchase needed items or services with direct purchases or resort to using internal resources and manufacturing these needed commodities by itself. Therefore, these decisions are commonly known as *make or buy* and *lease or buy* since these options need to be analyzed with comparative analysis. (Sollish & Semanik 2012, 283) Since the choice to use external suppliers or internal resources has critical implications for a company, the decision

should be made from a longstanding strategic viewpoint including senior management's guidance (Lambert 2014, 158).

Make or buy analysis is identified as the process, which gives the answer to whether an organization should use internal resources to manufacture a specific service or product internally or should it instead decide to procure needed items from a third-party supplier (Sollish & Semanik 2012, 283). According to Coase (1937) the conventional theory dictates that if transaction costs exceed the costs of production, the production will be handled internally. However, more recent studies have discovered a couple of strategic options for a firm: Concentrating resources on the core competencies whereas outsourcing would be used for others than core competencies or strategically significant elements. Core competencies can be identified as resources, which are vital to a company's processes and operations and thus firms are searching other companies possessing completing resources to function as one of their suppliers. (Quinn & Hilmer 1994, 43)

Quinn and Hilmer (1994, 43) are listing several advantages of successfully fusing outsourcing and core competencies: Maximal results can be expected from the usage of internal resources when they are being aimed at the company's highest knowhow, highly developed core competencies tend to obstruct competition, abilities of supplier base are comprehensively employed and risks are decreasing due to smaller need of capital expenditure and briefer cycle times. Lambert (2014, 158) tells that one essential element of make or buy decision is to establish to which degree products should be produced internally and how much by various suppliers.

Hobbs (1996, 19) introduces vertical co-ordination or integration as a continuum where spot markets are placed in the end and full vertical integration can be found from the opposite end. In this case full vertical integration means classical internal manufacturing, in where products go through different levels of manufacturing and processing because of internally placed directorial orders instead of purchasing price dictated by the supplier base. Spot markets can be compared to the most ideal market places available. (Hobbs 1996, 19) These hybrid options in the midst of vertical integration and markets are called partnerships, which are depicted in the figure XX (Blomqvist, Kyläheiko & Virolainen 2002).

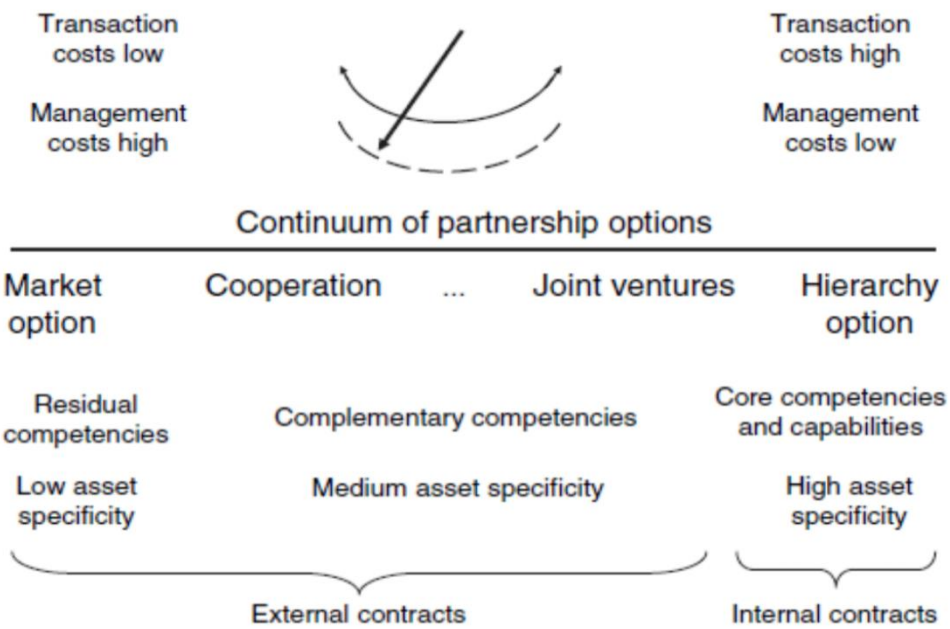


Figure 10: Continuum of partnership options (Ahtonen & Virolainen 2009; Adapted from Blomqvist et al. 2002)

Figure 10 demonstrates how various options can be seen as an optimal choice in miscellaneous situations while transaction cost economics is the demonstrating element. The framework presented in figure 10 has been created for analyzing elementary choices between the markets and hierarchies, the increase of various governance possibilities are being identified as vertical integration and the market option. Vertical integration should be primary choice in a situation in which uncertainty, threat of opportunism, complicated conditions and resource particularity are formidable while there exist only small number of suppliers with equivalent abilities and the trustworthiness is yet to be created between the parties. (Ahtonen & Virolainen 2009)

Market option can be considered more desirable option when the level of degrees of uncertainty and situation complexity are close to insignificant levels and the threat of opportunistic behavior is not probable to happen causing numerous different suppliers to exist on markets and transactions can be handled without any special investments (Blomqvist et al. 2002).

3.1. Vertical integration

Williamson says (1981) that when vertical integration shows itself the market is not working as it should since transaction costs are excessive. Whenever management costs are nominal vertical integration or hierarchies are usually being adopted to cope with the situation. With modest management costs companies often resort to internal manufacturing and the probability to produce products internally increases during time of unpredictability, asset distinct investments are needed and whereas the threat of opportunism holds power. (Blomqvist et al. 2002)

According to Blomqvist et al. (2002) a company is able to utilize acquired research and capitalize on economies of scope showing themselves while applying its own resources. This way companies could adopt new innovations expanding competitive advantage or possibly profit from a monopoly situation. Ownership also assures efficient management and command of resources which cannot be taken granted using while outsourcing. The communication can be seen working more efficiently if the communication transfer happened inside a company whereas level of communication degreases when a company's borderlines are overpassed. (Blomqvist et al. 2002)

3.2 Hybrids, partnerships and obligational contracts

The middle ground in the continuum of vertical integration show management costs, asset particularity and expertise. The middle section is possible to view as hybrids or partnerships. According to Parker & Hartley (1997) the list of basic types of partnerships includes procuring from subsidiaries, joint ventures, sourcing from partnerships, supply networks and utilizing preferred supplier systems. The above-mentioned methods vary from more vertically integrated to less integrated. Commonly advancement to buyer-supplier relations are built on two assumptions: The relationship is governed most effectively via market mechanism meaning suppliers are going up against each other and secondly the client and the supplier also battle for their percentage of the profit margin (Leavy 2001). Partnerships can be seen as best option in a situation where transaction are taking place, asset specificity is rather immense but the assets can be used for several different purpose (Williamson 1981). Blomqvist et al (2002) point out that it is more likely to receive greater gains from partnerships than independent investments due to the fact partnership gives a possibility for

the both parties to merge their economies of scale and economies of scope which can lead in best case scenario both parties benefitting from markets and vertical integration. Ellram and Billington (2001) bring up a note that partnerships can be seen effective when supply chain is fixed specific point: Most likely it is not possible to achieve this point without long-term relationships and collaboration.

Partnerships give several potential ways to earn profit for companies. Companies are able to stay on their core competencies without losing their position in the value chain. Partnership enables coordinated knowledge sharing and generates motivation for coordination. Owning the assets separately reduces the risk by dividing it among partners. Partnership boosts the will to create and use relation-specific assets, which will make every party member more committed. If companies are able to use economies of scale and scope to their advantage, it should result gains from in a form of increased quality and reduced delivery time to the markets. (Blomqvist et al. 2002)

According to Ellram and Billington (2001) partnerships pose different risks such as loos of control and heightened dependency or increasing costs. Long-lasting dependency on a partner is possible to lead to diminishing will to invest in cutting edge technologies, resulting the firm being exposed and stationary. True costs of partnership are difficult to evaluate. Decisions among various governance modes are often affected by subjective estimates due to the effects are extremely challenging to evaluate in advance. (Blomqvist et al. 2002)

Parker and Hartley (1997, 119) criticize partnerships by saying that it might be harder to create win-win outcomes for all parties with partnership sourcing compared to competitive contracting. Different factors affect to the outcome of partnership sourcing and its functionality: Power, information, joint learning and public procurement if available (Parker & Hartley 1997, 121) To avoid opportunistic behavior informational asymmetry should be avoided and inter-organizational trust should be increased (Blomqvist et al. 2002, 12). Trust is a significant enabler in every partnership and with-it partnerships are able to enjoy low transaction costs (trusting and loose contract terms and lack of other defense mechanisms for opportunism) and the viability of the partnership increases.

3.3 Centralization, decentralization and consortium sourcing

Figuring out the optimum level of centralization has been widely under academic debate, mostly due its significant role in supply strategy. Arnold (1999, 168) presents that, global sourcing's organizational troubles are greatly revolving around the degree of centralization. Decentralization addresses the situation in which various departments are conducting their own purchasing or relying on separate procurement processes and thus acts as an opposite to centralization. Ahtonen and Virolainen (2009, 267) bring forth an observation that firms are rarely using only one of the centralization or decentralization options but rather a combination of the two in order to achieve maximal benefit from the decision. The potential positive and negative outcomes of using centralization are portrayed in table 6.

Table 6: Pros and cons of centralization (Iloranta et al. 2012, 319)

CENTRALIZATION - PROS	CENTRALIZATION - CONS
Centralizing can create benefit through economies of scale and negotiation power.	The decision making could be limited strategically important topic inside units.
Easier and wider standardization of sourcing activities.	Over standardization of business units' strategic needs
Sourcing organization is more cost-effective and efficient.	Can possible raise resistance to change within units.
Employees are able to spesialize into certain topics, education and proper training becomes valuable and cumulation of know-how.	Accumulation of employees in the headquarters.
Sourcing organization is a close knit unit being easier to to lead, measure and reward.	Narrow sighted vision of sourcing personnel and lack of communication towards other units.
Management of costs of capital and warehouses gets easier.	Long distances between the sourcing specialists and the commodity to-be-purchased and customers (internal or external).

According to McCue and Pitzer (2000, 402) completely decentralized purchasing function can operate without a designated purchasing department. Matthyssens and Faes (1996) note some outputs in behalf of decentralization: Local buyers find their work tasks more meaningful, quicker deliveries and better and more swift service from suppliers. More positive and negative outcomes of using decentralization can be seen in table 7.

Table 7: Pros and cons of decentralization (Iloranta et al. 2012, 319)

DECENTRALIZATION - PROS	DECENTRALIZATION - CONS
Decentralization enables decision making without limits within the frames of business making creating direct profit responsibility.	Purchasing volumes degreases significantly and negotiation power towards suppliers is lost.
Suppliers and customers are most likely to in close proximity to each other.	Contracts, prices and terms varies between units.
Suppliers can be utilized in a better way in product development.	Standardization is difficult.
The responsibilities of sourcing personnel are far and wide.	It is hard to interpret total cost on a group or company level.
Reporting is simple.	Focus lies on local suppliers: Global suppliers are harder to utilize.
The need of bureaucracy and coordination are decreacing.	

According to Matthyssens & Faes (1996) centralization and decentralization can be interpreted as the ends of the continuum presented in the figure 11 (continuum of partnership options) and thus approximately half way of the continuum lies consortium sourcing. Tella and Virolainen (2005, 162) explain that purchasing consortium can be also referred as cooperative purchasing, buying offices, pooled purchasing or group purchasing. Consortium sourcing can be seen very beneficial tool to SMEs by giving them ability to create rewards which are normally achievable by bigger organizations.

The reasons why companies should utilize purchasing consortia are transaction cost economics, game theory and the experience curve. Essig (2000, 18) tells that through purchasing consortia the number of transactions is going down creating savings in transaction costs. Purchasing consortia can be seen creating lower transaction costs by decreasing asset specificity due to smaller required investment in the first place. Experience curve forecasts reduced costs by achieved by raised production, which should lessen production process' costs. The benefit of purchasing consortiums is their ability to boost the purchasing result by combining purchases together creating savings in material and alternative costs. Game theory can be used as traditional justification why supplier should cooperate and receive rewards applying to purchasing consortiums as well. In the long-term suppliers should stay within the purchasing consortium, even if the temptation of going past consortium and dealing with a supplier directly would be high, the most desirable outcome will be reached to all sides with purchasing consortium. Without trust a purchasing

consortium cannot function properly undermining willingness for continuing cooperation, which is most often perquisite achieving wanted results. (Tella & Virolainen, 2005)

3.4 Supplier relationships

Firms want to obtain themselves the optimum sum of suppliers which can be seen as an important strategic decision. Single sourcing can be seen as radical example since it includes using only one supplier while the opposite example is multiple sourcing. Multiple sourcing, in which several suppliers take part in manufacturing a single product, is much more normal procedure for firms compared to single sourcing. Therefore, multiple sourcing can be utilized as a cost-saving tool within the companies. (Van Weele 2005, 162)

Large portion of firms could be able to gain from utilizing fewer suppliers and managing these purchases more sufficiently but the matter is not so black and white. One major thing to consider is the supplier location. Big firms are doing their purchasing from global markets whereas SMEs are constantly shifting their purchasing activities towards global environment in increasing quantities. Sourcing locally has usually provided smaller transaction costs gained through capable supplier management and improved control. The downsides with local sourcing are usually quality, which is usually lacking compared to the products procured from global markets and increased costs compared to purchasing from global markets.

However, purchasing from global markets has its own complications and one of the originates from long distance between the supplier and the client. Governing the suppliers over long distance and keeping the responsiveness in the supply chain on sufficient level are acknowledged problems with purchasing from global markets. Reducing the number of suppliers has been provided as potential solution for these problems and wide supply bases have been deemed as inefficient regarding their application of resources. (Cousins 1999) When the supply base is wide, this increases transaction costs through risen number of transactions. Cousins (1999) proposes supply base rationalization as a remedy, specifically meaning decreasing the number of suppliers. On the other hand, Sarkar and Mohapatra (2006, 150) argue that the supply base rationalization can go both ways, either increasing the number of suppliers or cutting them down based on the present situation. The optimal size of the supply base will be determined based on supply risks. Kraljic's (1983) portfolio model has been labeled as one of the best tools to counter this problem since it recognizes

availability, quantity of potential suppliers, warehousing risks and the probability of being substituted being the primary supply risks.

3.5 Sourcing business model mapping process

According to Kling et al. (2015, 189) large quantity of companies are using several sourcing business models, which is beneficial, but choosing the correct sourcing business models often proves to be a hard question. As a background of the determining the best possible sourcing business model for a company, a spend category should be analyzed by stakeholders via these following dimensions (Kling et al. 2015, 190):

- Determine the comprehensive level of dependency correlated with all spend categories
- What would be the strategic influence of the spend category? Is a spend category producing core competence or competitive advantage for a company?
- What kind of risks are there included within the chosen spend category?
- What is the level of potential to generate collective gain via supplier cooperation?
- In which field is the work scope placed?
- How critical is the work?
- What are the set risk tolerance limits?

Previously presented seven dimensions are arranged into 25 main aspects. A purchaser places 25 different characteristics of a chosen explicit spend category all over a sourcing continuum; For instance, overall cost to change supplier varies from low to high. (Kling et al. 2015, 190)

Two factors are crucial for find the optimal sourcing business model: the most suitable relationship model and the most suitable economic model (Kling et al. 2015, 190). The concept of relation models originates from Oliver Williamson's efforts that divides an organization's sourcing needs into three different categories: hybrid (rational / hybrid models), market (transactional models) and hierarchical (investment-based models) (Williamson 2008).

Business model mapping process aims to reveal which is the best sourcing business models to fulfill your needs in the best possible way. Business model mapping process includes four different steps (Kling et al. 2015, 191):

- Choose the specific spend category or categories you are sourcing or will be most likely sourcing in the future.
- Apply business model mapping template to find out the most suitable relationship model for the commodity you are sourcing.
- Apply the business model mapping template to find out the best economic model for the commodity you are sourcing.

Apply the business model mapping matrix to create an understanding of the most suitable sourcing business model for you. The most preferred model is an unification of your choosing regarding relationship and economic model.

In the first step you choose the spend categories of commodities your company is needing to either buy or make. Within this study are also services and products which are currently been insourced or outsourced and future commodities a company will need to choose to buy or make.

Step two focuses on the mapping section of the process. Business model mapping template is the tool to use mapping all the aspects that will have effect into a company's relationship model. The business model mapping template has a lot in common with the Kraljic model regarding the concepts of business risks and profit effect but it also contains 23 extra factors from several fields, such as transaction costs economies, a company's core competency, agency theory and relative contract theory. In table 8 there is a business model mapping template displayed and its function is to showcase an overall preference for a transactional, relational or investment-based model after mapping all the relational aspects.

Table 8: Business model mapping attributes: Level of supplier integration / interface (adapted from Kling et al. 2015, 194)

Attributes to determine best relationship model	Transactional contract		Relational contract			Investment
	A	B	C	D	E	F
Level of supplier integration / interface required (systems, support, processes)	None	None	Medium	High	Very high	Critical

Mapping the different factors into the business model mapping template displayed in the table 8 is done in practice by selecting one or two different needed levels of supplier integration or interface leading to a preferred relationship model.

Whereas the second step studied the relationship model, the third step is all about economic model, which helps to discover features that will lead you to the most suitable economic model for the situation. An economic model decides which is the most appropriate way to govern the economics of the relationship, which in practice, for example mean how the payment will be done towards a supplier. There are three different economic models: transactional model, output-based model and outcome-based models. Transactional economic model is the most used economic model due to its ability to be measured e.g., per mile, per hour, per kilogram or per unit. The payable price is easily determined by multiplying the number or transactions with the price per transaction. However, transactional economic model is not the best option with more complicated spend categories, which need a supplier to get into value-added, asset-specific or moments of innovation. Transactional economic model can be seen limited in this aspect and organizations use to favor economic models which are producing business results over a result, which just creates payment for effort. (Kling et al. 2015, 197,199)

Output-based models tie the payment towards suppliers into the results of pre-described measures, for example process-based service level agreements. On the other hand, performance-based economic models are often used with performance-based agreements where a purchaser is able to work out a predefined efficiency or targets to achieve. An outcome-based economic model can be seen as more developed compared to an output-based economic model since the supplier payment is usually tied to cross-boundary business outcomes agreed by the both parties and not just to settle with process or practically concentrated performance outputs. In order to obtain real business outcomes, suppliers and purchasing organizations are required to cooperate in an exceedingly organized and

coproducing manner. This way risks and rewards are being attained when business outcomes occur. (Kling et al. 2015, 197,199)

The fourth step of determining the best sourcing business model consists using the information obtained from the previous steps two and three by checking both of the relationship and the economic model. The sourcing business model matrix comes into play at this point, which is being represented in table 9.

Table 9: Sourcing Business Model Matrix (Kling et al. 2015, 205)

		RELATIONSHIP / CONTRACT MODEL		
		TRANSACTIONAL CONTRACT (MARKET)	RELATIONAL CONTRACT (HYBRID)	INVESTMENT (VERTICAL INTEGRATION / HIERARCHY)
ECONOMIC MODEL	OUTCOME BASED Economics tied to boundary spanning / business outcomes	Mismatch - Not a viable strategy N/A	Vested (E - 5,6)	Equity Partnership Vested shared services (F - 5,6)
	OUTPUT BASED PERFORMANCE BASED / MANAGED SERVICES Economics tied to supplier output	Mismatch - Not a viable strategy N/A	Performance based (Managed services) Agreement (D - 4)	Equity partnership Shared services (Performance based shared services) (F-4)
	TRANSACTION BASED Economics tied to activities (for example per hour, per kilogram)	Basic provider Approved provider (A,B - 1,2,3)	Preferred provider (C - 1,2,3)	Equity partnerships Transaction based Shared services (F - 1,2,3)

The Sourcing Business Model Matrix portrayed in the table 9 is a tool, in which you place the answers from previous steps two and three. For instance, if the major quantity of answers would lean towards into the C column regarding the relationship model, the most suitable contracting model would be relational. If the previous answers were in columns 2 or 3, the recommended economic model would be transactional. Regarding the Sourcing Business Model, the most suitable option would be “preferred provider”.

3.6 Traditional outsourcing

The traditional reason behind outsourcing all over within different industries have been recognized as the requirement to decrease operating costs and close second as securing cheaper work force (Vitasek, Ledyard & Manrodt 2013, 22; Deloitte Consulting LLP 2012). Alternative motives for outsourcing are as follows (Vitasek et al. 2013, 23; Deloitte Consulting 2008):

- To increase quality of a product or service
- To alleviate a shortage of labor
- To react better to constraints of capacity
- To utilize outsourcing as a starting point for a significant transformation which cannot be done internally
- To allow a company to direct its attention on its core competencies
- To supply top-notch services or improvement
- To do cost restructuring or remodel fixed cost to variable costs
- To speed up the time to get to market by development acceleration or providing extra capacity to production
- The desire to transfer some risks to the service provider

Statistics show that large quantity (39%) of companies reported they had discontinued at least one large-scale outsourcing contract and were forced to assign it to another supplier (Deloitte Consulting 2008). It is estimated that at least 25 percent of outsourcing deals end up failing or functioning miserably (Ditmore 2021). Two biggest reasons why outsourcing projects tend to end badly are unclear expectations and not agreeing interests over long period of time (Vitasek et al. 2013, 23).

3.7 Vested outsourcing

Vested outsourcing, also sometimes simply referred as Vested, is a model, which focuses on crafting relationships. In these relationships firms and service providers will assume the role of partners aiding each other to success, forging a pure win-win solution (Vitasek et al. 2013, 42). Selected sourcing business type shows important role in outsourcing and thus it is needed to recognize the most used traditional transaction-based, outcome-based and investment-based models as well as their new competitor vested business model (Vitasek et al. 2013, 43).

Transaction-based business model is being used by companies for their commercial agreements when the “buy” decision has been made and traditionally service providers are

being kept at arm's length. Over time three different types of transaction-based sourcing relations have been developed to answer how to cope with complicated business needs regarding simple transaction providers, approved providers and preferred providers. Outcome-Based business model pays attention to motivating service provider to achieve the wanted group of business results or for achieving acknowledged key point indicators. Whenever transaction-based or outcome-based business model cannot provide successful solution for complicated business environment, the answer has usually been investment-based model. In investment-based a company transforms into a single balance sheet individual, practically a merged in-source solution. This enables equity partners to assume various legal forms, from procuring a service provider, to changing into a subsidiary, to equity-sharing mutual investments. Equity-based partnerships are created due to a firm's inability to find project-critical goods or services. Downside to these partnerships are their requirement of strategic integration of infrastructure and significant investments. (Vitasek et al. 2013, 43-44)

Vested outsourcing can be rudely simplified into five rules and by utilizing these rules in a business environment, the rules will generate outsourcing relationship improvement, boosted innovation and increased effectiveness (Vitasek et al. 2013, 42).

Vitasek et al. (2013, 189-194) list the following rules and subtasks a for successful vested outsourcing, which are being represented in table 10:

Table 10: Rules and sub-tasks for vested outsourcing (Vitasek et al. 2013, 189-194)

Rules for vested outsourcing	Laying the foundation	Understand the business	Align interests	Establish contract	Manage performance
Sub-tasks	Study the market for prospecting suppliers and services	Scope of the effort	Analysis of risks	Completed: Business model, shared vision / state of intent, statement of objectives / workload allocation, explicitly defined and quantifiable wanted outcomes, performance management plan	Management of relationship structure
	Recognize the most important cost drivers	Quantitative performance baseline	Best value assessment	Pricing model with motivation to develop the business	Formalized cadence
	Recognize benchmark costs for commodity products	Qualitative performance baseline	Allocation of workload	Length of a contract	Performance management plan / quality assurance plan
	Recognize benchmark work costs for commodity services	Spend analysis	Requirement roadmap	Exit management plan	Repeated improvement program
		Desired outcomes	Statement of objectives / performance work statement	Transition plan	Transformation management plan
		High-level business case			Change management process

The different rules and sub-tasks for vested outsourcing are shown in the table 10. With these vested outsourcing methods, it is possible to reconsider a supplier relationship and utilize win-win theory from theory to practice.

4 RESEARCH PROCESS

The theoretical background's function is to be compared and utilized to the case company's setting. Elements of supply strategy and category management were discovered in the theoretical section whereas the empirical seeks answers how to apply these elements to the case firm.

4.1 Collection of data and analysis

The collected information can be divided into two different sources; internal theme interviews which lead to qualitive information and also to quantitative cost information, which was retrieved from the case company's ERP system. Cost data from the ERP system was supplied by a representative of the case company since direct access to the ERP system would have had too many technical and security related difficulties. This study project is mainly created by using qualitive study method but the importance of analyzing quantitative data should not be belittled in any way.

The interviews were half-structured theme interviews in which, chosen key persons from the organization were discussing about preselected topics and questions. The interviewed persons were able to give their comments freely about the interview topics in the last section of the questionnaire in which they were given complete freedom to comment the main topics of this study. Since the case company belongs to a SME-class regarding its size, four key personnel participated in the study in form of an interview. The participants were: The unit director, the purchaser, the quality manager and the production planner. The interview questions can be found from the appendixes. The interviews were conducted in person while being recorded for referencing purposes during the study process.

A spend analysis was conducted from the retrieved cost data in order to determine the most frequently purchased products and services to understand the current purchasing categories and how they are divided within the supplier base.

4.2 The case company

The case company designs and manufactures different solutions in the field of mechanics, mainly in the field of sheet metal. The case company is proud of its high-quality products which are being produced domestically in Finland whereas its clientele is spread far and wide from local heavy-duty industries such as wood industry to foreign customers representing various technical industries. Provided services include for example project management from start to end, sub-contracted manufacturing and supplied set of machinery. Other available services are R&D, industrial designing, usability planning, modeling and manufacturing.

The company is categorized as a small sized enterprise due to its rather small number of paid employees, annual turnover and balance sheet. Based on Tilastokeskus (2021) a company is a small size enterprise, if it meets all the following criteria: Has less than 50 paid employees, annual turnover or balance sheet do not exceed 10 million euros and fulfills the requirement of being an independent enterprise (less than 25% of equity or voting stock of an enterprise can be owned by an entity, which cannot be recognized as an SME.

Production process has been streamlined in order to follow lean manufacturing processes trying to eliminate activities which don’t add value to the product or service in any way. The case company employees have been trained to follow procedures of 5S lean principle in their respective work tasks and in practice this shows, for example as cleaned and well-maintained work stations. Other indications of using lean principles are to avoid unnecessary movement between process phases and the floor plan of the factory has been modified in a way, that the next phase in the process is next to the previous one, or at least in close proximity, to enable smooth transaction between one manufacturing phase to another. Small and compact workforce gives ability to communicate effectively between workers and management enabling fast problem-solving, which is a clear advantage compared to large-scale corporations.

4.3 The validity and reliability

The case company was studied through a case study, in which information was collected with spend data and interviews. Hirsjärvi et al. (2007, 130-131) state that a case study’s

fundamental aim is to accumulate information about an exact topic and its connection with its surroundings with versatile methods as much as possible. The research was trying to find out what kind of supply strategy exists within the case company, what is the most important category and what kind of supply strategy could be created for it. The spend data collected from the ERP-system acted as the primary data collection practice, which was supported by the interviews. The spend data gave lots of insight regarding purchasing behavior but it would have been difficult to achieve information from the state of business and supply strategy in the firm without conducted interviews. On the other hand, interviews have a risk of producing contradictory or biased results since the interviewees might not be willing to give fully truthful answers if it gives negative picture of the company. In this study the interviewed persons gave criticisms directly and professionally towards matters needing development actions. Therefore, the gathered data should be viable and help creating a supply strategy for the case company's most important purchasing category.

5 EMPIRICAL FINDINGS

The case company's situation will be reflected to the previously presented theoretical background. As a company relying heavily on different raw materials such as sheet metal, purchasing plays significant role in the organization ensuring that production doesn't suffer from the lack of materials. Usually, one would assume that a company's overall strategy would be towards creating new products and searching fresh market opportunities. During the interviews the case company was in a transition period, since it had recently been under corporate acquisition. This transition period could be seen in a form of standing still in many forms: There were overall uncertainty, no investments were made and overall business strategy was not known or at least it was not clear.

5.1 Current situation of supply strategy

Based on the interviews the overall business strategy was ambiguous, mostly waiting for the new strategic direction from the new owner. The production manager emphasized the importance of the current client base saying that keeping good care of the existing customers the case company is able to survive until further commands will be received. Even though the case company did not have a clear devised strategy, their strategy formed through their activities and functions. All the other interviewees agreed that the company did not have clear strategy to which they could aligned their own objectives and tasks. From a traditional point of view supply strategy follows overall strategy in order to fulfill the set targets. More modern view understands that strategy does not only flow from up to down but also from bottom to upwards in a hierarchical sense. The case company shows an example of a situation where it has no given overall business strategy thus leaving supply strategy also lacking vital decisions.

According to Mintzberg (1994) a strategy can be deliberate. Strategy can realize the specific intentions of senior management, for example, to attack and conquer a new market. However, strategy has another side: it can also be emergent, meaning that a convergent pattern has formed among the different actions taken by the organization one at a time. (Mitzberg 1994) This had just happened in the case company since the in the absence of corporate level guidance the overall strategy had set its course on keeping the overall

situation stable: Current customers were served at a high level to maintain the existing customer relationships, no big investments were made towards production nor product development, somewhat R&D projects were not started and no new employees were recruited. This was the strategy formed by the necessity of keeping the current situation steady until the new owner would give new strategy to follow on.

5.2 Current situation of category management

The company manages to come by with one purchaser, who manages practically everything purchasing and sourcing topics inside the company with the help of the production manager. Therefore, the main focus is to ensuring the production never runs without material or tools leaving strategic level decisions more to the background. According to the interview of the purchaser, is normally divided by the type of need. Normally the need is based on projects or basic production. When it comes to projects, the impulse comes from a salesman or a production engineer leading to inviting tenders for the materials, mostly for sheet metal. Basic production works based on the critical quantity limits set in an MRP-program indicating possible lack of items to the purchaser. Also, the needs of production are also viewed with the punching machine operators. Therefore, purchases are being issued based on warehouse driven manufacturing (make to order production strategy).

Category planning level is non-existent or low-level focusing only on steel sheet plates. Since there is only one purchaser, her limited work resources are pointed towards preventing any shortages in production leaving category planning type of strategic level sourcing activities unattended. Since there are only five critical level suppliers and maybe 15 somewhat important suppliers combined very scarce resources in sourcing, category planning has not been deemed worthwhile method of governing suppliers or raw material purchases.

5.2.1 Decision making in procurement

Purchasing plays mainly supporting role ensuring that the production does not suffer any kind of delays or problems regarding material availability. Due to scarce resources in purchasing department a single purchaser handles all purchasing related matters. A single purchaser handling on her own unfortunately means that there is very little available time, if

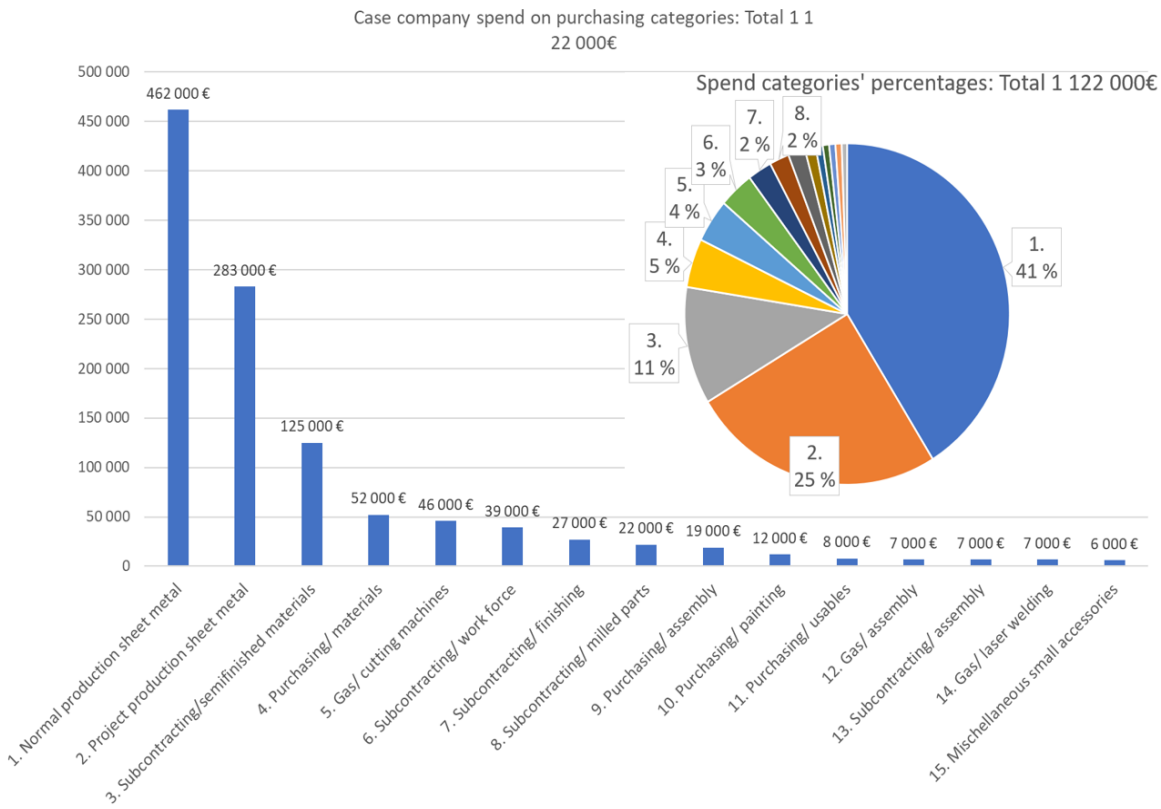
any, to focus on supplier relationship improvement or analyzing situation on supplier markets while priority number one is making sure that normal production goes on without problems. Therefore, it could be said that the purchaser works automatically based on the impulses coming from the manufacturing planning, cutting machine operators and other similar sources within company.

Purchases are usually directed towards local and known suppliers in order to avoid the searching and validation process for a new supplier. However, if a new supplier is needed, it usually also requires acceptance from the production department, so that the new supplier is able to fulfill the requirements set from the production meaning that small scale decisions can be made independently but more crucial actions towards suppliers are being done after negotiation with other departments. Purchasing department would need more resources in order to allocate more work hours towards strategic sourcing topics in order to create development and not getting stagnated with a narrow-field vision of operational purchasing. If the purchasing department would be given more resources, its heightened capability to search and generate more savings would benefit the case company.

5.2.2. Spend analysis

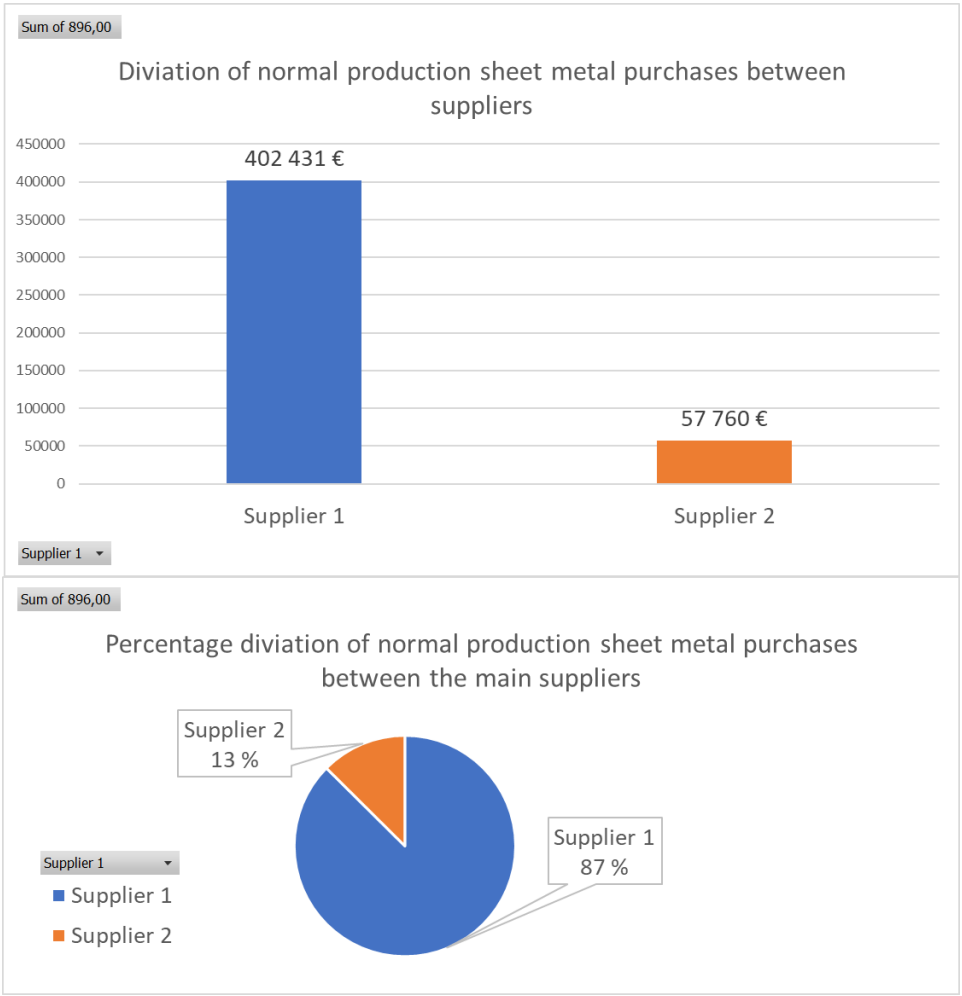
Studying spend revealed that the three biggest single categories are sheet metals needed for normal production, sheet metals for projects and subcontracted & semifinished materials. These three categories are around 77% of the total annual spend and sheet metal purchases for normal production is around 41 % by itself. Spend categories are being displayed in the table 11.

Table 11: Case company spend on purchasing categories



The table 11 indicates that the sheet metal purchases for the normal production is clearly the biggest single purchasing category with its 462 000 euros being equivalent to approximately 41 percent of the total spend. Therefore, this largest single sourcing category deserves to be examined more closely. Closer inspection gave information that this single largest purchasing category consisted sheet metals is being purchased only from two different suppliers and the supplier number 1 is significantly more preferred supplier than supplier number 2. The table 12 shows that approximately 87% is being purchased from a supplier 1 and only 13 % from supplier 2.

Table 12: Spend divination between supplier 1 and 2



Since the sheet metal required for normal production is the biggest single purchasing category and inside it, the supplier 1 is being so significantly more preferred supplier. According to the spend analysis the sheet metal purchases for normal production would be ideal category to focus on but it shouldn't be the only deciding factor on category prioritization.

5.2.3 Category prioritization

Category prioritization decision is a conclusion achieved by identifying possibilities, making spend analysis, recognizing needs and assessing these different factors as whole. Usually, the question would be what are the critical and strategic categories within a case company. In this study the category prioritization decision seems to prove to be rather straightforward due to the size of the case company and its high-level demand of sheet metal for its

production. The spend analysis, the interviews and production numbers in unison indicate that the normal sheet metal production is the bread and butter of this case company and thus the sheet metal can be seen as large numbers in the annual spend making it the most significant single category and that is why it deserves to be prioritized over other categories.

A couple of crucial factors to be taken into account when determining prioritization of a purchase category are risk identification and status of supplier field. The data and the interviews show that the case company utilizes mainly one supplier with sheet metal purchases when there would be numerous other suppliers available as well. From the risk management point of view this can be seen as a major liability to the case company to function with single sourcing strategy due to possible delays, price level changes or delivery problems with the primary supplier.

5.2.4 Identification of possibilities

In order to identify various possibilities, it is recommended that cross-functional discussions would be held. Although the collected data and the interviews support this view of focusing on sheet metal purchases, having mutual discussion throughout the organization would give more insight to identify the development possibilities inside this specific category as well as among others. Without combining the technical and commercial competence, it is hard to achieve the most cost-effective solution. Also, it is important to study what kind of role the procurement has and what is the current situation with the supplier relationship inside the studied categories. This information combined enables higher chances in achieving cost savings and other overall development within the categories.

From the case company's point of view, it is crucial to identify different methods to create cost savings in procurement. Various pinpointed options in order to create cost savings can be listed as: Negotiate and apply a framework agreement, develop and deepen the existing supplier relationships in the strategic categories and search alternative international or domestic suppliers to create competition

As mentioned before, identification of possibilities needs a lot of effort in a form of investigation since there are numerous different factors to be considered e.g., current market situation and external stakeholders such as suppliers.

5.2.5 The framework agreements

Framework agreements, which will be referred as FWAs in the following text, are meant for a situation, in which both of the two parties admit there are still having some parts of a contract without mutual contractual approval but then again, have common understanding of other contractual matter to a degree that proceeding with a business relationship is possible. The goal of utilizing FWA is being able to procure the chosen categories more effectively, for example FWA can be used to manage its suppliers during longer time periods during which the company would try to accomplish receiving coming advantages within the chosen categories:

- Creating development in productivity generated by saved time, when a purchaser / a sourcing manager doesn't have to repeat the standard tendering process with regular purchases
- The FWA supplier is compliant with a company's code of conduct and other requirements regarding safety, environmental topics and quality
- FWA gives ability to govern and improve the constant evolution of the suppliers and supplier relationships
- Possibility to utilize e-procurement systems in order to extend performance of procurement process

In the case company's situation negotiating FWA could prove to be useful tool since FWA has proved itself while the purchasing volumes are being focused to a single supplier. The nature of FWA enables very large variety of different matters to be included into the agreement and it can be modified based on the case- and product specific needs.

6 RESULTS AND CONCLUSIONS

The intent of this study was to develop a sourcing strategy by utilizing category management. Research studies relating to supply strategies and category management played important role in providing theoretical backbone to which the empiric discoveries were compared to. The case company's current status regarding supply strategy and overall purchasing activities were studied with the help of half structured survey and interviews with selected key personnel as well as spend data received from the case company's ERP-system. The case company's small size and limited resources especially within sourcing led to creating simplistic and affordable solutions.

6.1. Research questions answered

The study tries to find answers to the set sub-questions in order to compile proper solution for the main research question. The sub-questions and the main research question are answered in this order in the following text.

What are the ways to identify different categories?

In this study the method used to identify various categories was spend-analysis, which revealed clearly different categories within the annual spend. Spend-analysis was done from the spend-data and three biggest categories discovered are sheet metal purchases for normal production, sheet metal purchases for projects and subcontracting and semifinished materials. These three categories form approximately 77% of the case company's annual spend.

What do individual categories include?

The largest spend category consists practically only sheet metal needed for heavy duty punching and laser machines to produce needed shapes and sizes into the metal sheet. The second largest category is made of different sheet metals and components needed for the project specific production. Practical examples are sheet metal, fireproof plates, insulation

and heatsink. The third biggest category is subcontracting and semifinished materials, which means that some parts or services are not worth to produce the company itself but rather to purchase them from some other firm having specialized tools and skillset to manage the task in a better and or cheaper manner. Examples for these kinds of products or services are special paintings, surface treatments like acidification and chroming or printing information, such as company logo or warning texts, on the products surfaces.

What are the right categories to focus on?

The largest categories usually provide the highest cost saving potential due to their size. It is possible to create tangible savings with rather small actions when the volume and monetary value of the category is significant. Therefore, in this study the main focus was on the biggest spend category consisting sheet metal purchases.

The main research question was set as follows:

How category management can be utilized with the most effective manner creating supply strategy for the case company?

In this study category management was utilized by using spend analysis to determine and identify the different categories from the spend. Spend analysis revealed that there are three key spend categories worth studying more. The most consequential spend category is the sheet metal purchases for the normal production and thus it would need a proper sourcing strategy in order to achieve cost savings.

6.2. Solution suggestions

The lack of given overall business strategy put the case company in a situation, that it developed a strategy from its needs and used practices. This phenomenon was according to Mintzberg's theory about strategy being having to different sides: Considered, polished and intentional but as well as emergent, random and born out of pattern of taken actions by the organization.

Category management focuses on serving customers regardless if they are internal or external customers. Even though category management was not adopted in the case company, the sourcing and purchasing activities were heavily focused on serving the normal production and its needs. According to O'Brien the internal functions and stakeholder can rebel against changes, especially if they are not properly informed but if internal stakeholders are included into decision making, they change into part of solution and thus much more accept permissive towards change and decisions. The purchaser of the case company is in constant discussion with the manufacturing department about their needs and all the major purchasing or sourcing decisions is being discussed together in order to reach most beneficial outcome.

O'Brien and Huuhka are making a statement of the importance of establishing decision on data and on verified facts in category management. Data collection, being very important part of category management process, revealed highly important information about how the spend was being directed towards suppliers, what was being bought and what were recognized categories based on the purchased services or products. Also, the data received from the interviews revealed things which the data received from the ERP-system couldn't have told.

Based on the collected results, this study presents three different solutions as a potential supply strategy for the most important purchasing category. Since the significant amount of the sheet metal purchases are being done from a single supplier, the first option would be deepening the collaboration with this supplier trying to create some form of collaborative relationship with the supplier, for example in some form of partnership.

The second solution would be, in case the collaborative relationship couldn't work for different reasons e.g., the supplier would not be a suitable match for a partnership, traditional arm's length relationship with suppliers. In practice the case company would be sending its request for quotations to different other firms standing in equal footing compared to the case company. This would decrease the supply risk sourcing from different suppliers but the downsides are that purchasing volumes from single supplier would be small resulting higher purchasing costs and increased work load in order to source suitable suppliers.

Third possible option follows the current situation in which the way of working continues with the one major supplier as single sourcing. In order to be able to respond different kinds

of disturbances in the supply chain coming from the chosen primary supplier, from which the significant majority of sheet metal plates are being currently purchased, there should be a secondary supplier ready to remedy the situation if the primary supplier is experiencing problem. One way to implement this in practice would be dividing annual spend of sheet metal purchases between the primary and secondary supplier, so that the primary supplier would get 80 % of the spend and the secondary would get the rest. This allows the case company to negotiate more pleasant prices with the primary supplier whereas the more increased price paid to the second supplier due to smaller volume would be seen as an investment into lowering supply risk. This action would enable the case company to secure its sheet metal deliveries since it would have a secondary sourcing route fully available to it.

6.3 Further research suggestions

This study focused on assessing what is the current situation of the case company's sourcing and purchasing activities in order to find recommendations what would be the most suitable strategies to govern the most important purchasing category giving three different strategy options to continue. The next step would be doing deeper analyzing phase of the risks and rewards between these three options and when the decision would be made, then the utilization phase studying how the sourcing strategy would be taken into practice within the case company.

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APPENDIXES

Appendix 1: Interview frame

1) Company information
    a) Turn over
    b) Number of employees
    c) System used for supply management
    d) Level of competition
    e) Information about competition

2) Utilization of supply management in the company
    a) How the purchasing process is conducted?
    b) What is being purchased?
    c) What launches the need for purchases – demand or supply?

3) Category management
    a) Explain category management in your own words
    b) What kind of advantages can be obtained by category management?
    c) What do you think are the main categories?
    d) What would be the criteria for different categories?
    e) Barriers to driving change: What could be problems stopping the usage of category management?
        i) Resistance to change
        ii) Lack of involvement

iii) Lack of executive support

iv) No felt need

v) Inadequate resources

vi) Something else

f) What are the most important categories (priorities) deserving the resources?

g) Do you see category management bringing value to your company's procurement?

4) Company's overall strategy

a) Describe the main points of your company's overall strategy

b) How is supply management included in the strategy?

c) How is company's strategy shaping supply strategy?

d) Where the company's overall strategy is possible heading in the future?

5) Supply strategy

a) Make or buy-decision (who does, item/category-based criteria & reasoning)

b) Partnerships (Is the company being in partnership with another company?)

c) Has purchasing been centralized or decentralized to a specific department/person? What good can be seen coming from centralized purchasing?

d) How large is your supplier base?

i) First tier-suppliers

ii) Second tier

e) Describe your suppliers (local vs global, criteria for choosing)

f) How supply strategy shows in governing suppliers?

6) Portfolio model?

   a) How are the items classified?

   b) Has portfolio model or something similar been in use?

7) Free word – anything to add?

Appendix 2: Completed business model map (adapted from Kling et al. 2015, 197-198)

Attributes to determine best relationship model	**Transactional contract**			**Relational contract**		**Investment**
	A	B	C	D	E	F
Dependency						
Overall cost to switch suppliers	Low	Low	Medium	Medium to High	Medium to High	High
Physical asset specificity (location, machinery, processes)	Low	Low	Medium	Medium to High	Medium to High	High
Skill level needed for predominant personnel	Unsikilled	Semiskilled	Skilled	Professional	Professional	Expert
Level of supplier integration / interface required (systems, support process)	None	Low	Medium	High	Very High	Critical
Overall availability of service / product in marketplace	Widely available	Widely available	Wide to Moderate Availability	Limited number of capable suppliers	Limited number of capable suppliers	Scarvely available
Availability of human resources	High	High	Medium	Low	Low	Low
Availability of required technology	Universal	Limited	Restricted	Restricted to Scarce	Scarce	Unique
Access to buyer's critical systems and processes	None	Low	Medium	High	Very High	Critical
Strategic Impact / Core competency for Buyer	No	No	No	Maybe	Maybe	Yes
Degree of Business Risk						
Profit impact (Volume purchased, % of total purchased cost, impact on business growth)	None	Low	Medium	High	Very High	Critical
Service failure impact on end customer / brand experience	None	Low	Medium	High	Very High	Critical
Regulatory compliance policy	Meet standard	Meet standard	Meet standard or Higher	Meet standard or Higher	Meet standard or Higher	Meet standard or Higher
Uncertainty of demand	N/A	Manage unanticipated demand spikes with multiple sources	Provider response to unanticipated volume spikes limited	Contractual ability for supplier to respond to spikes	Contractual flexibility for supplier and client to respond to spikes to optimize the business	Capacity is set based on captive assets plus using market if not asset specific