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ABSTRACT

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Abstract

This research was conducted as an assignment for a Finnish telecommunication company, Telia Finland Oyj.

There has been a lot of research done around the theme of how to manage the procurement. However, the literature and managers' attention highly concentrates on capturing the value from the most important purchases, leaving a void and unawareness of what to do with the smaller ones, i.e. how to manage the tail spend. As a concept, tail spend refers to approximately the smallest 20% of the total spend that is divided between the majority of the suppliers. Even if a compliant procurement process existed in a company, it might be excessively heavy on tail purchases, leading easily to a chaotic environment that is driven by maverick buying.

The literature recognizes maverick buying as a driver to spend fragmentation but also a consequence of it and uncontrolled tail spend procurement. Other similar factors were sought from the characteristics of indirect procurement, service procurement, and their specification's impact on the capabilities of controlling the tail spend and managing it efficiently. The factors were then evaluated through procurement's strategic hierarchy framework to derive a basis for a tactical tool to capture the value and minimize the waste from the tail.

Results showed that not all tail spend is similar thus should not be managed similarly. Within the tail, the long tail, uncontrolled and recently chancing spend, was identified to be the key area to be involved to improve procurement's performance. Long tail was also identified as an area where waste accumulates due to a rigid process and un-assigned responsibility, and the value could be better captured by a faster or more systematic process. Therefore, a new process was implemented to enable reactive value capturing accordingly, and proactively, to turn long tail into a short tail and eliminate the problem.

Key words	Strategic procurement, tactical procurement, long tail, tail spend,

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Tiivistelmä

Tämä opinnäytetyö suoritettiin toimeksiantona Suomalaiselle telekommunikaatioyritykselle, Telia Finland Oyj:lle.

Hankinnan johtamisesta on tehty paljon tutkimusta. Kuitenkin tutkimuksessa ja hankinnan ammattilaisten työssä huomio keskittyy vahvasti kaikkein tärkeimpiin hankintoihin, mikä jättää epäselväksi, miten pieniä hankintoja kannattaisi johtaa. Vaikka ostajayrityksellä olisi selkeä hankintaprosessi, jota noudattaa, se saattaa olla suunniteltu suuremmille hankinnoille, ja näin ollen aivan liian raskas pienille. Tämän takia pienten hankintojen johtaminen voi olla hyvinkin puutteellista ja hankintaprosessin ohitus yleistä.

Kirjallisuudessa hankintaprosessin ohitus tunnistetaan sekä spendin pirstaloitumisen syynä, että seurauksena siitä, ettei spendiä ole systemaattisesti johdettu. Muita vastaavia tekijöitä käsiteltiin epäsuoran ja palveluhankinnan erityispiirteistä, sekä spesifikaation vaikutuksesta kyvykkyyksiin kontrolloida pieniä hankintoja ja johtaa niitä tehokkaasti. Lisäksi kyseiset tekijät arvioitiin strategisen hankinnan näkökulmasta, jotta perusta taktiselle työkalulle pienten hankintojen johtamiselle voitiin määrittää.

Tutkimus osoitti, etteivät kaikki pienet hankinnat ole samanlaisia, eikä niitä kuulu johtaa samalla tavalla. Pienten hankintojen joukosta tunnistettiin niin sanottu long tail, kontrolloimaton ja jatkuvasti tarpeiltaan muuttuva hankinta, jonka johtamisessa ongelmat kulminoituvat. Long tail -hankinnan prosessin osalta jäykkä prosessi ja puuttuva vastuu osoittautuivat suurimmiksi hukan lähteiksi, ja prosessista voitaisiin saada arvoa nopeudella ja systemaattisella johtamisella. Tämän vuoksi uusi johtamistapa implementoitiin, ja uudessa prosessissa arvo haetaan prosessoimalla hankintoja systemaattisella tavalla sekä proaktiivisesti vähentämällä long tail -hankintojen määrää tulevaisuudessa.

Avainsanat	Strateginen hankinta, taktinen hankinta, pienet hankinnat, long tail

UNIVERSITY OF TURKU
Turku School of Economics

HOW TO MANAGE THE LONG TAIL OF PROCUREMENT

Master's Thesis
in Operations and Supply Chain Management

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The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

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1 INTRODUCTION

1.1 Motivation for the study

The development of procurement has gotten far since it was seen as a transaction-process function of a company. Strategic procurement became common during the 1990s, majorly basing on Kraljic's matrix, whilst the word "innovation" was not mentioned once in Kraljic's article. (Hughes & Ertel 2016.) In 2020, strategic procurement can be a considerable driver of competitive advantage for the companies that do it right (Jayaram & Curkovic 2018), and having access to suppliers' innovations is one of the megatrends governing the development of procurement (Hoffman et al. 2019).

Meanwhile, procurement gets increasingly strategic, and procurement managers' attention will be drawn to the top 20% of the suppliers which cover approximately 80% of the spend. The flipside of this is what is referred to as the tail spend of procurement, which consists of the remaining 20% of the total spend. (Dadswell 2013; Distedorf et al. 2014; Gartner 2019.) The group consists of numerous suppliers that are hard to get one's hands around with and to manage properly. Furthermore, since the spend per supplier is rather low, whatever benefits there is to be achieved through negotiations with these suppliers, it is not probably worth the time and effort required for the negotiations. (Kacik 2018.)

Apart from being a complex group to manage, there is a clear gap in the literature in procedures and strategies for long tail management, since the literature concentrates on managing the spend that is used directly to the end-product or end-service of the buying company, also known as direct spend. (Cox et al. 2005b; Pandit & Marmanis 2008; Jayaram & Curkovic 2018). However, the equal sign cannot be automatically drawn between indirect purchasing and long tail, because one describes the good's or service's connection to the end-product and the other the fragmentation of the spend amongst the suppliers. Therefore, no mechanism would automatically place directly purchased goods or services to the head-end of the procurement.

Even though there has not been much investigation on the long tail, the group is an important area for investigation for three reasons. First, procurement can account up for 80% of the total expenditure of a company (van Weele 2005), 20% of that is a significant cost center for any company. Second, because the category lacks attention, there is allegedly a lot of waste and spend leakages accumulated there and a huge savings potential.

For example, maverick buying, off-contract buying that lengthens the tail is evaluated to increase procurement's costs by 20% (Cox et al. 2005a; Angeles & Nath 2007; Karjalainen et al. 2009). However, it is essential to notice that company spend does not equal procurement's cost, but those are two different costs within a company.

Thirdly, as sustainability becomes more and more important, procurement needs to extend sustainability-compliance requirements increasingly further in the supply chain. (Streimikiene et al. 2016; Shafiq et al. 2017). Meanwhile, the procurement's long tail consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013), thus a non-controlled long tail exposes the company to a relevant image risk. (Hingorani 2010).

Moreover, since all the spend should not be managed similarly (Cox et al. 2005b), it is reasonable to investigate, how the tail spend should be managed. It is also essential to separate the concepts of "tail spend" and "long tail" because not even all small spend should be managed similarly (Bardell 2011). In this thesis, tail spend refers to small spend, 20% of the spend that is divided between 80% of the suppliers. Bardell (2011) divides tail spend into three sub-categories:

- Short tail
- Steady tail
- Long tail.

According to Bardell (2011), short tail consists of small spend that is contracted and it can be identified and classified, for example, office supplies. Steady tail is non-controlled spend and it is usually very hard to do anything about it, for example, meeting provisions. The long tail contains non-standard needs that keep on changing and the spend is relatively small to justify the attention it would need from procurement's part, for example, small creative services. (Bardell 2011; Dadswell 2013; Disteldorf et al. 2014). This thesis concentrates especially in long tail management.

Another concept that needs to be highlighted is that, in theory chapters, procurement division and activity are discussed as procurement, whereas the same division is referred with sourcing from chapter 5 onwards. The concepts differ because, in theory, procurement refers to a thorough activity, that begins with sourcing (van Weele 2005). Therefore, procurement describes the activity better than sourcing. However, in the principal company, the procurement is managed through a department called "sourcing", and to avoid misunderstanding, the procurement division is referred as sourcing in results.

1.2 Goals, research question, and limitations

The goal of this thesis is to find out how the tail spend should be managed. Tail spend eventually originates to fragmentation of spend, because if the spend was divided equally amongst every supplier or everything would be made inhouse, there would not be a problem of tail spend. Therefore, the literature concentrates on what kinds of problems arise from having a fragmented supplier base and from managing many small purchases instead of consolidating spend.

In addition to investigating what problems does fragmented spend causes and why those problems should be controlled, the theory is also built around the beginning of the problem; what causes the fragmentation of the spend. The root cause is approached from two different angles in literature. First, if a purchase is made bypassing the purchasing process and by buying from a non-approved supplier, the multiplicative effect of such behavior reflects as an increased number of suppliers (Cox et al. 2005a). Second, even if the purchasing process was followed and the purchase was compliant, the need itself can be excessively specified, and the multiplicative effect of that is that a large number of needs can be bundled for fewer suppliers (Khalaf et al. 2011).

To be able to manage the entity of tail spend, literature also approaches the entity by investigating how the entity can be classified. Also, the means, by which it could be perceived, are approached to find out what is the nature of the tail spend that is to be managed.

This thesis is an assignment for a Finnish telecommunication operator. In the principal company, the procurement function is divided into categories, and this thesis concentrates on a procurement category called professional services. The category consists of a wide array of different indirect services from legal services to resource consultants and from training to recruitment services. In addition, small indirect services that lack clear assignment to another category fall under the category spend, making the arrangement challenging for complete spend consolidation. To focus on finding the right managerial applications to tail spend management in this particular category, natures of service procurement and indirect spend are approached in literature.

Furthermore, since the scope of tail spend is a part of a larger entity, whose management is guided by a strategy, the theory of strategic procurement is approached in literature. Procurement strategy in the literature of this thesis concentrates on the specific characteristics of relatively small purchases. However, simultaneously strategic guidelines for

tail spend management are approached in literature from different strategic hierarchies: from overall company strategy through procurement strategy and specific procurement category strategy until the levers of improving the category's performance and supplier-specific management guidelines. The hierarchical approach is considered to perceive how much efficient tail spend management should align with strategies on the upper level and from which parts it should differ.

The last approached dimension to built up a theoretical framework to tail spend management is the recent development in procurement management literature to find out what are the latest trends governing strategic procurement. Combined, the literature aims to give a thorough theoretical framework to give guidelines to research to answer the research question:

RQ: *How the tail spend should be managed?*

Since this thesis is an assignment, there are clear limitations to the generalization of the results. First, the strategic goals of procurement might vary between companies and industries, and the solution is built based on specific strategic goals. Second, the principal company's procurement has a clear tactical framework for procurement, and the results are aligned with that tactical framework. Third, the operational purchasing environment is assessed and involved based on how it is at the time of the research. Operationally the professional services -category only contains indirect services, thus their characteristics are emphasized in the solution.

All of the mentioned factors need to be evaluated if the solution is wanted to be repeated in other companies or industries. However, the goal is to provide a somewhat generalizable strategy or tactics for tail spend management since the purpose is to scale the strategy beyond a specific sourcing category in the principal company as well.

1.3 Structure of the thesis

Introduction sheds light on the case in general and provides a guideline of what will follow. The second chapter discusses the theory behind tail spend, how is it expressed in procurement, and two main factors causing the spend fragmentation: maverick buying

and over specification. The third chapter concentrates on spend classification and strategic and tactical management of tail spend procurement. The third chapter also presents a framework to manage the tail spend, and the framework is assessed based on the theory in the second and third chapters.

The fourth chapter goes through the methodology of this thesis and how the framework will be investigated in the principal company's context. The fifth chapter presents the findings from the research and based on them, the presented way to develop a tail spend strategy. The sixth chapter answers the research question, concludes the research, and discusses how the presented solution would work in other contexts beyond the one investigated.

2 LONG TAIL IN PROCUREMENT

The second chapter has three main points. Firstly, the concept of long tail is introduced and explained, why it is a problematic area of procurement. Secondly, two important drivers that lengthen the long tail, maverick buying and over specification, are presented in their own sub-chapters. Lastly, spend analysis, a method to expose what does the long tail contain, is discussed in this chapter. By combining the chapter's content, it is possible to perceive, what the tail spend contain and what are the root causes lengthening the tail.

2.1 Definition

2.1.1 Long tail

In the year 1896, Vilfredo Pareto noticed, that majority of the Italy's wealth is divided between very few people (Anderson 2007). The 80–20-regularity, named after Pareto, can be seen in many different environments; as in procurement, where 80% of total spend is divided between relatively low number, approximately 20%, of the suppliers (Dadswell 2013; Disteldorf et al. 2014).

The absolute 80–20-distribution is carried out very seldom. In procurement, 80 % of the spend can be divided between 10% of the suppliers, or, 20% of the supplier can correspond to 95% or 70% of the spend. However, the regularity gave a foundation to George Ziph's observation on word repetition in languages: the most popular word appears, on average, two times more often than the second popular, three times more often than the third popular etc. (Anderson 2007.) The regularity can be illustrated as a function Y=1/X.

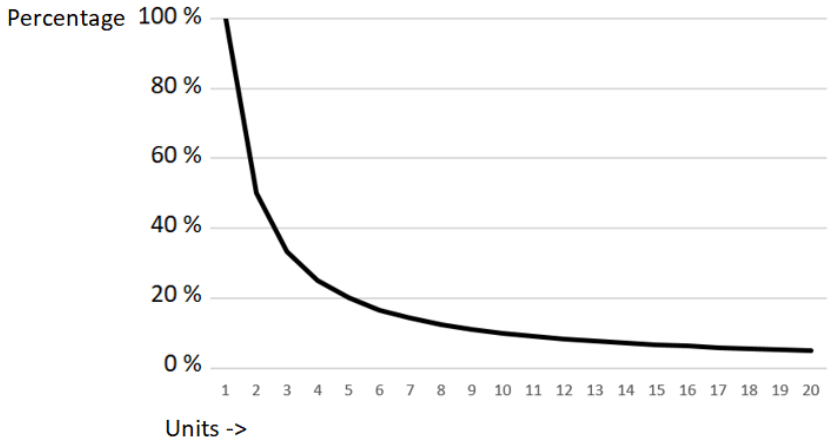

Figure 1 - Y = 1/X

According to Anderson (2007), the function illustrates the distribution of sales when

- there are goods that differ from one another,
- different characteristics between the goods one better to another, and
- there exists a network effect that confirms the differences.

For example, in the music industry, there is a variety of songs, songs differ from each other and the public strongly prefers certain songs. The 20% limit value is reflected in the same function in figure 2 to illustrate the distribution.

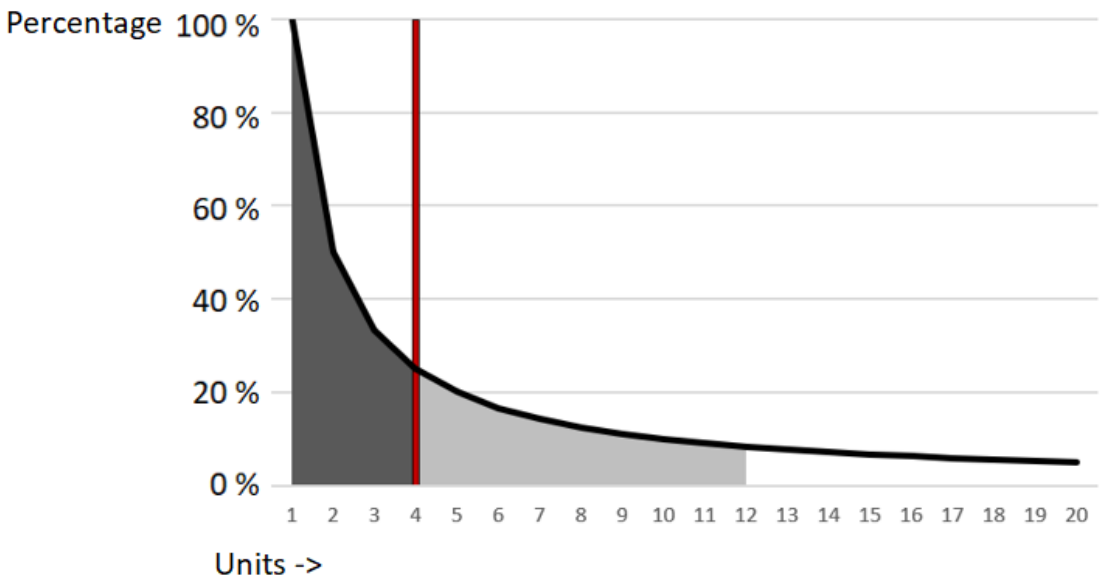

Figure 2 - 80/20-regulation on Y = 1/X

The area on the left side of the line describes, for example, popular products' share of total sales. According to the sales example, on the right side of the line lies the unpopular products, and the area is called the long tail. It is worth noticing, that theoretically the tail is infinite (Anderson 2007). In practice, the limitedness of products to sell rules out the infiniteness. However, there is a large variety of goods to sell, and since there is an inventory cost i.e. a cost for storage and for tied capital for each good, the traditional brick and mortar stores can carry very limited inventory, i.e. a variety of goods to sell. (Anderson 2007.) The tinted area, in figure 2, illustrates the brick and mortar stores' inventory.

Before online stores, the part of the demand was thus unfulfilled. The need for the mentioned demand could be questioned, but, online stores have not only delivered the

demand but also changed the market. In the year 2006, Amazon offered 3 million different books, while the largest brick and mortar stores in the United States offered approximately 100 000. One could question the need for the remaining 2,9 million articles, but the access to a niche market has provided online stores with 7 to 10 times more customer surplus than access to a lower price. (Brynjolfsson et al. 2006).

The customers' appreciation of an extended supply depends on if the available product is something that they are looking for, or if it is a poor substitute for another product (Anderson 2007). Compared to the brick and mortar stores, the lower inventory cost, the lower need to prepare for the variation of the demand, and a wider customer segment enable online stores to provide a massively larger selection of items, hence the tail has lengthened. (Brynjolfsson et al. 2006; Anderson 2007; Brynjolfsson et al. 2011.)

Figure 3 illustrates the prolongation of the tail. The prolongation originates from a market change in the supply side, but also the changes in the demand side have remolded the tail. (Anderson 2007; Brynjolfsson et al. 2011).

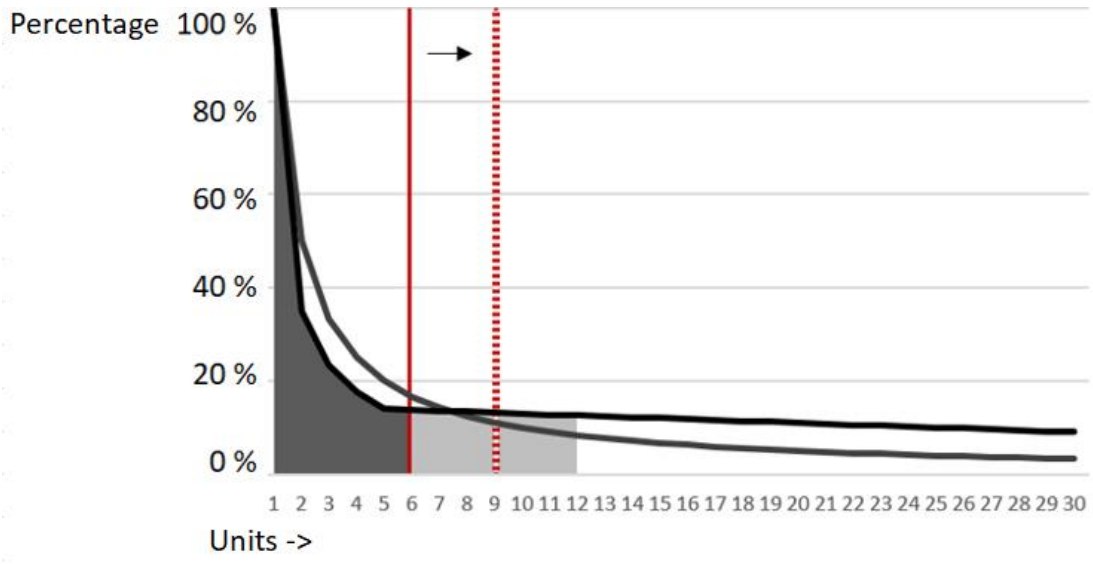

Figure 3 - Online stores' impact on the tail

Because there are more niche products available and online stores enable more efficient navigation on their web site, the tail flattens out while it reduces the sales of more popular products. (Anderson 2007, 168; Brynjolfsson et al. 2006; Brynjolfsson et al. 2011). Both, Brynjolfsson et al. (2006) and Anderson (2007) noticed, that online store flattens out the tail, and, that the 80% share of the revenue is divided between more items

than earlier. The transition is illustrated in figure 3 with a dotted line, moving toward more unpopular products.

Elberse (2008) criticizes the flattening of the tail arguing, that only the availability of niche products does not guarantee their demand, but those products are unpopular for a reason. One reason is that popular products become naturally monopolized because light users of the online store find them more effectively, and the same light users compose the majority of the users on an online store. Meanwhile, niche products are relatively unknown, and those users that recognize them, still prefer popular products. For example, most of the users of an online music store or a streaming service concentrate on popular songs, and the part that recognizes more unpopular songs probably prefers generally popular songs or more popular song of an unknown artist. Taeuscher (2019) even claims that an excessive variety of products online increases uncertainty amongst customers, and drives them to prefer even more the popular products, thus, the tail shortens.

Regardless of how much online store has altered a specific industry's demand distribution, the latest example sheds light on the stability of the tail notwithstanding the level of scrutiny. For example, total consumption of a music genre can be reflected in the function, the distribution of artists inside a specific genre can be observed on the next level, and on the third, the selection of song of one artist, etc. (Anderson 2007.)

The ability to do inter-level examination is essential, because the examination becomes more efficient as the level deepens, and the root reasons behind different patterns emerge (Anderson 2007). When the long tail is examined from the procurement's part, it is arguable, that the root reasons behind different problems appear differently from different levels of observation.

2.1.2 Tail spend

Procurement's long tail essentially differs from the long tail of sales. In procurement, the long tail consists of different suppliers, and maintaining an excessively large number of suppliers brings more a complex cost than the inventory cost of sales. Also, the goal of procurement is definitely not maximizing their spend, whereas in sales it is more probable to have a goal of maximizing the revenue.

A similar distribution appears on procurement when rather few suppliers account for approximately 80% of the spend and the remaining, i.e. the tail spend, is divided between a relatively large number of suppliers (Dadswell 2013; Disteldorf 2014).

Both, the literature and the management, have traditionally concentrated on managing the most important suppliers because even small savings head-end accumulate into relatively huge savings with the volume (Dadswell 2013). At the same time, managing the tail side is challenging, because the complexity of saving procedures easily exceeds the potential savings (Disteldorf et al. 2014). Furthermore, at the tail end, purchasing volume is much smaller, thus the buying company has less leverage to use at the negotiation (Cox et al. 2005a).

The increase in the number of suppliers does not only bring the higher unit cost to procurement because of the lost leverage. Managing an excessive supplier base causes additional costs, for example, when additional invoices are processed. Also, it is more challenging to allocate recourses to follow suppliers with less relevancy, thus lacking the observation creates at least the risk of the additional cost. The additional risk is also borne because sensitive data of buying company's processes' might be revealed to a non-controlled supplier. (Dadswell 2013.)

According to Carlsson (2019), there is also an opportunity cost concerning the fragmentation of the spend when the costs are allocated to the price. If the fixed costs form 30% of the unit price, theoretically, doubling the volume could lead to a 15% savings on the unit price. The other opportunity cost occurs, according to Cox et at. (2005a), when the spend gets very fragmented, the buying company drifts itself into a risk of becoming left out of essential market information and suppliers' innovations.

Fragmentation of the spend is one of the eight common problems of procurement (Cox et al. 2005a). Altogether, Cox et al. (2005a) list the following problems:

- Over specification
- Too early establishment of design and specification
- Frequently changing specification
- Poor demand information
- Fragmentation of the spend
- Maverick buying
- Imbalance in power between divisions
- A culture that avoids risks.

The first four problems decrease the level of standardization (Cox et al. 2005a) and are discussed as a lengthening factor of long tail in chapter 2.3. Besides the lack of standardization, maverick buying lengthens the tail. (Karjalainen et al. 2009) and is discussed in the next chapter.

2.2 Maverick buying

Karjalainen et al. (2009) define maverick buying as "the off-contract buying of goods and services for which an established procurement process is in place based on the pre-negotiated contract with selected suppliers". An increase in maverick buying is directly proportional to the fragmentation of spend; in order to reduce the long tail, maverick buying must be intervened (Cox et al. 2005a).

The cost effects of maverick buying are similar to the ones presented in the previous chapter, concerning the existence of the long tail, because the mechanism by which the costs arise are similar; maintaining and increasing the excessive supplier portfolio decreases the leverage and increases unit costs while increasing processing costs for excessive suppliers and increasing the supplier risk. (Karjalainen et al. 2009; Hingonari 2010.) Angeles and Nath (2007) estimated, that maverick buying increases the costs of procurement on average by 20%.

In addition to that, Karjalainen et al (2009) highlight that the link between the fragmentation of the spend and maverick buying is rather strong. The more the spend is divided between different suppliers, the higher is the level of maverick buying (Karjalainen et al. 2009). Moreover, the company size correlates with the level of maverick buying. As the company grows the procurement gets more complex and especially unintentional maverick buying becomes more common (Kulp et al. 2006).

The set-up is contradictory since larger companies would benefit the most from complying with the contract because they are more capable of leveraging better terms through higher volume (Kulp et al. 2006). In addition, by buying outside the pre-negotiated contracts there emerges the risk of not meeting the amount requirements of the preferred contract, and the preferred supplier might lose its interest to go on with the relationship (Karjalainen et al. 2009).

According to Rothkopf and Pibernik (2016), maverick buying originates from the principal-agent-problem, when the principal (a company) delegates a specific job (purchasing) to an agent (a local manager), and the principal cannot, without additional cost, monitor, whether the agent works compliantly or not. On the other hand, the agent has an incentive for maverick buying, if they benefit more form buying outside the contract, for example, by finding a lower unit price than the one in the contract.

Even though the non-compliantly purchased component was cheaper by its unit price, the total cost of ownership (TCO) might easily be higher. (Karjalainen et al. 2009). The lack of understanding TCO is not the only reason why maverick buying occurs; the reasons are divided into four categories adapting Cox et al (2005b), Kulp et al. (2006), Karjalainen et al. (2009):

- Lack of information
- Missing contracts
- Market-reacting maverick buying
- Intentional maverick buying.

According to Kulp (2006) and Karjalainen et al. (2009), the most common cause of maverick buying is the lack of information. The category includes all the situations where buyers are unaware of purchasing procedures or the existing contract. Karjalainen et al. (2009) call the category unintentional maverick buying. Unintentional maverick buying accentuates especially in indirect procurement, because of relatively low visibility to spend and procurement's lower interference in purchasing (Cox et al. 2005b; Kulp et al. 2006).

In the case of missing contracts, the lack of a contract might be for two reasons. The contract might not be put in place because the subject of purchasing is that new, that there has not yet been time to make a contract. Another scenario is, that the subject of purchasing is so of little importance, that contracting does not benefit either party of the trade. (Kulp et al. 2006; Karjalainen et al. 2009). For the second case, Karjalainen et al. (2009) highlight that making a contract is not always efficient or effective, thus, a certain level of non-compliant buying should be allowed.

Market-reacting maverick buying also consists of two distinct scenarios. Firstly, in this category, the cause of maverick buying can be because of predict preparation for a supplier change. Secondly, maverick buying can occur because of a supplier's capacity re-

strictions. (Karjalainen et al. 2009.) What comes to the monitoring of purchasing, according to Kulp et al. (2006) it is essential to take into account, that maverick buying is sometimes forced. For example, if an employee sends an invoice from hotel accommodation, from a hotel, that was not one of the company's preferred ones, it might be because, the preferred ones were fully booked, and the employee did not have other option than to accommodate elsewhere.

Intentional maverick buying is a wide category, and it includes all the scenarios, where the buyer buys outside agreed contracts, knowing, that there is one in place. The buyer can, for example, believe in getting better savings by buying from an alternative supplier, or just for another reason, prefer a local supplier. The reason can also lie in a lack of trust towards the procurement division or towards the good that has been contracted upon. (Kulp et al. 2006; Karjalainen et al. 2009.)

In the case of intentional maverick buying, it becomes more common that buyers are unaware of the benefits of controlled procurement. According to Cox et al (2005a), the buyer can simply feel that it is unnecessary to buy according to purchasing strategy, without wanting to hurt the company. On the other hand, according to Karjalainen et al. (2009), intentional maverick buying might occur because a buyer feels to be left out, when the purchasing strategy has been made, thus ending up buying outside of the contract. The separate problematic group consists of the situations, where the buyer has a personal interest with a certain supplier (Cox et al. 2005a; Kulp et al. 2006; Karjalainen et al. 2009).

For all intentional maverick buying, but especially for the last group, it is important to find out the motives behind maverick buying as well as to educate buyers on the benefits of controlled buying (Karjalainen et al. 2009; Karjalainen & Van Raaij 2011). The education helps to modify buyers' behavior, especially, when the reason for maverick buying is in the unawareness of the benefits of contracts, risks, or purchasing process (Karjalainen et al. 2009). The mentioned unawareness accentuates in purchases outside the procurement division (Cox et al. 2005b). Cox et al. (2005a) believe that intentional maverick buying occurs partly because there are not enough incentives to comply with the buying policy. However, according to Karjalainen and Van Raaij (2011), implementing an incentive and sanction system would not affect buyers' behavior; more effective would be to reduce their autonomy whilst to automate the purchasing process from suitable parts.

Eliminating the buyers' autonomy for good is not, however, the absolute solution in order to reduce the long tail since some level of maverick buying must be allowed, for instance, in the case of missing contracts (Karjalainen et al. 2009). According to Rothkopf

and Pibernik (2016), the level of monitoring the buyers can theoretically be set on an optimal level because there is a trade-off between the benefits and the costs that monitoring brings.

According to Rothkopf and Pibernik (2016), in a situation, where there are many buyers in a company, and buyers purchase very distinctly from one another, maintaining a monitoring system can be expensive and ineffective for the company. In addition to that, if the buyer has a superior market knowledge over some specific good, it would be more effective to develop the purchasing process with the buyer than force them to comply with the existing policy. Furthermore, adding restrictions into the process might not help to achieve the strategic goals of procurement, if the goal is, for example, to maximize the value flow.

2.3 Specification

Van Poucke et al. (2016) define specification as a level with which an internal customer is satisfied. The definition becomes problematic because internal customer's view on value drivers might differ a lot from the ones, that are important from procurement's point of view. The value gap between internal customer and procurement becomes even more problematic because, in the specification's definition stage, procurement's participation has not been felt to add any value. Furthermore, having procurement present at the specification's definition stage have been even seen as a negative factor, since the internal customers are afraid of losing control over for procurement. (Van Poucke et al. 2016.)

Over specification of purchased goods or services can, in itself, increase costs through higher unit price (Cox et al. 2005a). Also, over specification increases the number of different goods and services to be purchased, and unnecessary deviation causes unnecessary costs (Khalaf et al. 2011; Nabhani et al. 2018). Furthermore, as the product or service variance increases, most likely also the number of suppliers increases, which lengthens the long tail and brings similar cost impacts like the ones described in chapter 2.1.

The hypothesis of tail lengthening as the deviance of purchased good and services increases is based on the notice, made by Andersson (2007), Brynjolfsson et al. (2006), and Brynjolfsson et al. (2011), that the extended deviation of goods sold through different

marketplaces, lengthened and flattened the tail. The impact is further described in chapter 2.1. The reflection is illustrated in figure 4, where over specification's hypothetical impact is represented with a dotted line.

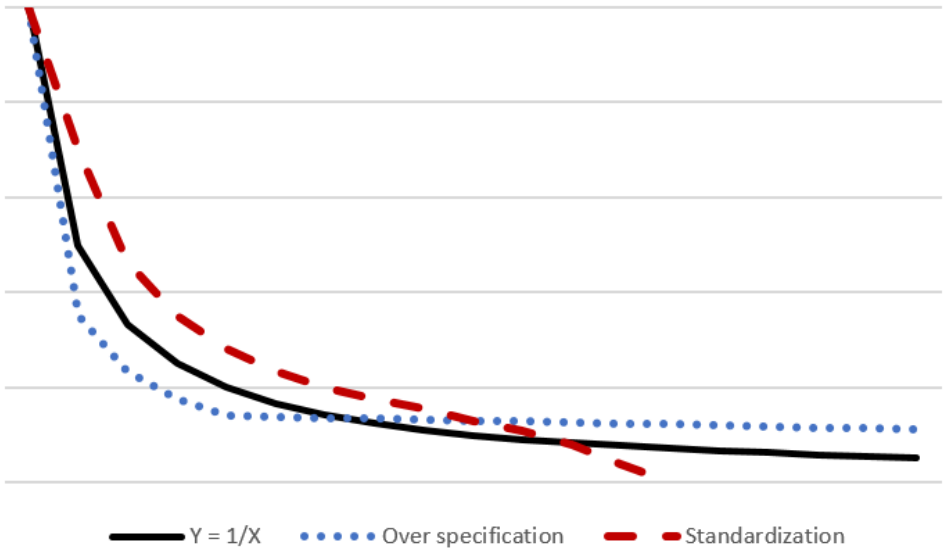

Figure 4 -The impact of over specification and standardization

According to the same logic, standardization should shorten the tail, since standardization decreases the deviation i.e. the number of options available. The impact is illustrated in figure 4 with a broken line. As the deviation decreases, the variation of components decreases, and the production capacity increases, thus the standardization has an impact on both, fixed and variable costs. (Khalaf et al. 2011; Baud-Lavigne et al. 2012.)

Standardization does not have only positive impact on efficiency (Baud-Lavigne et al. 2012). According to Karnicar Šenk and Roblek (2019), in new product development, standardization first increases the effectiveness of a process, but the excessive level of standardization begins to decrease the effectiveness. According to Gupta and Krishnan (1999), the optimal level of standardization can be found, when fixed and variable costs are allocated to the component, that is being standardized, and the level of standardization is increased until the fixed costs' economies of scale becomes visible and variable costs decrease. According to Khalaf et al. (2011), increasing standardization becomes more beneficial if the fixed costs exceed the variable cost in the first place.

According to Nabhani et al. (2018), product variation correlates with the complexity of the business environment. The complexity can be divided into external and internal

complexity. The external complexity consists of changes in the end-customer's requirements and in the market, amongst others, and internal complexity includes the variation in products and processes inside the company. (Schuh 2005, according to Nabhani et al. 2018.)

The waste, caused by external complexity, is similar to the waste Cox et al. (2005a) describe to be caused by poor demand information and excessively often-changing specification. Poor demand information decreases flexibility, because it postpones purchasing toward the point of demand, and there lacks time for strategic planning of the procurement. Excessively often chancing specification has a similar effect on buying company's planning capabilities, and it requires a flexible process that is relatively hard to standardize, and the demand becomes harder to consolidate between different suppliers. (Cox et al. 2005a.) According to Nabhani et al. (2018), procurement has a low chance to impact to external complexity, but in the case of poor demand information, the demand can be tried to be postponed closer to the point of demand (Hoffmann et al. 2011).

According to Hoffmann et al. (2011), when the demand information is poor, the more valuable a good to be purchased is, the more it should be tried to postpone closer to the point of demand. Saghiri and Hill (2014) argue, that postponing of purchasing works effectively from procurement's point of a view, only if the supplier relationship is particularly strong. Since the procurement's tail spend consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013), postponing the point of purchasing might not be an effective solution to manage it.

Instead of controlling external complexity, the buying company should identify internal complexity and aim to control that. As internal complexity considers a variety of both, purchasable goods and purchasing processes, both are needed to be controlled in order to control the tail spend. (Schuh 2005, according to Nabhani 2018.)

A certain level of standardization has the clear benefit of procurement's point of a view. Also, procurement's participation in the development stage of a project has been seen as valuable input. Inconsistently, procurement's role does not accentuate when the projects become strategically significant. (Van Poucke et al. 2016.)

Pemer and Skjolsvik (2016) investigated other parties' attitudes when procurement intervened in the purchasing of consultant services. The participation of procurement was seen to interrupt the communication between the consultant and internal customer since the procurement was excessively concentrated on the price. Also, the concentration on the price was seen to compulsively distort the specification of the service. Furthermore,

the internal customers saw a consultant service as more of a solution to a problem, which was under their responsibility to solve, rather than, as a regular service to be bought. Thus, other division's intervention was felt disturbing.

In the study, procurement sought, depending on their leverage, to achieve benefits of compliant purchasing by either determining specific thresholds to purchasing or by assuring the benefits of compliant purchasing to internal customers. Reciprocally, internal customers, depending on their leverage, either ignored or went around the policy and recommendations. The most functional procedure was when procurement demonstrated the benefits of compliant purchasing by taking examples from simply purchasable services. (Pemer & Skjolsvik 2016.) Also, Kulp et al. (2006) noticed, that the specification effects the level of willingness to buy compliantly: the compliant policy was more efficiently adapted for hotel accommodations than for laboratory equipment.

The complexity of purchased product or service is not the only criterion affecting the success of procurement's involvement; the actual involvement can be executed poorly or at the wrong stage of the procurement process (Lonsdale et al. 2017). Lonsdale et al. (2017) also investigated procurement's involvement in consultancy purchasing, and found out, that the involvement was more successful if procurement professionals accepted supporting role instead of dictating role and sought value for money instead of the lowest cost and simplest specification.

Moreover, procurement's input was most valuable in the need assessment stage and project scoping, where there is a relatively low need for service-specific knowledge for procurement's part. In comparison to the sourcing stage, the stage requires more service-specific knowledge and the relationships between internal customer and supplier are commonly strong, and there is little if no value to be added involved in there. (Lonsdale et al. 2017.)

Van Poucke et al. (2016) and Lonsdale et al. (2017) highlight, that procurement needs to be able to prove its capabilities in value creation in order to establish and maintain controlled purchasing procedures. Procurement needs the right service attitude and competence, including analytical and soft skills, so that procurement's benefits can become realized.

Furthermore, as procurement's value drivers might differ from the internal customers', procurement needs to look beyond its own goals. Even if an aggressive and dictating

involvement of procurement would find a service that would fit somehow to internal customer's needs, the actual service objectives might be met poorly or not at all. (Lonsdale 2017.) Therefore, the value should be co-created.

2.4 Spend analysis

Spend analysis is a reverse microscope from a purchase order to throughout understanding of how procurement functions. Simply put, it shows what is purchased, at what price, how much, and from whom. By analyzing further, it is revealed, where does the money go to and does it deliver the desired value. (Hingorani 2010; Partida 2012.)

In spend analysis, the spend is aligned according to supplier hierarchies, goods and services, and spend volume. Procedure exposes an actual category spend and the division of the spend according to examination level. (Pandit & Marmanis 2008). Therefore, the spend analysis reveals also the long tail of procurement and its content.

In order to conduct a reliable spend analysis, the spend data needs to be consistent. Not only there are different schemas and semantics between different purchasing systems, but the relevant data is very often spread around in different excel sheets in procurement managers' files. (Pandit & Marmanis 2008; Limberakis 2012.) According to Kapoor and Jagdale 2020, the key to control the tail spend is to direct all the tail spend into the same purchasing system.

The best use of spend analysis is to turn it into a predictive analytical tool for value creation. (Limberakis 2012). Adapting the literature (Pandit & Marmanis 2008; Hingorani 2010; Limberakis 2012; Partida 2012; Saxena 2014) the value can be achieved through spend analysis by:

- Identifying the supplier risk and the most important suppliers
- Clarifying the procurement process
- Improving compliance and reducing spend leakages
- Achieving direct saving and cost avoidance.

The spend analysis enables the identification and mitigation of supplier risk by analyzing market and supplier data (Limberakis 2012). According to spend analysis data, suppliers can be divided into categories based on total spend, the good or the service, the industry or geographical location. Based on the segmentation, the data will reveal single-

source suppliers, large volume suppliers, and critical components' suppliers. In addition, suppliers, that are most likely to be draft into the risk, can be identified. For example, by clustering suppliers based on the geographical location, the certain area's risks on political insecurity, infrastructural challenges and currency risk can be noticed. (Hingorani 2010).

Hingorani (2010) does not limit risk management to only geographical risk identification and mitigation. Other mentioned risks, that spend analysis can expose, concern quality, image, shortages, price volatility, environment, security and demand's and supply's imbalances. Limberakis (2012) argues, that managing the supplier risk through spend analysis requires rather advanced analytics, thus supplier risk should be controlled by it, only after more easily achievable benefits have become realized. Since the procurement's long tail consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013), the image risk highlights in the category. If the procurement's goal is to eliminate the long tail, the goal by-produces systematic mitigation of the supplier risk. On the other hand, directions for eliminating the long tail can be sought based on which suppliers' operations should be more closely looked upon and which ones should be gotten rid of, based on risk evaluation. (Hingorani 2010.)

Supplier consolidation based on supplier risk evaluation is certainly one way to clarify the purchasing process. The supplier portfolio can be improved also by allocating the spend based on what proportion goes to well-performing suppliers and what goes to poor-performing ones (Pandit & Marmanis 2008). Both, supplier consolidation and supplier reduction, can be evaluated based on the visibility brought by spend analysis, and both are connected to a clearer purchasing process. (Pandit & Marmanis 2008; Limberakis 2012).

According to Partida (2012) well-performed spend analysis is connected with a reduction in the lead time of the purchasing process. Spend analysis enables justified reduction of suppliers and the use of similar contracts, thus the purchasing process becomes clearer and more efficient, and fewer hours of work are needed for a spend Krona. Meanwhile, the productivity of an employee increases, and handling of single purchase order (PO) becomes quicker and cheaper. (Partida 2012.)

According to Pandit and Marmanis (2008), one adaption of spend analysis is to reveal what proportion of spend has been purchased compliantly and what is not. Compliancy improvement can be divided into internal and external improvements. Internally, maver-

ick buying causes a huge leakage, but leakages are borne also from using expired contracts, re-contracting with the same conditions as the first contract was agreed upon, and maintaining several similar contracts on a place. For example, it can have been agreed, that an initial contract is valid for a certain time period, and after, the parties would come back to agree upon updated terms. However, the mentioned negotiations might not come true, and proceeding long-term period with the initial contract hampers the benefits of a contract to become maximized. (Pandit & Marmanis 2008.)

Even though the terms were reviewed for the buying division, the leakage can occur at the organizational level. The same supplier unlikely forces better terms across company or division borders, e.g. for a daughter company of a buyer, because the supplier's goal is to maximize its own profit. (Pandit & Marmanis 2008).

Taking a closer look at suppliers' operations might also enable to perceive the situations, where the supplier selection is skewed. For example, if a certain supplier has had a certain interest, especially towards the buying company, the supplier might have accentuated its prosses, creating information asymmetry, and the supplier has been selected from the wrong basis. Supplier monitoring can also reduce the risk of fraud. (Pandit & Marmanis 2008).

Leakages can also occur purely externally to the buying company because of suppliers' violations or errors in complying with the contract terms (Pandit & Marmanis 2008). Kulp et al. (2006) address those cases to be the situations where the good or service is not available, the agreed price differs from the one in the invoice, and when the specification does not meet the agreed requirements. Pandit and Marmanis (2008) add to this list the unrealized discounts, errors in the contracts' starting or expiry date, and delivery date mistakes. The mentioned mistakes are hard to fix if the invoicing system has not been integrated with an alerting system, but knowledge of those violations becomes beneficial at least in future negotiations.

Compliance leakages i.e. waste from non-compliant behavior can be estimated by compliance multiplier (Rudzki et al. 2006). In the multiplier, the waste is estimated by the multiply of the non-compliant proportion of the spend, the spend, and the benefits of the contract. For example, a contract might have a pre-negotiated discount, and the discount might not be used if a buyer is unaware of the contract.

Table 1- Compliance multiplier (Rudzki et al. 2006)

Non-compliant porpotion	Spend	Contract's benefits	Waste	Waste/spend
30 %	5 000 000	30 %	450 000	
5 %	10 000 000	45 %	225 000	
55 %	1 000 000	20 %	110 000	
			785 000	4,91 %

Table 1 illustrates the cost effects of non-compliant spend. The table's first two columns come directly from spend analysis (Pandit & Marmanis 2008). Estimating the benefits of the contract is more challenging, because, apart from the unrealized discounts for not buying from the preferred supplier, non-compliant purchasing has a lot of indirect costs, that are further discussed in chapter 2.1.

There is also one problematic group that is not directly exposed from the spend analysis. Supplier A might be one of the preferred suppliers, and when a buyer buys a product X from supplier A, it seems as a compliant purchase. However, supplier A might have specialized to produce a product Y, and X would have been purchased better from supplier B. Hence, compliance-related waste can be accumulated from situations that are ostensibly compliant. (Kulp et al. 2006.) According to Kulp et al. (2006), the waste can accumulate as in figure 5.

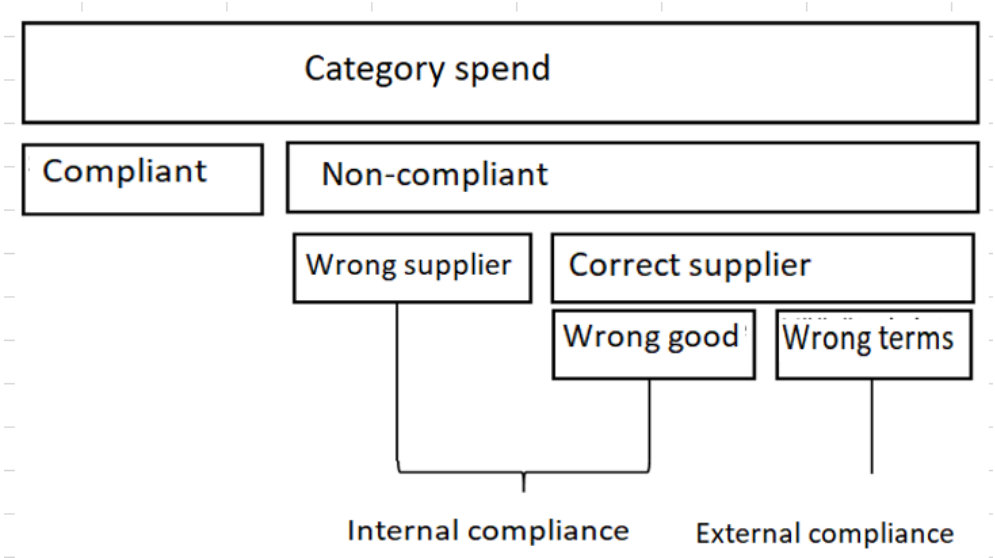

Figure 5 - Levels of compliance (Kulp et al. 2006)

Figure 5 illustrate, that waste can be accumulated also by buying from the correct supplier if a wrong product is purchased or wrong terms are used. In addition to that, Kulp et al. (2006) divide non-compliant purchasing into internal and external compliance.

All the aforementioned procedures most likely realize as cost savings in one way or another. According to Limberakis (2012), one goal of spend analysis is to achieve cost savings and cost avoidance. Cost savings are easier to measure, for example, if there is a procedure based on the spend analysis that affects directly to a certain commodity's annual cost. It is also relevant, that analyzing the spend might enable procedures that help mitigating additional costs as the general level of price increases. Even if certain spend would have increased during a calendar year, it could have increased much more if it would have followed the general increase in the price level. For throughout visibility, the cost avoidance component must be aggregated into spend analysis as well as the chronological dimension of the spend. (Pandit & Marmanis 2008.)

Pandit and Marmanis (2008) divide savings procedures into spend level and transactional level procedures. At the spend level, the procedures concern supplier base reduction and consolidation of the demand, which are discussed further in chapter 3.2, and on maverick buying's and suppliers' performance's impact on spend. At the transactional level, the procedures concern improving compliance, unit price benchmarking amongst peers, and finance opportunities of procurement.

According to Rudzki et al. (2006), Pandit and Marmanis (2008) and Limberakis (2012) well-performed spend analysis should be able to prioritize savings procedures accordingly to their saving potential. Also, Dadswell (2013) argues, that reduction of the tail spend should be started from so-called low-hanging-fruits i.e. procedures, that have the highest potential for value creation compared to their challenges in execution.

The second chapter's theoretical content is summarizer in figure 6. The figure aims to clarify the connection between different sub-chapters and give a basis for a theoretical framework to improve tail spend management.

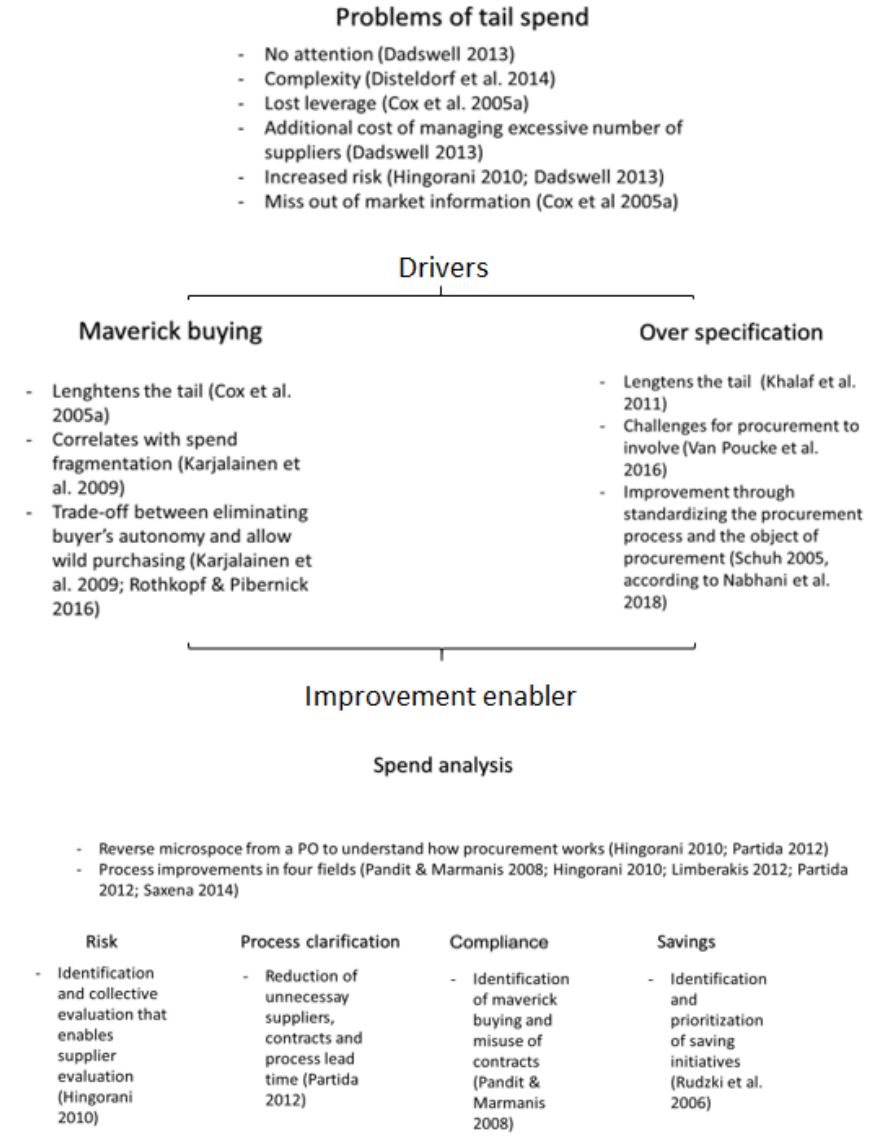

Figure 6 - Key points of the second chapter

Even though figure 6 summarizes how tail spend management could be theoretically approached, it does not take consider the nature of the spend nor the connection between procurement strategy and tail strategy within the procurement category. To find out how to manage the tail spend in a specific context, i.e. the tail spend of the principal company's professional services, both need to be considered. Therefore, the mentioned factors are discussed in the next chapter to have throughout view of what the tail spend contains and how it should be managed.

3 PROCUREMENT STRATEGY FOR TAIL SPEND

The third chapter has three main points. Firstly, it illustrates the alleged content of long tail classifying the procurement beyond compliant and non-compliant spend and standardized and specified sourcing. The professional services category's long tail consists of indirect services; thus the main characteristics of service and indirect procurement are concerned. Secondly, the traditional way of long-tail-characteristic procurement is presented, and thirdly, today's megatrends are reflected on it.

3.1 Classification of procurement

3.1.1 Services vs goods

The traditional way to categorize the spend is to divide it between services and goods. The classification is relevant because, in general, the buying of services is more complex to manage than buying goods (Wynstra et al. 2018). Wynstra et al. (2018) argue, that the reason behind that, is that buying services includes more uncertainty than buying goods, which also accumulates in extra costs of mitigating that uncertainty. According to Hallikas et al. (2013), the nature of the purchasing process becomes more decentralized as the proportion of services in the spend increases. As the purchasing decentralizes, both, unintentional and intentional maverick buying becomes more frequent (Karjalainen et al. 2009) and the tail lengthens. Also, Smeltzer and Odgen (2002) argue, that maverick buying is more common within service purchasing.

The proportion of services in the total spend of a company varies a lot between different industries and companies. However, in developed countries, the proportion of services in total spend has increased rapidly during recent years due to the increasing amount and variety of service businesses, and it is reasonable to expect that the proportion keeps increasing. (Hallikas et al. 2013.) Furthermore, the procurement of services is emphasized in this thesis because the principal company operates in the telecom industry and the researched category consists of professional services.

Especially intangibility and heterogeneity differentiate services from goods, and they have a direct impact on the procurement process even though the actual purchasing processes were similar. For example, the specification becomes more difficult to define and it needs to be set at distinct stages of service e.g. outcome, output, process, or input stage. Because of intangibility, services are more difficult to measure, evaluate, and quantify in

terms of costs, which makes it also more challenging for a buyer to estimate a reasonable price. Furthermore, buying of services requires a higher degree of collaboration between buyer and seller. (Molin & Åge 2017; Wynstra et al. 2018.)

Not only procurement can be divided into goods and services, but also service procurement can be divided further based on its characteristics. Wynstra et al. (2006) divide services into a matrix based on how direct the services' impact on the internal customer (y-axis) is and on the end-customer (x-axis). The impact is illustrated in figure 7.

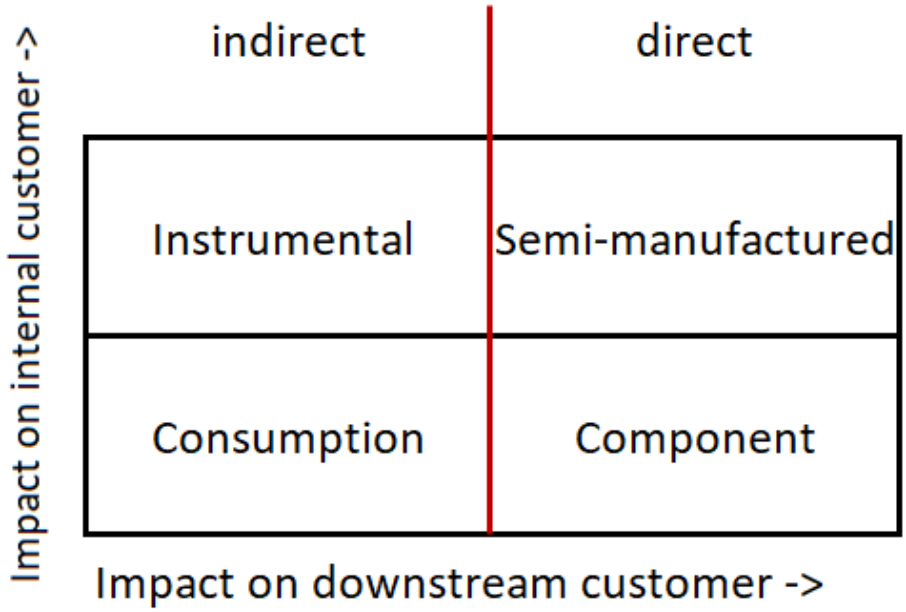

Figure 7 - Classification of services (Wynstra et al. 2006)

Both consumption and instrumental services, are not directly carried out to the end-customer. The difference between the two is that consumption service does not have a direct impact on the company's primary processes either, whereas instrumental services do. Cleaning, security, and health care services serve as an example for consumption service, and for instrumental services, examples can be found from education and management consultancy. (Wynstra et al. 2006.)

Semi-manufactured and component services share a direct impact on the end-customer. The differentiator between the two is whether the service is transformed along the way to the end-customer. Even though semi-manufactured services are, and component services are not, the first ones have a more direct impact on the internal customer, thus positioning higher on the matrix. Examples of semi-manufactured services are

ATM-machines for banks to deliver availability for cash and weather forecasts for flying company when flight schedules are planned. An example of component service takes place when a telecom company buys groundwork service and transportation of goods in order to be able to install cables and install systems at the customer's office. (Wynstra et al. 2006.)

Wynstra et al. (2006) also highlight that service's technical content is not enough alone to define the procurement strategy. For example, cleaning service serves as an example of consumption service in several cases, but when it comes to cleaning of airplanes in airway companies, the service becomes a semi-manufactured service.

However, the classification is relevant to this study for two reasons. First, Wynstra et al. (2006) argue that different quarters should be managed differently. Secondly, the vertical distinction between the quarters describes a line of indirect and direct purchasing, since indirectly purchased goods and services do not directly be transmitted to the end-customer (Carlsson 2019). Also, maverick buying stands out especially in indirect service purchasing when there is no direct input-output-relationship in the purchasing process (Rothkopf & Pibernik 2016), thus it is arguable, that the number of suppliers for a specific level of spend is higher on the left side of the line of figure 6.

Furthermore, since the procurement's tail spend consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013), and the impact on internal customer increases when going upwards on the y-axis on the matrix whilst the need for the embeddedness of the supplier relationship increases (Wynstra et al. 2006), it becomes arguable, that the tail spend posits majorly in the bottom left-hand corner of the matrix. However, the same quadrant does not include only consumption services, but also all minor services (Wynstra et al. 2006). Therefore, for the principal company's tail spend, more dictating will be the indirect nature of the services i.e. the left side of figure 6.

In consumption services, even though the demand is highly spread between different suppliers, the purchased services very often support the core processes of the buying company. Also, the internal customer's demand has a central role in the interaction process. Therefore, it is important that the supplier is capable to meet internal customer's requirements and to adapt the service according to those requirements. For a buyer, it is critical to be able to communicate and to translate the requirements whilst also following up on the delivery of the service and user satisfaction. (Wynstra et al. 2006.)

For instrumental services, it is important to find a fit between the service and the main processes that it affects. An instrumental service often affects also other processes than the one it is primarily aimed at; thus it needs a broad cross-functional team from both companies who interact with each other. Apart from being able to become integrated into the buying company's processes, the supplier of an instrumental service needs to be able to innovate and develop the service. Therefore, also developing the supplier relationship is inevitable and beneficial. For a buyer, it is important to be aware of what suits when, where, and to whom. (Wynstra et al. 2006.)

Wynstra et al. (2018) argue, that even though buying services is, in general, more challenging than buying goods, the distinction does not apply always. According to them, the reason why buying services is more challenging comes from the exact same reason why one product is more expensive than others, i.e. based on transaction cost economics (TCE) and the embeddedness of the relationship. The impact of embeddedness is discussed more in chapters 3.2 and 3.3. TCE's driving factors behind the difference are:

- Uncertainty
- Transaction-specific investments
- Transaction's frequency.

Uncertainty comes from environmental uncertainty, when it is challenging to predict the conditions that surround the service, and from behavioral uncertainty when it is difficult afterward to see, have the terms been complied with. Transaction-specific investments consist of, for example, locked-in situations when the supplier educates the new, complex IT-system, and the dependency towards the supplier increases. Transaction's frequency inverses naturally the transaction cost. (Wynstra et al. 2018.)

Wynstra et al. (2018) do not only demonstrate that there is a reason why buying services becomes more challenging than buying of goods in general, but they also argue, that if those factors can be controlled, the difference disappears. In other words, if the characteristics of buying services become more transactional, for example, the relevancy of the embeddedness of the relationship has no difference in whether the subject of purchasing is a service or good. Furthermore, the difference between a service and good is not so polarized, many services have material components and vice versa.

3.1.2 Direct vs indirect procurement

Generally, procurement is also divided into direct and indirect procurement. Direct procurement consists of the spend, used directly to the end-product or end-service of the buying company (Cox et al. 2005b; Pandit & Marmanis 2008). Therefore, the object of indirect procurement is something that is not being transmitted to the end-customer but is being used at the process (Pandit & Marmanis, 2008; Carlsson 2019). Another definition is that the subject of indirect procurement does not deliver value directly to the end-customer, but it maintains operational activities of a company (Cox et al 2005b). Van Weele (2005) classifies indirect procurement to include purchasing of all the products and services that are bought for the processes, that are not the primary processes of the buying company.

The literature has strongly concentrated on managing direct procurement even though indirect procurement forms a significant part of total spend (Cox et al. 2005b; Jayaram & Curkovic 2018). Indirect spend's proportion of total spend varies between companies and industries, but it can easily represent up to 50% of the total spend of a company (Cox et al. 2005b; van Weele 2005; Angeles & Nath 2007; Carlsson 2019).

The one main characteristic of indirect spend is that it consists of many different categories and purchasing is widely spread between those categories and between the buying company (Jayaram & Curkovic 2018; Carlsson 2019). Since there are many different buyers purchasing inside the category, and the spend is widely spread, purchasing prices are often sub-optimal and maverick buying accentuates inside the category. (Pandit & Marmanis 2008). Rothkopf and Pibernik (2016) highlight that maverick buying is especially indirect procurement's problem, and Kulp et al. (2006) estimated maverick buying to bring additional costs between 20 to 30% for indirect procurement.

Furthermore, Kulp et al. (2006) argue, that maverick buying is strongly presented among indirect procurement because of the lack of information of existing contracts, which is further discussed in chapter 2.2. It is logical, that the lack of information drives people to maverick buying, since, compared to direct procurement, indirect product and service variety is enormous, thus logistical complexity is as well significant (van Weele 2005).

The complexity is one reason why indirect spend lacks management's attention. Also, lacking management has not been seen as an acute problem to be fixed. Together, the two lead to a situation, that indirect procurement lacks, in general, sufficient measurements

according to which it could be managed. (Jayaram & Curkovic 2018). Cox et al (2005b) and Angeles & Nath (2007) argue, that the leisureliness of conducting indirect purchasing under strict management is because the area is a rather low risk area to be managed, thus managers' attention is paid elsewhere.

All the mentioned characteristics of indirect procurement indicate similar characteristics as the tail spend of the procurement has. The lack of literature concentration, consistency of different categories, wide fragmentation of the spend, suboptimal pricing, accentuation of maverick buying, and complexity are all either characteristics or causes of tail spend (Dadswell 2013). It is thus strongly arguable, that in the big picture, a company's tail spend consists majorly of indirect purchasing, and more accurately in the situation of the principal company, of indirect services. However, the equal sign cannot be automatically drawn between indirect purchasing and the tail, because one describes the good's or service's connection to the end-product and the other the fragmentation of the spend amongst the suppliers. Therefore, there is no mechanism that would automatically place directly purchased goods or services to the head-end of the procurement. Nevertheless, the connection between indirect procurement and the long tail is rather strong, thus managerial procedures of the first can be sought to be adapted to the other.

One other similarity between the long tail and indirect purchases is, that they both have many technically simple, straightforward, and almost identical products and services (Disteldorf et al. 2014; Carlsson 2019). Even though the principal company's professional services category's tail spend consists of indirect services, and the services are more challenging to be managed than goods (Wynstra et al. 2018), Lingreen et al. (2013) argue, that indirect services have way more transactional characteristic than direct ones, thus the managerial difference between good and services decreases its relevancy amongst the tail (Wynstra et al. 2018), thus the approach to reduce the tail can be pronouncedly absorbed from the indirect procurement strategies rather than service management strategies.

Accordingly, to van Weele (2005), Pandit and Marmanis (2008), Jayaram and Curkovic (2018), and Carlsson (2019), indirect procurement could be improved by the following procedures:

- Neglecting to buy
- Standardizing the specification and the procurement process
- Supplier and purchasing consolidation
- Leveraging the contracts
- Reducing the transactional cost

- Outsourcing.

Van Weele (2005) argues, that there is an end-of-the-year-fever amongst some categories of indirect purchasing. Furthermore, 60% of some categories' demand takes place during the last three months of the accounting year and are bought without an urgent need. Van Weele (2005) concludes, that the behavior is caused partially because of budget limitation: if the accounting year's budget has not been used up, the next year's budget might be smaller, thus the end-of-the-year-fever is a protective procedure for the future. Also, Carlsson (2019) argues that a need for purchasing could be neglected, reduced, or postponed.

Because indirect purchasing consists of many products and services that are similar to each other, there is room for evaluating the specification of a purchased good or service and for standardization i.e. turning almost identical into identical (van Weele 2005; Carlsson 2019). The procedure could lead to supplier consolidation when the number of different purchased goods and services decreases (Pandit & Marmanis 2008). Also, Jayaram and Curkovic (2018) argue, that indirect purchasing would improve if the purchases were consolidated amongst different divisions i.e. by consolidating purchases.

Van Weele (2005) mentions the leverage of contracts as one procedure to improve the performance of indirect procurement, and the procedure can be seen as reducing the leakages in procurement, which is further discussed in chapters 2.2 and 2.4. He also points out the reduction of transaction costs of procurement and the outsourcing of insignificant purchasing.

There are two main procedures to reduce the transaction cost of the procurement. The first is to aim to reduce complexity in the procurement process and to standardize the process for suiting parts (Carlsson 2019). The other is to outsource the procurement of a certain category for a third party and take advantage of their economies of scale for the purchasing category, and by by-product, reduce own complexity and aggressively cut the tail (Su et al. 2016).

The main characteristics of both, indirect procurement and service procurement, and their connection to tail spend are illustrated in figure 8. The connection is made bundling the theory together and to illustrate that indirect service procurement likely poses the similar problems that tail spend.

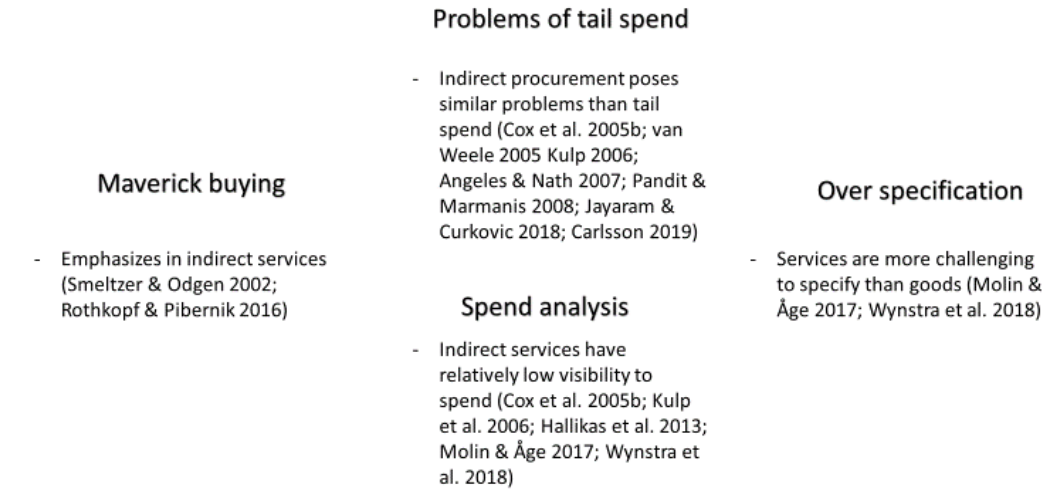

Figure 8 - Indirect services' connection to tail spend

Figure 8 concludes that in the indirect service procurement category, the same problems as tail spend poses, accentuate. Also, the drivers, maverick buying and over specification are challenging to control because they naturally occur because of indirect spend's characteristics. Furthermore, spend visibility for both areas is low, which complicates the ability to control the procurement.

Before concluding how the indirect service tail spend should be managed, the theory goes through strategic procurement literature for tail spend management. Because all the spend should not be managed similarly (Cox 2005b), strategic procurement is looked from indirect service tail spend point of view, and it is considered, which strategic factors should be considered when developing a tail spend strategy.

3.2 Procurement's strategic hierarchy

Procurement's strategic hierarchy is examined in this chapter through the framework, presented by Hesping and Schiele (2015). The framework bases on the concept, that the overall strategy is hierarchized on five different levels, and the strategy on each level should be derived from the strategy above. For example, if a company's strategic goal (1st level) is to cut down CO2 emissions, sourcing eco-friendly suppliers should then be emphasized in procurement strategy (2nd level) (Hesping & Schiele 2015). The framework is illustrated in figure 8.

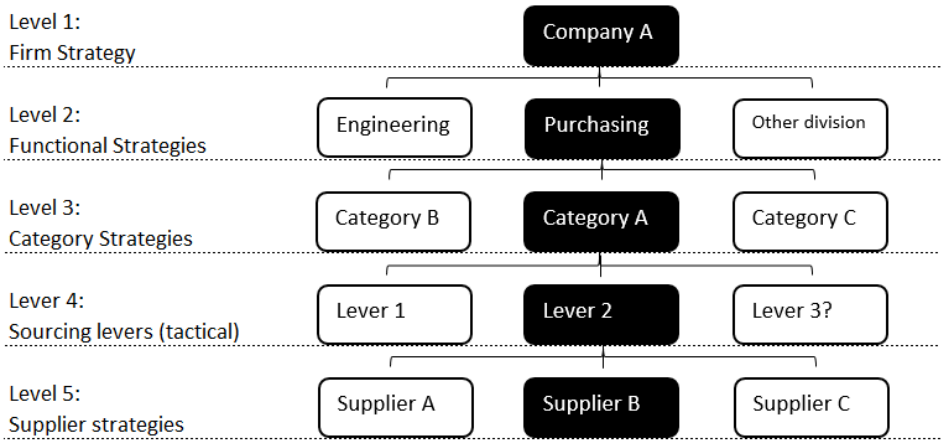

Figure 9 - Strategic hierarchy (Hesping & Schiele 2015)

In this chapter, levels three to five are discussed. Also, a fit between the third and fourth level is discussed in its own sub-chapter, because sourcing levers in the fourth level are tactical methods to execute a category strategy. Levels one and two are examined through interviews and based on internal and external material in this thesis to create a basis for the tail spend strategy.

3.2.1 Third level - Purchasing product portfolio

Peter Kraljic (1983) was allegedly the first one who questioned routine characteristics of the procurement function. Instead of concentrating on transaction-processing efficiency of procurement, there was more value to be captured through procurement (Hughes & Ertel 2016). Kraljic (1983) saw, that not all purchases should be managed similarly, and in addition, the importance of purchasing and the complexity of the supply market, affect, for example, how much resources should be allocated to the supplier relationship. He reflected the mentioned factors into a matrix presentation, known as Kraljic's matrix.

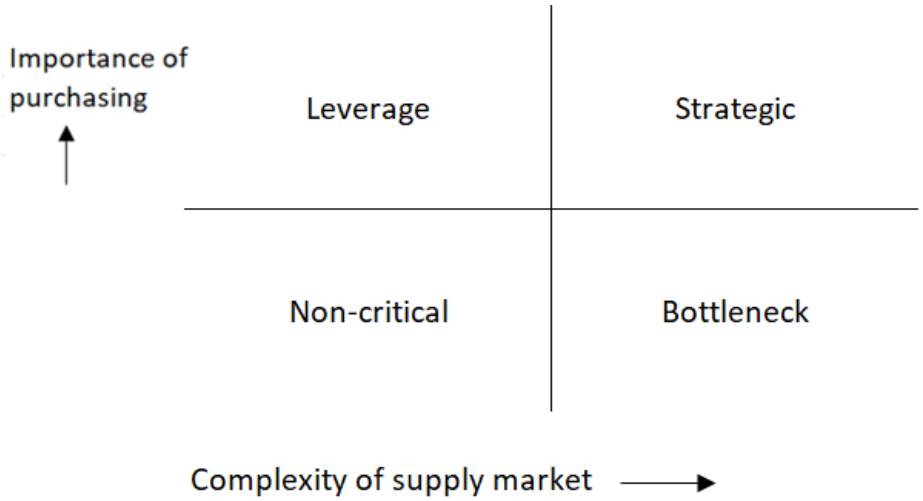

Figure 10 - Kraljic's matrix (Kraljic 1983)

The non-critical quadrant consists of purchases that have low strategic importance and are frequently ordered from many different sources. As the strategic importance increases but the complexity of the market remains low, buying organization becomes an important player in the market while there are many alternative suppliers to buy from. Therefore, the buying organization ends up in a situation where it can leverage the market and exploit its purchasing power. (Kraljic 1983.)

Moving towards other direction from the non-critical quadrant, as the market gets more complicated, but the purchasing volume remains low, there are fewer options to buy from, and the leverage moves to suppliers' end. Lastly, the strategic quadrant describes a situation where the purchase is critical for buying organization's profitability and operations, and it can be sourced only from a limited number of suppliers. Meanwhile, the subject of purchase is rather specified, and it can only be sold to a limited number of buyers, which also makes the buyer strategically important to the supplier. (Kraljic 1983.)

As the procurement's tail spend consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013) it is arguable, that it posits at the lower part of the y-axis on Kraljic's matrix, since, according to Kraljic (1983) the volume correlates with the importance of the purchase. Meanwhile, according to Disteldorf (2014) tail spend has many simple, straightforward, and almost identical products and services, thus positioning to non-critical quadrant. However, there is no mechanism that would exclude the bottleneck quadrant from the tail, since there the volume remains low as well, thus the two quadrants are closely examined.

3.2.1.1 Non-critical quadrant

According to Kraljic (1983), since the non-critical quadrant does not have strategic importance nor significant restrictions on the supply side, the quadrant should be aimed to managed as efficiently as possible. Caniëls and Gelderman (2005) and van Weele (2005) argue, that the quadrant contributes approximately 20% of the purchasing turnover but requires 80% of the time used in purchasing. In other words, the transaction cost for procurement should be minimized, and for that, Kraljic (1983) recommends standardizing, optimizing the order volume and inventory level, and improving process efficiency.

Since the principal company's procurement's long tail consists of indirect services, and services cannot be stored (Hallikas et al. 2013), optimizing the order volume and inventory levels cannot be applied to long tail reduction strategy for this study. Instead, standardization and improvements in process efficiency are taken into closer consideration.

Standardization for the quadrant is strongly supported in the literature (Kraljic 1983; Olsen & Ellram 1997; Nellore & Söderquist 2000; Caniëls & Gelderman 2005; van Weele 2005). Olsen and Ellram (1997) argue, that in the quadrant, the number of suppliers should be reduced, and standardization should be applied to boost that reduction by eliminating almost identical substitutes. They also describe the supplier relationship to be self-managed, whereas Nellore and Söderquist (2000) argue that the supplier relationships are completely needless in the quadrant. They add, that because the relationship between the parties in the quadrant is already weak, and communication is flawed, the increase of standardization helps both to perform better.

Caniëls and Gelderman (2005) approach the standardization from another angle. According to them, standardization in the non-critical quadrant can enable the buying company to move upwards on the matrix, onto a more preferred location, the leverage quadrant. Parallelly, lack of standardization, i.e. over specification, might steer the situation rightwards to the bottleneck quadrant (van Weele 2005). The impacts are illustrated in figure 10.

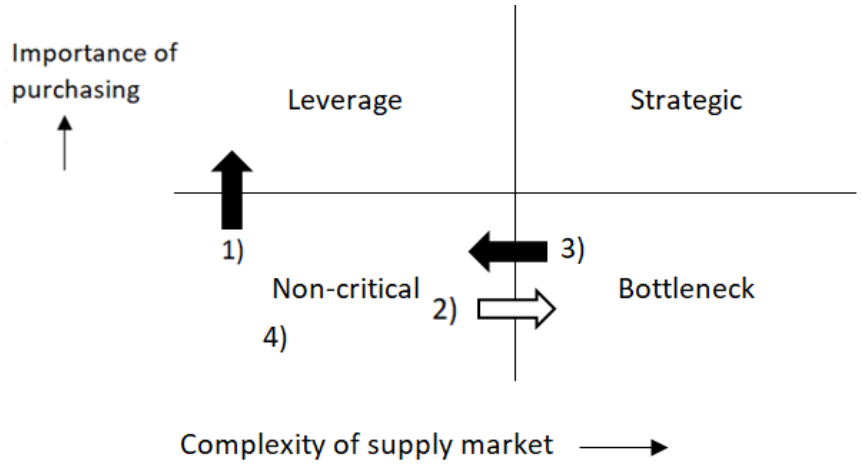

Figure 11 - Moving on Kraljic's matrix

In figure 10, tinted arrows illustrate standardization's impact on the movement on the matrix, whereas the arrow without filling illustrates how over specification could lead to bottleneck position. According to Caniëls and Gelderman (2005), standardization also enables shifting from bottleneck quadrant to non-critical one (third situation).

The fourth situation is to aim to stay in the quadrant and to pursue efficient processing while being there (Caniëls & Gelderman 2005). According to Caniëls and Gelderman (2005) whenever moving upwards from the quadrant is not possible, the ordering should be adopted somehow individually in order to reduce the indirect purchasing costs that are associated with administrative activities of the procurement unit e.g. ordering and invoicing.

One way to reduce the time used in purchasing within the buying company would be to outsource the procurement. The outsourcing strategy can be backed up from three different sub-strategies within the non-critical quadrant. The applicable sub-strategies for the quadrant are process efficiency improvement (Kraljic 1983; Hadeler & Evans 1994; Olsen & Ellram 1997; Nellore & Söderquist 2000; Caniëls & Gelderman 2005; van Weele 2005), volume bundling (Kraljic 1983; Olsen & Ellram 1997; Caniëls & Gelderman 2005) and supplier rationalization (Hadeler & Evans 1994; Olsen & Ellram 1997).

According to Hadeler and Evans (1994) simple, and value-potentially insignificant goods and services should be purchased as simply as possible. Only when the strategic importance of the purchase increase, the embeddedness of the relationship increases. They add that the key to managing the category is to find a trustworthy supplier and grant that supplier as much responsibility as possible.

3.2.1.2 Bottleneck quadrant

In comparison to the non-critical quadrant, bottleneck quadrant's purchases are only available from a limited number of sources (Kraljic 1983). The limited number of suppliers can be because the purchased good or service requires a high level of technological expertise or the supply market otherwise has a high entry barrier (Van Weele 2010). Also, asymmetrical information can create relative power for the supplier i.e. the buying company is not aware of other available options in the market (Caniëls & Gelderman 2005). Furthermore, especially when buying services, the services in the bottleneck quadrant are often very user-specific or complex and are bought on as need -basis, which lowers internal control and creates unnecessary risk (Ellram & Tate 2015).

As illustrated in figure 10, by standardizing the purchasable product or service, it is possible to move to the non-critical quadrant, where there are many alternative suppliers to buy from (Hadeler & Evans 1994; Olsen & Ellram 1997; Nellore & Söderquist 2000). The same effect is achievable by widening the specification (Nellore & Söderquist; Caniëls & Gelderman 2005) or by pro-actively sourcing new suppliers (Caniëls & Gelderman; Van Weele 2010).

Changing the supplier might not be an effective or efficient option in this quadrant. According to Hadeler and Evans (1994) developing the relationship with an existent supplier is far more important than finding alternative suppliers, since getting innovative suppliers on board is critical in bottleneck purchases. Instead of seeking savings by switching the supplier, for example, a product development initiative can be started with the supplier, which generates indirect savings elsewhere in buying company's operations. Also, Olsen and Ellram (1997) argue, that it is primarily easier to develop the existing relationship than starting a new one from the scratch.

According to Caniëls and Gelderman (2005) preferred strategy than moving to the non-critical quadrant would be to stay put, accept the dependency, and reduce the negative consequences. The authors suggest having safety stocks as a protective procedure, but as services cannot be stocked (Hallikas et al. 2013), a more effective way would be to reduce the risk concerning to these purchases (Ellram & Tate 2015).

According to Ellram and Tate (2015), bottleneck services are highly specified by their nature. As over specification increases the level of maverick buying (Karjalainen et al. 2009), unprotected agreements are commonly used, which creates a liability and audit risk amongst the quadrant's purchases (Ellram & Tate 2015). Procurement can generate

value in this scenario by arranging clear requirements for purchasing and restricting the buying company's liabilities. This can be executed, for example, by forming a contract template that instructs in identification and choosing of supplier and in contracting. (Ellram & Tate 2015).

Another mean by which procurement can create value in bottleneck service purchasing is by involving to specification (Ellram & Tate 2015). Ellram and Tate (2015) describe, that the ultimate goal of the suppliers is to deliver only what is needed and, to the buying company, to pay for only what is needed. Meanwhile, especially in the bottleneck service category, it is problematic to clearly define what is needed, which leads to skewed specifications and unsatisfied needs. If procurement can involve in the specification definition stage, as early as possible, the stakeholder's need might be able to be translated into the correct requirements, and the described waste could be avoided.

3.2.2 Fourth level - Sourcing levers

In 2007, Holger Schiele introduced seven sourcing levers to improve procurement's performance. The levers are illustrated in figure 11.

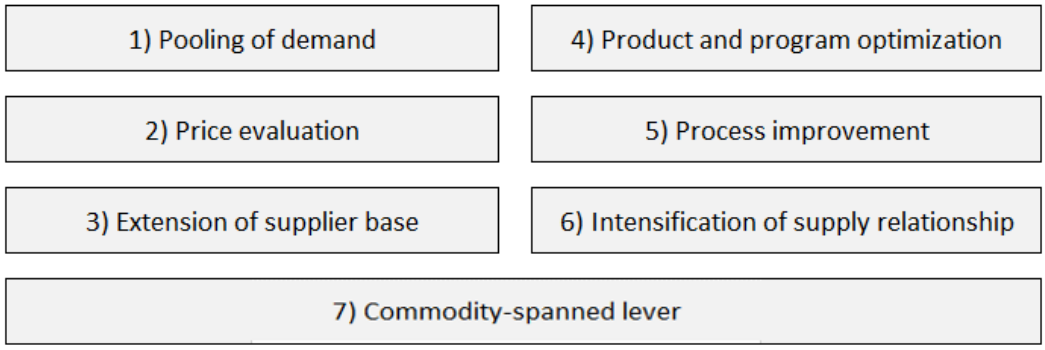

Figure 12 - Seven sourcing levers (Schiele 2007)

The first three levers are executed internally in the buying company. 1) Pooling of demand means reducing the number of suppliers for a commodity and aiming to benefit from economies of scale by increasing the volume for the remaining suppliers. 2) Price evaluation consists of different procedures for price negotiation, both, by more frequent

bidding and quotations and by doing a cost analysis of suppliers' cost structure. 3) Extension of supply base describes new, usually global, sourcing opportunities in order to achieve cost savings and reduce dependency for the existing supplier(s). (Schiele 2007.)

The next three levers (numbers 4 to 6) are executed together with the supplier. 4) Product and program optimization include modifications, for example, standardization, made for material or service in order to benefit both parties of the trade. 5) Process improvement aims to achieve benefits by simplifying or automating the buyer-seller interface, for example, in order to enable demand planning and predict material flow through the process. 6) Intensification of supply relationship means developing more strategic partnership by gain-sharing agreements and early supplier integration into new product development. (Schiele 2007.)

The seventh lever is a commodity-spanned lever, meaning optimization at the interfaces between commodities, categories, and suppliers and balancing trade-offs among different sourcing categories. For example, it is possible, that different categories compete of the same resources, and by coordinating between those categories, there are several benefits to be achieved (Schiele 2007; Hesping & Schiele 2016b.)

It is also essential to notice, that sourcing levers are not strategies in themselves, but tools to achieve pre-determined strategic goals, hence positioning at the fourth level in the strategic hierarchy. Furthermore, whichever levers are decided to be used at the category-level, the use might differ between different suppliers, thus supplier strategies form the fifth level on the hierarchy. (Hesping & Schiele 2015.)

Schiele (2007) also supports the view that levers are used inside a category. He also highlights, that when a lever is applied, it should also be thought, what are its effects on other commodity groups. For example, if a cheaper paper is bought, it might increase the use of ink used on that paper. Schiele et al. (2011) also noticed, that the levers are not only able to be used simultaneously, but the simultaneous use of levers brought better results on procurement's performance, compared to when the levers were applied one at a time. Another relative notion of them was, that not a single lever clearly outdid others in single-use comparison.

3.2.3 The fit between third and fourth level

In chapters 3.2.1 and 3.2.2, product portfolio and sourcing levers have been presented separately, thus there arises a question: is there a link to match a particular category with the best lever(s)?

As the levers can be combined and the combined use of levers predicts a better result on procurement's performance (Schiele et al. 2011) two scenarios are investigated: internal and external levers. The division was originally made by Schiele et al. (2011). Internal division means, applied simultaneous use of three first levers presented in figure 11, whereas external describes a similar application for levers from four to six. An example of the internal use of levers is consolidating the demand in order to achieve lower unit cost, whilst tendering offers from the suppliers and maybe also examining the opportunities abroad. An example of external use of levers could be to start a throughout conversation with a supplier in order to match processes better together and eliminate waste in the process while deepening the relationship and maybe also enabling an easier platform for communication.

Based on the literature in chapter 3.2.1.1, the relationship with suppliers in the non-critical quadrant is not relatively strong and communication is challenging already in the first place (Olsen & Ellram 1997; Nellore & Söderquist 2000). As the quadrant already requires approximately 80% of the time used in procurement while only generating 20% of the purchasing turnover (Caniëls & Gelderman 2005; van Weele 2005, 194) requiring more procurement's attention to develop supplier relationships might not be an efficient use of resources, thus the literature in the chapter 3.2.1.1 might tip towards internal strategy.

The internal strategy for the non-critical quadrant is also supported by Schuh (2011). Schuh (2011) built up 64 methods to improve procurement's performance into a matrix that base on leverage between supplier and buyer. The matrix's logic works similarly to Kraljic's and accumulating all the methods from the quadrant, where both party's leverage is low, almost all the recommended methods go together with the internal strategy. (Schuh 2011.)

Meanwhile, Schuh's (2011) methods for managing the bottleneck quadrant i.e. situation when the leverage is on the supplier's end, seems to tip more towards external strategy. The methods concern about taking down the bottleneck by redesigning the process or the product, involving the specification and modifying the scope of purchase in order

to move towards the non-critical quadrant eventually, or securing the supply by contracting.

Also, the literature in chapter 3.2.1.2 prefers external strategy over internal. Only the third lever, an extension of the supply base, is mentioned by Caniëls & Gelderman (2005) and Van Weele (2010), whilst it is argued, that developing the relationship with the existing supplier is more important and effective (Hadeler & Evans 1994; Olsen & Ellram 1997). Furthermore, Cox et al. (2005b) noticed the development of a long-term supply relationship to be the most commonly adopted strategy to manage the whole indirect spend.

On the other hand, Hesping and Schiele (2016a) also reflected the use of different levers onto the different quadrants of Kraljic's matrix, and found out, that different levers are simultaneously used in every quadrant. According to them, tactical levers should not be viewed as alternatives; they should be used in an additive way in practice. Meanwhile, Ates et al. (2018) see, that the two different strategies require different structures from procurement function, and the procurement structure can only support one of the two strategies to function effectively.

Another important aspect of the mentioned strategies is what kind of supplier portfolio supports the objective of the chosen strategy the best. According to Ates et al. (2015) for cost strategy i.e. non-critical quadrant the supplier base should be heterogeneous, but purchasing is more efficient when it is done from a limited number of suppliers per each good or service. The best performance occurs when suppliers compete with each other and the contract duration is short or moderate.

For innovation strategy i.e. for the bottleneck quadrant, the supplier base size is not ambiguous. On the one hand, reducing the number of suppliers might reduce the level of innovations since each additional supplier theoretically possesses potential for innovative solutions. On the other hand, a smaller supply base enables more attention and volume to preferred suppliers which might increase their motivation to invest in innovative technologies. (Ates et al. 2015.) According to Ates et al. (2015), single-sourced services are connected with a higher level of innovativeness, but the quadrant was managed better if there were at least two suppliers to buy from. Another aspect that increased the performance was information sharing with the supplier.

3.2.4 Fifth level – supplier strategies

Once the category strategy is in place and suitable levers to manage the category are found, it is essential to realize that not all supplier relationships are to be managed similarly. In the tail, the supplier might be rather strategic and have a huge value potential if the relationship is managed correctly, or there might not even be a relationship to be managed (Nellore & Söderquist 2000). Furthermore, those two suppliers might have the same annual spend, so it is paramount to be able to assess the tail suppliers by criteria that consist of more components than just a spend (O'Brien 2018)

O'Brien (2018) suggests that suppliers should be segmented based on five criteria:

- Risk
- Alignment
- Future importance
- Current importance
- Difficulty.

Supplier risk is further discussed in chapter 2.2. According to Hoffman et al. (2019), supplier's alignment is the key criteria for supplier evaluation, because as digitalization pervasively becomes more common, it becomes more critical to select the suppliers that are committed to that development and buying company's purchasing strategy also from other parts. O'Brien (2018) highlights, that misalignment might cause significant consequences, for example, if the buying company creates value through sustainability and the supplier is accused of several environmental offenses.

Future importance, current importance, and difficulty are allegedly low in the tail, because of the tail spend's characteristics. However, the business environment changes over time, and currently unimportant suppliers might have potential importance in the future or vice versa. The current importance can be measured by spend and supplier's know-how and the difficulty is described by the same metrics that Kraljic (1983) used: difficulty to change the supplier, a low number of suppliers, the object of procurement, that requires close co-operation with the supplier, limited availability and a huge amount of demand in comparison to availability. (O'Brien 2018.)

O'Brien (2018) suggests that the suppliers should be estimated and visualized as illustrated in figure 11.

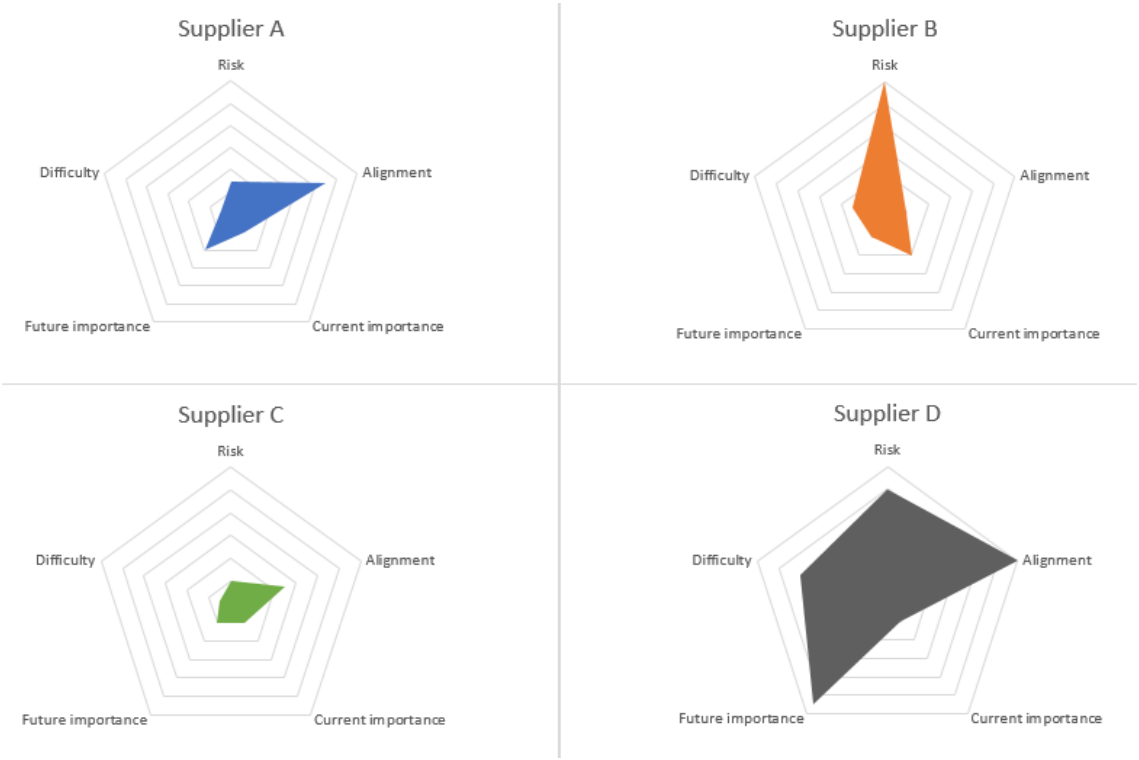

Figure 13 - Supplier segmentation (O'Brien 2018)

An example shows that there might be very different suppliers in the tail, where the current importance, i.e., the spend is low. As illustrated, the segmentation is relevant. For example, if supplier A and B offer substitutes, A would be a much better option to keep buying from, even though in the current situation, more spend is used for B. Also, if part of the tail spend is purchased outside procurement division, supplier C poses way less risk and opportunities than D, thus can be better shifted to businesses whereas there is a huge potential to develop more strategic relationship with supplier D, and those differences might escape one's attention if only spend per supplier is observed.

The key points of this chapter are summarized in figure 14. The figure shows strategic derivation from company strategy until tail spend supplier assessment.

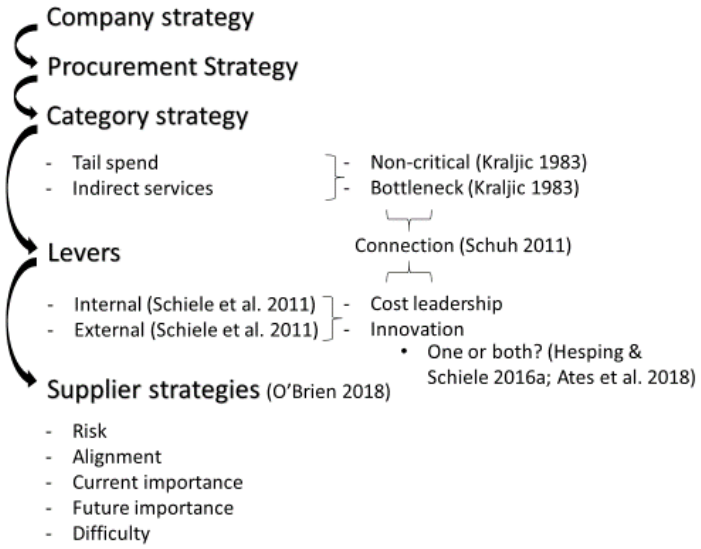

Figure 14 - Strategic hierarchy for tail spend

Figure 14 shows that one key consideration for tail spend strategy development is a decision whether to apply the guidelines from cost leadership strategy, innovation strategy, or from both. Since the decision criteria derive from the upper level strategies, the most recent trends in procurement's field, that affect to those strategies, are discussed in the next chapter.

3.3 Change in procurement's field

Procurement has gotten far since the development started from a transaction-oriented activity towards a more value-driven function (Giunipero et al. 2019). In the 1990s, strategic procurement became popular, however, basing majorly on Kraljic's matrix, presented in chapter 3.2.1. In 2020, Kraljic's matrix is still relevant, but not sufficient. It bases on the law of supply and demand and pricing on the supply market, and the capacity restrictions nor the conformities to the law changes over time. (Hughes & Ertel 2016.) However, the matrix was designed for manufacturing companies, and as the relational proportion of purchased services keep on arising, and the value drivers differ between purchased goods and services, the matrix becomes insufficient per se (Wynstra et al. 2006; Hallikas et al. 2013; Hughes & Ertel 2016; Wynstra et al. 2018).

Another notion, that Hughes and Ertel (2016) made on Kraljic's publication was, that the word "innovation" did not appear a single time in his article. In 2007, Schiele (2007) pointed out, that procurement's goal was not only to achieve cost savings but also to access the suppliers' innovations. In 2019, procurement's function was already moved from cost saving to value contributor, and one megatrend of purchasing is to rather buy value or solution than a specific good or service (Giunipero et al. 2019; Hoffmann et al. 2019).

Value-driven contracting is one of six procurement's current megatrends (Hoffmann et al. 2019). All trends are illustrated in table 2.

Table 2 - Procurement's trends applicability and positioning (applied from Hesping & Schiele 2015; Hoffmann et al. 2019)

Trend	Applicability	Positioning	Example
Glocalization and near shoring	N/A		
Sustainability	Y	1st level	Transparency in supply chain
Internal & external collaboration	Y	2nd level	Processes exceeding silo boundaries
Hybrid product and servizitation	N/A		
Value-driven contracting	Y	2nd level	Buying value instead of cheapest solution
Big data, AI, process automation	Y	1st level	Enabling purchasing to be effective and efficient

Glocalization means moving towards near-shoring and even on-shoring as a consequence of protectionism and more advanced technologies. Hybrid product and servitization describes how services' proportion of purchases will keep increasing while also purchased products begin to have service elements more and more. (Hoffmann et al. 2019). The two trends are left out of this study because small, indirect services are seldom purchased from far abroad and the thesis concentrates on answering the question *"how to manage the tail spend"*, not *"what is a level of servitization in tail spend"*.

Sustainability is continuously rising its importance as the customers value it more and more. (Streimikiene et al. 2016.) Because sustainability requirements origin from external customers' needs, which drive the company's overall strategy, the trend can be positioned on the first level of the strategic hierarchy, presented in chapter 3.2. Of all the mentioned trends, sustainability has gotten a significant part of researchers' attention and it has developed the fastest over the last 20 years (Giunipero et al. 2019). Hoffmann et al. (2019) point out, that sustainability does not only concern carbon emissions, but also social aspects of sustainability. Furthermore, in procurement, sustainability requirements are not

fulfilled, only if the buying company is complying with them, but the impact extends to suppliers and further into the supply chain as well (Shafiq et al. 2017).

Van Poucke et al. (2019) nominate internal collaboration as the most effective way for the procurement to create value. They highlight proactive capabilities that procurement should have in order to involve in the procurement process, since procurement is sometimes seen as a restriction in the process, more discussed in chapter 2.3 (van Poucke et al 2016; van Poucke et al. 2019). Lonsdale et al. (2017) argue that procurement is able to bring the most value in the project scoping stage of the procurement process since the stage does require relatively little service-specific knowledge on procurement professionals' part. Hoffmann et al. (2019) recommend the collaborations to be extended division-wise among different purchasing categories, and amongst different companies inside the industry.

Partially in contrast with internal collaboration, there is a clear shift in procurement process ownership in near future (Gartner 2019). The change is illustrated in figure 12.

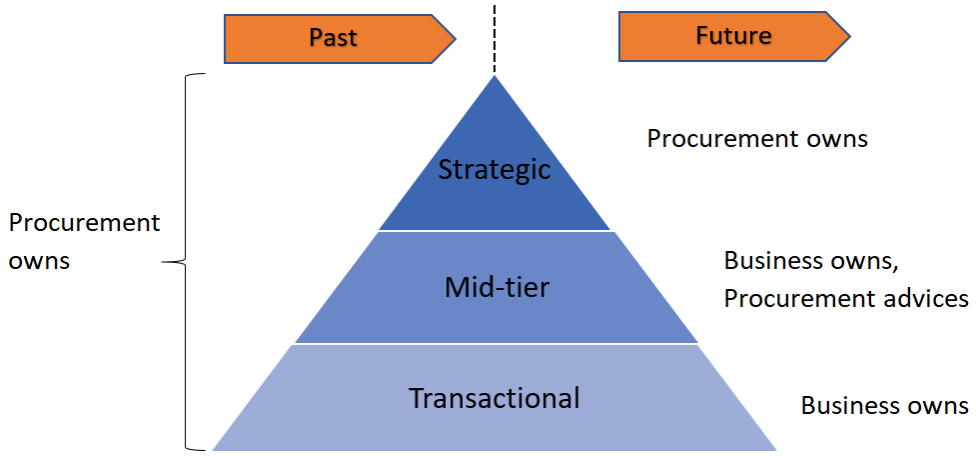

Figure 15 - Change in process ownership (Gartner 2019)

As illustrated in figure 12, instead of controlling all the purchases, procurement will only concentrate on managing the most strategic suppliers. In mid-tier, procurement will operate as an advisor, but the purchasing will most likely be executed by businesses. Also, the transactional purchases will be made by businesses and procurement will most likely decrease its involvement in that category. (Gartner 2019.)

Giunipero et al. (2019) point out, that there is a lot of research about strategic and transactional procurement done over the last two decades. Meanwhile, in figure 12, both have a clear role in process ownership (Gardner 2019) whereas mid-tier might form a

problematic group, both, in role assignment and in drawing a line that separates it from transactional and strategic procurement.

Since the procurement's tail spend consists of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013), it contains mostly indirect services when mostly services are purchased (Wynstra et al. 2006), and indirect services are transactional by their characteristic (Lingreen et at. 2013), it is arguable that tail spend posits at the lowest level on the pyramid, illustrated in figure 12. If tail spend is more closely looked through Bardell's (2011) framework, presented in chapter 1.1., controlled and standardized steady tail posits likely to transactional procurement whereas long tail might extend to mid-tier, since fulfilling non-standardized needs and constantly changing specification needs also procurement's attention. As the observation level moves upwards on the pyramid, the long tail's appearance becomes less likely because of spend limitations.

Meanwhile, as maverick buying lengthens the tail (Cox et al. 2005a), maverick buying is already common among long tail (Karjalainen et al. 2009), and it becomes even more frequent when the purchasing is executed outside the procurement division (Cox et al. 2005b). The situation becomes problematic when tail spend purchasing moves strongly away from procurement. It is reasonable to expect, that, ceteris paribus, the shift will increase the level of maverick buying.

Value-driven contracting goes closely together with internal and external collaboration, as the suppliers are offering comprehensive value chains instead of singular products or services. Value-driven contracting is based on performance-based contracting where the desired output or solution to a problem is bought rather than a good or service. The strategy moves the risk of outcome towards the supplier's end and the specification does not have to be solely made by the buying company. In other words, the supplier's ideas on execution and innovations can be better achieved. (Hoffmann et al. 2019.)

However, as the long tail allegedly posits at bottleneck or non-critical quadrant on Kraljic's matrix 1) the supplier might not be willing to bear the risk because of its leverage or 2) moving the risk to the supplier's end might increase the cost of procurement excessively, as the supplier might demand a very high cost-of-risk premium (Akkermans et al. 2019). Akkermans et al. (2019) therefore propose to set collaborative KPIs with the supplier and to share the risk. In addition, to avoid excessive costs from moving the risk, the very nature of services being produced together makes it reasonable to set collaborative KPIs for their success as well (Akkermans et al 2019).

Furthermore, sharing the risk creates trust between the parties which leads to increased transparency and better performance. By adapting aligned incentives and committing to the risk both parties might better understand the process at the operational level and the value is better achieved. (Akkermans et al. 2019.)

Big data, artificial intelligence (AI), and process automation will govern procurement in near future (Hoffmann et al. 2019). According to Connaughton (2020), AI will be used for creating guided buying tools to help users to identify and use the correct suppliers, contracts, and catalogs. If purchases were systematically controlled by a reliable machine, many problems of tail spend, such as maverick buying, would most definitely reduce and eventually disappear.

Technology has a lot of potential, but there is also a huge gap between the state of knowledge and the expected importance of technology adaption. Also, the logic by which a machine could select the best service provider to fulfill a certain need is yet not investigated enough. (Hoffmann et al. 2019.) Connaughton (2020) argues that it will take between 5 to 10 years that AI-based e-sourcing will reach its plateau, and 10+ years for autonomous procurement. Meanwhile, it is expected that the tail spend procurement will be developed a lot during this time period (Connaughton 2020).

According to Connaughton (2020), while technological development matures, there are procedures procurement should take to increase its efficiency. Especially for tail spend management, the following list accentuates:

- Defining digital success metrics to procure-to-pay (P2P) process and providing catalogs for indirect spend in order to centralize and standardize P2P
- Designing buying processes focusing on user-experience in order to lower procurement cost and reduce lead time
- Optimizing the working capital and capturing discounts.

The trend's connection to procurement's strategic hierarchy is illustrated in figure 16. The connection between the trend and how they interpret in company strategy and procurement strategy of the principal company is discussed in chapter 4.1.

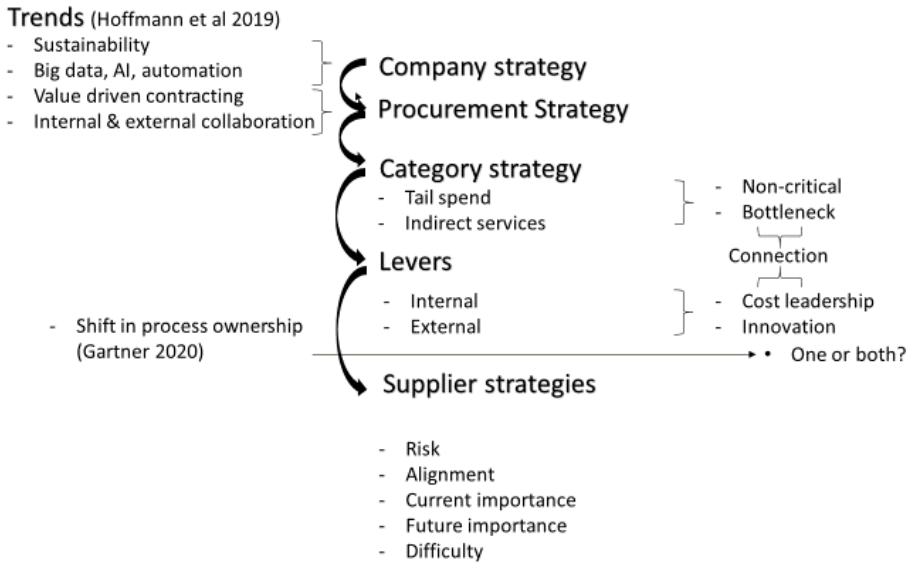

Figure 16 - The trend's connection to procurement's strategic hierarchy

Figure 16 shows that there is a link between the shift in process ownership and the decision, whether to adapt strategic guidelines for tail spend strategy from cost leadership strategy, innovation strategy, or both. According to Ates et al. (2018) purchasing structure should align with the purchasing strategy to work effectively. For a cost leadership strategy to work, the purchasing structure should be highly centralized and formalized and there should be a low cross-functionality in there. Conversely, the innovation strategy can be better achieved with a decentralized, low-formality, and highly cross-functional purchasing structure. (Ates et al. 2018.) As the shift in process ownership decentralizes purchasing (Gartner 2020), innovations strategy might work better, if the shift has taken place in a procurement category.

Also, before considering solutions for tail spend management, it needs to be found out, what are the problems of long tail and what are the root causes of those problems. The approach used to investigate in this thesis is presented in the next chapter.

3.4 Theoretical framework for managing the tail spend

There is a very limited amount of academic literature about tail spend management. One reason for that is that both, academic literature and management have traditionally concentrated on the head-end of the spend, where relatively small procedures accumulate to

large cost savings through volume. (Cox et al. 2005b; Pandit & Marmanis 2008; Dadswell 2013; Distedorf 2014 Jayaram & Curkovic 2018.) Also, tail spend management is a rather new field to be investigated, and companies are only starting to pay their attention there (Connaughton 2020).

In chapters 2 and 3, tail spend management has been approached from two different angles. First, the problems of tail spend and two main drivers were identified, and the main characteristics of indirect service procurement were reflected in the framework. After that, spend analysis as an improvement enabler was discussed, and improvements were sought from four key areas: risk, process clarification, compliance, and savings. The approach is illustrated on the left side of figure 17.

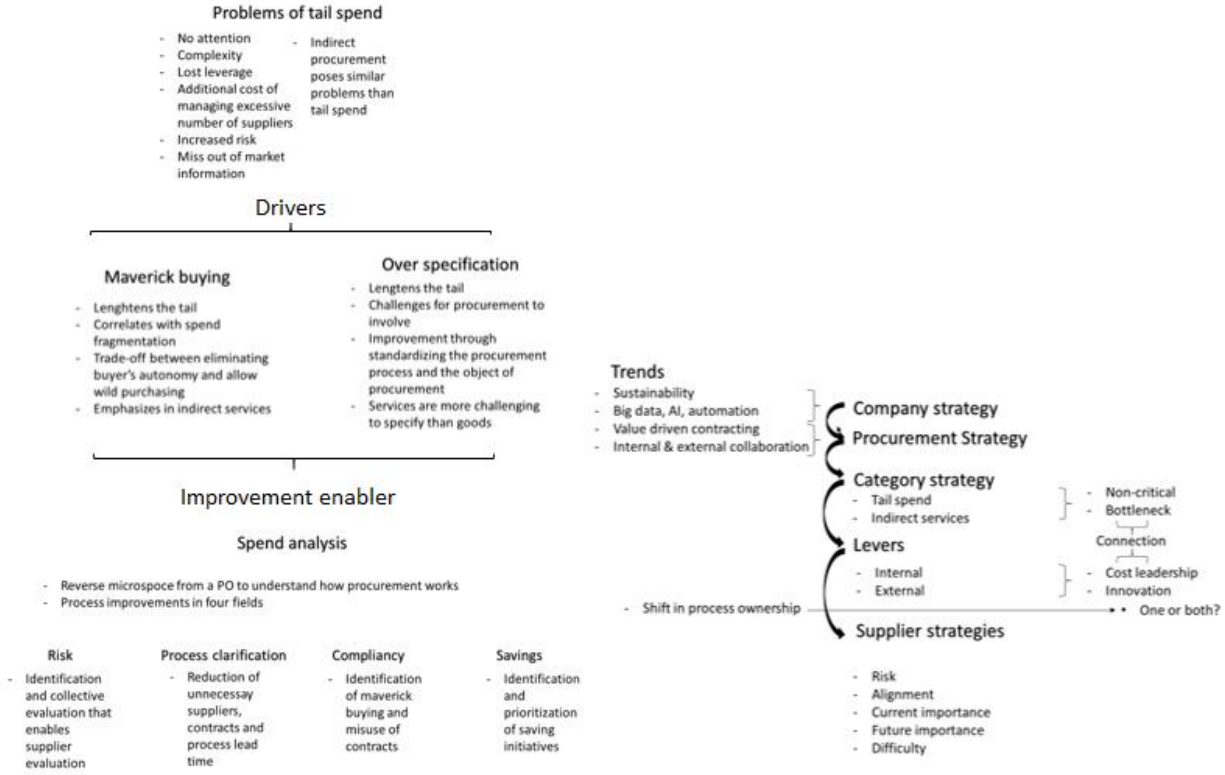

Figure 17 – The literature on tail spend management

The other approach to tail spend management is illustrated on the right side of figure 17. The category strategy for tail spend management is derived from procurement strategy

and overall company strategy which are both affected by the most recent trends (Hesping & Schiele 2015; Hoffmann et al. 2019). Furthermore, different levers and supplier strategies are used to improve the category's performance (Schiele 2007; Schiele et al. 2011; O'Brien 2018). Theory in chapter 3.2 and 3.3 did not have an unambiguous stand on whether guidelines for tail spend strategy development should be applied from cost leadership strategy, innovation strategy, or both (Hesping & Schiele 2016a; Ates 2018). Also, the literature did not specify tactical tools to achieve strategic goals for tail spend management. To have a basis for tactical tools, an approach to manage the tail spend is considered, assessed through the existing theory, and attached as a continuation of the theoretical framework.

The chosen approach for tactical process improvement is so-called Closed-Loop Tail Spend Management Approach that bases on a parallel reactive and proactive approach to control the tail spend, providing five procedures to achieve value from the long tail and minimize waste related to it. (Kapoor & Jagdale 2020). The framework was chosen, not only because academic literature lacks suitable frameworks, but also because it is new, it provides pragmatical tools and it covers process automation opportunities, that were highlighted for the researcher to investigate during the research process.

According to Kapoor & Jagdale (2020), the tail spend should be actively involved reactively and proactively. Reactive involvement means continuous management of all requisitions to drive compliance and generate value. Proactive involvement considers the analysis of spend trends and opportunities and driving value through redirecting tail spend to preferred channels and through preferred processes. Combined, the tail spend leakages can be reduced, tail spend management becomes systematic and continuously improved.

Active involvement is at least partially in conflict with the trend of shifting process ownership, i.e. assigning transactional spend to businesses to manage (Gartner 2019). Meanwhile, the approach goes closely together with the trend of internal collaboration within the company (Hoffman et al. 2019). The question of *should* procurement allocate resources to long tail comes down to its value generation capabilities in the tail, which will be examined in this thesis in the context of the principal company.

> *Proposition 1: before deciding how to manage the tail spend, it should be decided is the tail spend worth managing.*

However, the question of whether procurement or businesses should manage the tail spend is not black and white. Bardell (2011) divides the tail spend into three sub-categories:

- The short tail: small, continuous spend that can be identified and classified, e.g. office supplies
- The long tail: small spend that consists of non-standard requirements and keeps on changing, e.g. creative services
- The steady tail: non-contractable spend that will always be there, and it is hard to do anything about it, e.g. meeting provisions

After dividing tail spend into sub-categories, simultaneously businesses can place orders to short tail spend while demand occurs, and procurement can actively manage the long tail spend and provide businesses with an efficient process to manage the steady tail (Bardell 2011). Therefore, scoping the tail spend is very important (Dadswell 2013; Distedorf 2014).

Kapoor and Jagdale (2020) consider the Closed-Loop Tail Spend Management approach to be applied throughout the tail spend division but accentuating in the long tail. They define the tail spend to be "purchases from "invisible" suppliers and ad hoc purchases that are low-volume, low-frequency, or low-value; not actively managed across spend categories". According to them, active tail spend management creates value in six different areas

- Reduced lead time
- More spend under strategy
- Capacity improvements
- Enhanced used experience
- Overall process compliancy
- Lower transaction cost.

According to Partida (2012), well-performed spend analysis is connected with a reduction in the lead time of the purchasing process. A lead time reduction bases on a clear and efficient process, and reduction of similar suppliers and contracts. Through increased transparency and spend visibility purchasing requisition (PR) processing becomes more efficient and fewer hours of work are needed for a spend Krona. (Partida 2012.) Apart

from labor cost reduction, there arises another proposition that will be investigated in the principal company's contexts:

Proposition 2: When designing a tail spend management strategy, the effect of process lead time should be investigated as a value driver.

The second proposition is taken into investigation because the dimension of how short or long lead time affect the purchasing process's value contribution, costs, or buying behavior was not considered in the theory of this thesis. Meanwhile, according to Kapoor & Jagdale (2020), lead time reduction is the area, where active tail spend management affects the most.

Having more spend under strategy can be viewed from two different perspectives. On one hand, if the company's overall strategy is to generate value through being eco-friendly, thus procurement's goal is to source from sustainable suppliers, it is not beneficial to maintain suppliers that are accused of environmental offenses. On the other hand, the same buying tactics that are used for the head-end suppliers might not work effectively to tail spend of the same procurement category (Schiele et al. 2011; Schuh 2011; Ates et al. 2018).

Schiele et al. (2011) presented cost leadership strategy and innovation strategy as different ways to increase procurement's performance. Apart from deciding whether the tail spend strategy should base one of them or both, there might be a conflict between head-end's and tail spend's strategies if they are executed within the same category. According to Ates et al. (2018), the cost-leadership strategy is better achieved when the purchasing structure is highly centralized and formalized and there is a low cross-functionality in procurement. Conversely, the innovation strategy can be better achieved with a decentralized, low-formality, and highly cross-functional purchasing structure. It would be contradictory to have, both, centralized and decentralized or highly and lowly formalized purchasing structures in place at the same time.

Ates et al. (2018) also see an indirect fit or a misfit between purchasing structure and purchasing performance depending on if the strategy is aligned with the structure. Therefore, according to their findings, it does make sense to separate two different functions from each other, let the procurement concentrate on its core know-how, and direct the problematic long tail elsewhere, as in Gartner's (2019) investigation, directly to the businesses. However, according to the same logic, the long tail could also be separated into

its own category and a more transactional-oriented approach could be applied there, hence the third proposition:

Proposition 3: when designing a tail spend strategy, it should be decided who is responsible of managing it and what is the strategic connection between head-end and tail spend strategy.

Capacity improvement can be seen as a workload reduction throughout the procurement process. In chapter 3.2, tail spend was positioned to the lower side of the y-axis of Kraljic's (1983) matrix, i.e. to contain non-critical and bottle neck procurement (Kraljic 1983; Dadswell 2013; Disteldorf et al. 2014). According to Caniëls and Gelderman (2005) and van Weele (2005) non-critical procurement alone accounts for 20% of procurements turnover and 80% of the used time. Therefore, it is arguable that procurement managers' and specialists' time could be better used elsewhere, i.e. there is a need for capacity improvement. Apart from a more efficient process, in order to decrease the time used for tail spend management, tail spend can be purchased to some extent by someone else that the buying company (Su et al. 2016). The incentive for making the tail spend management process more efficient is clear, but outsourcing the procurement function leads to the fourth proposition:

Proposition 4: when designing how procurement managers' and specialists' time could be used better, it should be assessed, can the tail spend procurement be outsourced to some extent.

Enhanced user experience is in close connection with maverick buy reduction since lack of trust towards the procurement process and division is one reason for maverick buying (Kulp et al. 2006; Karjalainen et al. 2009). In order to shorten the tail and manage the tail spend effectively, maverick buying must be intervened (Cox et al. 2005a). According to Karjalainen et al. (2009) in order to effectively reduce maverick buying, the reason why buyers purchase outside of the pre-negotiated contract and preferred purchasing process must be identified before aiming to reduce the maverick buying. Therefore the fifth proposition is presented:

Proposition 5: when designing how to improve compliance in tail spend management, the reasons why maverick buying occurs should be identified.

Lastly, transaction cost reduction can be seen from various angles. For example, if the procurement process is unstructured, each purchasing transaction might have a high labor cost (Partida 2012). On the other hand, if tail spend procurement is uncontrolled, maverick buying can create unnecessary transaction cost (Cox et al. 2005a; Karjalainen et al. 2009; Hingorani 2010). Furthermore, if the needs are not well planned, over specification of the need might require the use of a new supplier and increase the transaction cost because of additional contracting (Khalaf et al. 2011). At the last example, transaction cost might be excessively high also because excessively heavy contract is required in the buying company's policy. (Kapoor & Jagdale 2020). Because the transaction cost reduction has many dimensions, which might be company-specifics, the sixth proposition is presented:

Proposition 6: when designing a tail spend management process, cost drivers at the transactional level should be identified and assessed, whether a reduction of such cost drivers would generate value to the tail spend management process.

Improvement areas', their importance and strategic level of tail spend management in relation to research findings are discussed in chapter 5.1. Chapter 5.2 concentrates on the tactical and operational level of tail spend management. Kapoor & Jagdale (2020) present five procedures to capture the value and minimize the waste in tail spend. The procedures are:

1) Catalogs: to direct as much indirect, transactional, and compliant spend as possible to catalogs
2) Spot buy: to set a relatively low limit value, e.g. 100 000 SEK, for a non-contracted minimum risk spot buys to go through an eased purchasing process
3) PO under contract: for contracted spend when a master agreement (MA) is in place, instead of making a delivery contract (DC) for new spend, preferring the use of purchase orders (PO's)
4) Pre-approved contract templates: in cases when an additional contract is needed, using pre-approved templates

5) Auto bid: to automate the request for proposal (RFP) process and integrating sourcing and purchasing closer together by flipping the RFP into PO

The theory in the second and third chapters does not take a stand of the precise procedures of managing the tail spend. If tail spend is looked as non-critical or bottleneck purchases, two notions can be made. According to Kraljic (1983), non-critical purchases should be aimed to manage as efficiently as possible. According to Ellram and Tate (2015), procurement can deliver value to the bottleneck quadrant by arranging clear requirements for purchasing. As the presented procedures aim to standardize the procurement process and improve the process' efficiency, the approach seems to be right.

Further justification for process standardization can be sought from controlling complexity since complexity is one of the characteristics of tail spend (Dadswell 2013; Distedorf 2014; Nabhani et al. 2018). In chapter 2.3, complexity is divided between external and internal complexity. Also, it is presented that external complexity can only be controlled when high-value goods and services are bought, and thus concluded that it is more effective to aim to control internal complexity instead of external (Schuh 2005, according to Nabhani et al. 2018; Hoffmann et al. 2011, 37; Dadswell 2013; Saghiri & Hill 2014; Nabhani et al. 2018).

Managing internal complexity is executed through controlling internal processes and variation of purchased goods and services (Schuh 2005, according to Nabhani et al. 2018). As Closed-Loop Tail Spend Management Approach aims to answer *how* to purchase, it does not cover *what* to purchase. Therefore, the eight proposition is presented:

Proposition 7: In reactive tail spend management, it should be considered if the specification of the service could be compromised in order to bundle more demand to the preferred suppliers.

Apart from specification compromise in reactive tail spend management, the procedures' applicability and their adjustment needs are considered in relation to research findings in chapter 5.2. All combined, the theoretical framework for this thesis is illustrated in figure 18.

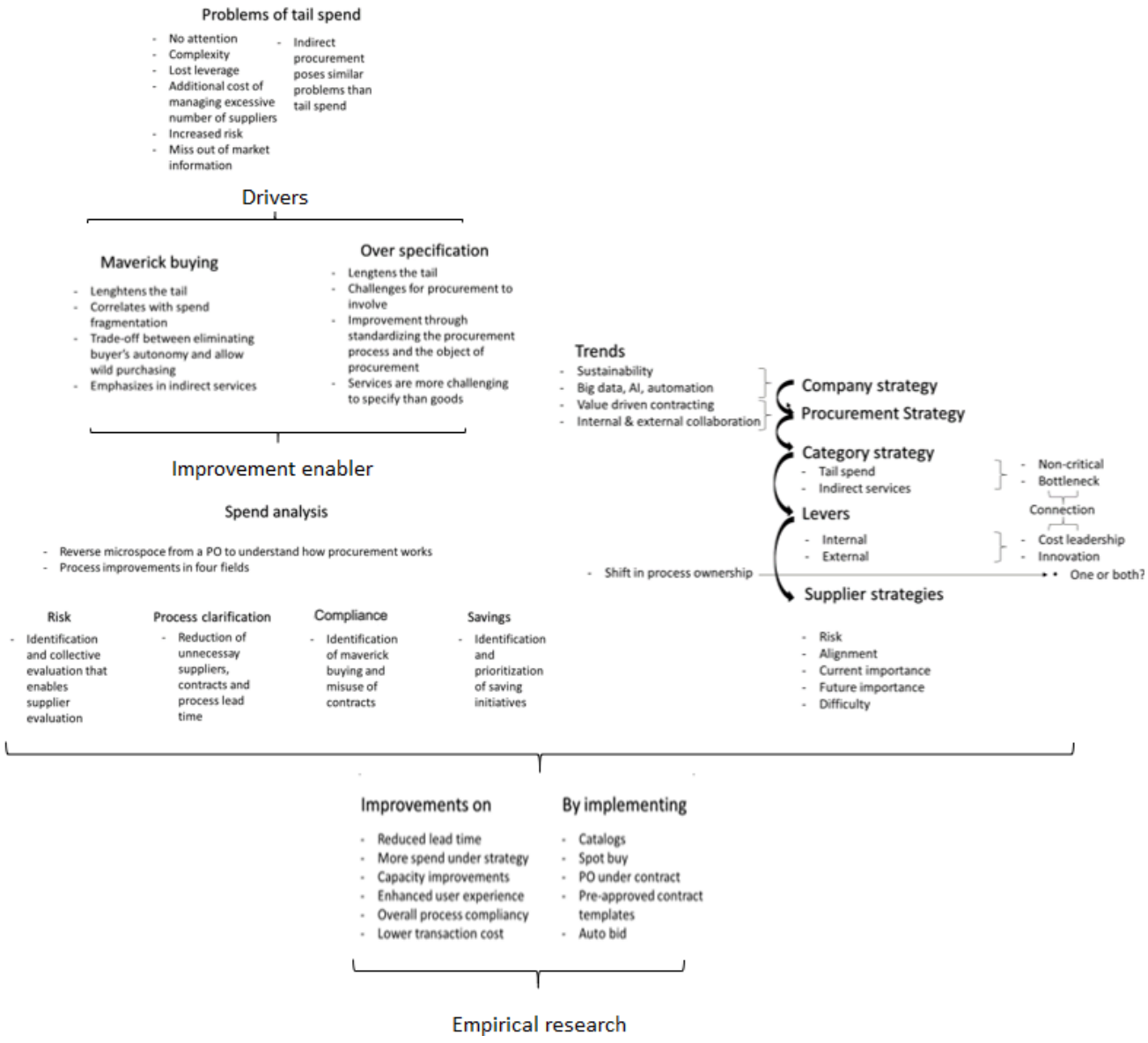

Figure 18 - Theoretical framework for tail spend management strategy development

Figure 18 summarizes the literature and connects it to the assessed approach to tail spend management. In chapter 5, the research findings are divided into strategic goals of tail spend management in the improvement areas and the tactics to tail spend management adapting and adjusting the five procedures in the principal company's professional services' context. Lastly, as process clarification and compliancy improvement were mentioned at the strategic goals of tail spend management, the research considers, is there a link between identifying and ranking risk and savings opportunities and managing the tail spend based on the supplier strategies applicable to tail spend suppliers in operational tail

spend procurement. Before presenting the research findings, the used methodology is discussed in the next chapter.

4 METHODOLOGY

4.1 Background of the case company and introduction of research topic

This thesis is an assignment for Telia Finland Oyj, which is Telia Company's Finnish affiliate (About the company). Telia Finland operates in the field of telecommunications and its revenue for the year 2018 was 15.512 M SEK, a little less than a fifth of Telia Company's total revenue (Financial overview). The study concentrates on a sourcing category called professional services. The category consists of a wide array of different indirect services from legal services to resource consultants and from training to recruitment services. In addition, small indirect services that lack clear assignment to another category fall under the category spend, making the arrangement challenging for complete spend consolidation.

Professional services -category was chosen to be the unit of analysis for this study since the category has the most fragmented spend within sourcing categories of Telia Finland. On the other hand, the category was in a need of development especially for the long tail's part, thus the subject for the thesis was based on a real-life problem. 6.3% of the category spend is divided between 92.4% of the suppliers.

The purpose of the thesis is to find out how the tail spend should be managed. The goal is to come up with a scalable strategy for long tail management. The long tail investigation level was set at the third level of the strategic hierarchy of Hesping and Schiele (2015), thus it needs to be aligned with both general procurement strategy (2nd level) and company strategy (1st level).

Regarding company strategy, one of the key missions Telia Finland has is the sustainability of its business. Their strategic goal is to cut aggressively CO2 emissions throughout the whole value chain, and the ultimate goal is to neutralize the value chain's CO2 emissions by the year 2030. (Pitkänen 2020) To give a reference, Telia Finland's value chain's CO2 emissions in the year 2019 were 250 000 tons (Vainio 2020), which is equivalent to approximately 1 400 fully booked flights from Finland to Thailand (Finnairin päästölaskuri; Finnairin laivasto).

The goal is meaningful for this thesis for two reasons. Firstly, out of all CO2 emissions in Telia Finland's value chain, 61% falls upon procurement's shoulders i.e. comes from purchased products and services (Pitkänen 2020). Secondly, the emissions are not

directly proportional to the spend; CO2 emissions have had an effect already at the sourcing stage for the large suppliers and the taken procedures have been directed to the largest suppliers as well (Pitkänen 2020; I1). Therefore, tail spend suppliers' proportion of emissions allegedly exceeds their proportion of total spend, and in order to reach the goal of neutralizing the CO2 emissions, emission reduction forms a significant objective of this thesis' tail spend strategy.

Tail spend strategy also needs to be aligned with Telia Finland's general procurement strategy to success. There has been a significant strategic change in Telia Finland's procurement within the last two years, and the new objectives, in a nutshell, are the followings:

- Value creation instead of cost savings
- Cooperation and balanced interdependency instead of continuous tendering
- Being a trusted advisor instead of compliance police
- Management of relationship instead of managing transactions
- Early involvement and horizontal communication instead of silo concentration
- Technology utilization to enable transparency and decisions based on reality
- Supplier hierarchy and prioritization.

The strategy aims to maximize the value, access to suppliers' innovations, and secure responsible supply. (Karling 2020.) The strategy goes closely together with the innovation strategy of Schiele et al. (2011), and the notion is paramount to avoid a mismatch between different strategies within the same purchasing category.

4.2 Research methods

Whilst there is relatively little research done around the theme of managing the procurement's tail spend, and the problem is relatively unfamiliar within the primary company as well, qualitative research was chosen as a research method. Qualitative research suits this thesis because it is typically exploratory and flexible, there is little knowledge about the research topic and the problems are unstructured. Qualitative research aims to reach a profound understanding and forming explanations and theories. (Ghauri & Gronhaug 2010.) Therefore, the qualitative approach outdoes quantitative in strategy development for this study.

From different qualitative approaches, the constructive approach was chosen to guide this thesis. To understand where constructive approach lies amongst different approaches,

it can be interpreted from a matrix, created by Neilimo & Näsi (1980) and complemented by Kasanen et al. (1993)

	Theoretical	Empirical
Descriptive	Conceptual approach	Nomothetical approach Action-oriented approach
Normative	Decision-oriented approach	Constructive approach

Figure 19 - Identified research approaches in business economics (adapted from Neilimo & Näsi 1980; Kasanen et al. 1993)

The difference between theoretical and empirical approach culminates in whether the research aims to generate a priori knowledge, that is evident without experimenting or generates knowledge through field or laboratory data collection. The difference between descriptive and normative research is divided according to if the research aims to describe or interpret "what or how" something is, or if the research systematically explores practical ways to solve a problem and recommend alternative solutions (Neilimo & Näsi 1980.) The research in this thesis can be positioned as normative research because it aims to practically explore the problems of tail spend and to develop a method to manage it. Also, the method by which data is collected refers to empirical research, thus the research poses characteristics of empirical and normative approach.

The action-oriented approach posits a close to constructive approach, and therefore it is important to draw a line between the two and clearly posit this research to be one of them. In both cases, a direct and pragmatic empirical connection between theory and practice play a major role. Both approaches require a thorough understanding of organizational processes in order for intended changes to work in practice. Moreover, both approaches presume the researcher as a change agent, a person that supports who supports

the organizational learning process. The important difference lies in the fact that the action research does not create any explicit managerial construction, whereas the constructive approach does. (Kasanen et al. 1993.) According to Lukka (2005), action research aims to solve a defined problem, whereas constructive one aims to deliver constructs. Because the problem of this thesis, how to manage the tail spend, is wide and continuous, and it most likely cannot be solved for good, it is more beneficial to deliver a method, or a construct, by which to manage the tail than aim to deliver an actually defined fix to the problem, that most likely does not exist.

Constructive research relies on problem-solving through the construction of models, diagrams, plans, and organizations. At its purest, the creation of an artificial language, such as computer language, is a construct. However, a concept of a construct contains many more opportunities, and therefore, constructive research is widely used in operations management. (Kasanen et al. 1993.)

It is also important to distinguish constructive research from consultancy. The difference is that consulting does not require the use of scientific methods. Also, one criterion to show that the method of construction is scientific, it is not only enough to show that certain managerial construction works in its context. Therefore, an essential part of constructive research is to tie the problem and solution to the accumulated theoretical background. (Kasanen et al. 1993.) Therefore, the theoretical narrative is built in this thesis in the second and third chapters and culminated in chapter 3.4.

An important notion about constructive research is that the usefulness of the solution is tested, and only after passing the practical test, the usefulness of the managerial construction can be validated. (Kasanen et al. 1993.) Solution's functionality in practice is one of four elements Lukka (2014) divides the constructive research. Other elements are 1) practical meaning of the problem and the solution, 3) connection to the previous theory and 4) theoretical contribution of the research.

Reflecting on the elements of this thesis, the problem is very pragmatic since an excessive number of suppliers within a category generates a lot of waste and the solution needs to be pragmatic in order to work. In order to connect the solution to the previous theory, the theoretic framework is built in chapter 3.4, and the framework is built through empirical research in order to contribute theoretically in the field that yet has not much theory in it.

Kasanen et al. (1993) propose constructive research to go through the following pattern:

1) Finding a practically relevant problem that has researching potential
2) Obtaining a general and comprehensive understanding of the topic
3) Innovating i.e. constructing a solution idea
4) Demonstrating that the solution works
5) Showing the theoretical connection and the solution concept's research contribution
6) Examine the scope of applicability of the solution

The practical relevancy of the problem is discussed already in the introduction. Apart from building a theoretical framework, the researcher was assigned to take a lead in one relatively big sourcing case and several small ones in order to thoroughly understand the topic, circumstances, and nuances of the field of investigation; instead of just developing a solution based on theory and interviews.

Innovating the solution emerged from the mixture of theory, empirical research, training inside the principal company, and management of different sourcing cases. Even though innovating partially emerged outside the scope of thesis limitation, the solution is justified both theoretically and empirically, and the quality of the research is evaluated further in chapter 4.5. The initial solution's justification took place on workshops, organized on 10.8.2020, and 28.10.2020. Even though the ultimate results will not fit in the chronological timeline of the thesis, simultaneous use of the emerged construct will be implemented during Q1, 2021 in two different sourcing categories, thus demonstrating that the solution works indicates positive signs. The results up to date are discussed in chapter 5.

Finally, the theoretical connection and contribution are discussed in chapter 6. Also, the scope of applicability is discussed in chapter 6, both, from the theoretical point of view and the principal company's point of view since geographical scalability was one goal of the assignment.

4.3 Data collection

For qualitative research, different methods can be used alternatively, parallelly, or by combining, depending on the case in hand and the disposable resources (Ghauri & Gronhaug 2010). Compared to quantitative research, it is typical that people are used as a method for data collection (Hirsjärvi et al. 1997). In this thesis as well, interviews are

used as the main method for data collection. Other used methods for data collection are internal materials and workshops. Internal materials were chosen to be used because they complement the interviews in order to describe the context in which the procurements occur. According to Kasanen et al. (1993) understanding the context and topic is an essential part of constructive research. On the other hand, this thesis' solutions have to be aligned with the strategy in the upper level, and bases for that alignments were gathered through interviews and internal material, and the actual alignment was confirmed in workshops.

According to Yin (2003), the strengths of interviews are that they are targeted and insightful. In other words, an interview allows a direct focus on the case study topic and it provides perceived causal inferences. The interviews are also seen as an efficient and practical means to collect information that is not available publicly (Eriksson & Kovalainen 2008). On the other hand, an interview might be biased if the questions are not constructed well or the responses can be biased. Also, there might arise inaccuracies due to poor recall and the interviewee might tell what the interviewer wants to hear. (Yin 2003.) The latest might accentuate in assignment theses since the interviewees might not want to take responsibility publicly over something that would be caused by them.

Eriksson and Kovalainen (2008) mention, that one problem of interviews is that different interviewees might understand the same things differently. To avoid that, semi-structured interviews are used. In semi-structured interviews, the set of questions is fully prepared before the interview and the same questions are asked from different people in the same order. Structured that way, the results are less biased and easier to analyze. The flipside of that is that inflexibility might turn the interview excessively rigid. (Patton 1987.)

According to Myers (2009) qualitative research improves as more people from different viewpoints get invited to the research process. So-called triangulation increases the validity and credibility of results as the knowledge, gathered from different sources, supports, and reinforces itself (Yin 2009). Patton (1987) lists four ways of triangulation:

- Data triangulation: the use of different sources
- Theory triangulation: different perspectives to the different data set
- Investigator triangulation: the use of different evaluators
- Methodological triangulation: the use of different methods

In this thesis, data triangulation is ensured by using different sources of data, i.e. interviews, internal and external materials, and workshops. Also, people from different parts and hierarchical levels of the procurement process were interviewed to obtain more sources but also to ensure theory triangulation. To further improve theoretical triangulation, perspectives for solution implementation capabilities were sought also from outside procurement, which also improves investigator triangulation as different types of evaluators are used. Methodological triangulation was also considered since not all the interviews were similar, but the methods and content of interviews developed as data was analyzed from previous rounds of interviews. The interviews and workshops are listed in table 3.

Table 3 - List of interviews and workshops

	Date	Interview round	Interviewee's title	Duration
I1	23.4. & 28.4.	1st	Category head	58 mins & 54 mins
I2	8.5.	1st	Category head	42 mins
I3	3.6.	1st	Senior sourcing manager	37 mins
I4	15.6.	Theme interview	Sourcing manager	58 mins
I5	16.6.	Theme interview	Senior sourcing specialist	1h 2 mins
I6	10.7.	2nd	Executive assistant	48 mins
I7	13.7.	2nd	Executive assistant	44 mins
I8	13.7.	2nd	Executive assistant	49 mins
I9	13.7.	2nd	Department coordinator	38 mins
WS1	10.8.	Workshop 1	Country Sourcing director, Senior Director, Category Head	58 mins
WS2	28.10.	Workshop 2	Senior Sourcing Specialist, Legal Counsel, Senior Sourcing Manager, Country Sourcing Director, Sourcing Manager, Executive Assistant, Senior Sourcing Development Manager, Senior Director	1h 32 mins
I10	28.10	3rd	Senior Director	30 min

As table 3 illustrates, only one round of interviews was not sufficient to find an answer to the research question. The first round of interviews was based on a strategic view of procurement and long tail perception within the interviewee's procurement category. The criterion for an interviewee was that they are in charge of a procurement category and that category has somehow problematic tail spend. An invitation for the interview was sent to six participants of which half could participate in the interview. The scrutiny

of data was replaced with internal material, for a researcher to gain thorough knowledge about the theme of the interview round.

After the first interview round, two theme interviews were made to complement the findings from the first interview round and to form a framework for the second interview round. The theme of the theme interviews differed from the first interview round; the focus was on finding out what generates the long tail, not on how the interviewees perceive it.

After the theme interviews, the second round of interviews was executed. In the second round, the criterion for interviewees was systematic. Based on spend analysis, a simple service that represents a typical case in long tail was selected. During the last year, four people had bought it through two different channels, thus they were all invited to an interview. The main goal of interviews was to find out how end-users perceive the purchasing process of long tail.

After the interviews, the initial solution and its applicability to further development were tested in the first workshop. After the solution's potential was verified, the second workshop was gathered in order to legitimate the approach, confirm the details and enable holistic conversation from different parts of the procurement process about which areas and methods to concentrate on when managing the tail spend.

The last interview, I10, was not a structured interview but more of an action point negotiation about how to start the implementation. By the tie of the interview, the interviewee was already started implementing the procedure, based on the first workshop to another sourcing category.

The semi-structured interviewing method was used for interviews I1-I3 and I6-I9. According to Yin (2009), one problem with semi-structured interviews is, that the interviewees might find it difficult to recover things in their minds in an interview situation. To avoid that, the set of questions for each interview was sent to interviewees beforehand. Also, the questions were written unambiguously to avoid misunderstandings.

Interviews I4 and I5 were conducted via theme interviews because their goal was to complement the first interview round and to form a suitable framework for the second round of interviews. After the interviews, workshops we held to assess the solution and design its implementation capabilities.

Interviews were repeated until the saturation point was achieved. Patton (1987) defines the saturation point to be achieved when new interviews bring zero marginal utility in the research. According to Yin (2009), reinforcing results should be achieved from two

or more sources for the main topics of investigation. Moreover, the evidence should show that there is an attempt to investigate relevant alternative explanations as well. In this thesis, alternative explanations are investigated, and they are discussed with interview results in chapter 5.1 and 5.2. Also, many other possible solutions were thought of before ending up with the solution, discussed in chapter 6.1.

4.4 Data analysis

In qualitative research, there is no clear formula or pattern by which to analyze the data. In other words, as long as enough evidence is presented and alternative solutions are thought of, the analysis depends relatively much on the style of the researcher (Yin 2009). Also, Hirsjärvi et al. (1997) argue, that there are no regularities for analysis, but the goal of the analysis is to use an analysis method that delivers the best solution to the research problem. Even though there are no strict regularities for analysis, the analysis is the key to the research and thus cannot be overlooked (Hirsjärvi et al. 1997).

Deductive and inductive reasoning are two well-known strategies for analysis. Deductive reasoning is based on the idea, that the existing theory is the primary source of information, and therefore, the researcher can form hypotheses from the investigated phenomena based on the existing knowledge. Inductive reasoning works the other way around, forming narratives based on an outcome of multiple, singularly perceived cases. (Hirsjärvi et al. 1997.)

In practice, neither deductive nor inductive reasoning is usually solely used, and clear separation might not be reasonable to do. Instead, parallel use of reasoning, abductive reasoning, is more common and it is used in this thesis as well; the theoretical framework is formed based on the existing literature (deductive reasoning) and its capabilities are investigated in empirical research (inductive reasoning). (Eriksson & Kovalainen, 2008.)

For data analysis, it is essential to define how interviews are interpreted through the theoretical framework. In chapter 3.4, the theoretical framework is chosen and assessed, and complemented by the existing literature.

As discussed in chapter 3.4, if the long tail should be managed and not completely outsourced, one way to manage it is the standardization of process, which consists of five procedures that increase procurement's performance in six areas. The relevance of the mentioned areas is investigated through interviews I1 to I9 and ranked in the second workshop. In other words, the interviews aim to address, which of the areas tail spend generates problems, and which areas should be developed through tail spend management.

Consequently, the procedures are adjusted to the framework that functions in the specific context of the tail spend that is investigated, and after modifications, their applicability is tested in the second workshop. Based on the information gotten from the research, the goal is to come up with a construct, i.e. a strategy or a process to manage the tail spend better.

When data was analyzed, the data was denoted by themes. The method is a structured way of raising the themes that describe the research problem from the data (Eskola & Suoranta 1998). Tuomi and Sarajärvi (2009) describe the denotation by themes by breaking down the qualitative data and search for alternative views on the theme and comparing their appearance in the data. According to Eskola and Suoranta (1998), the method is the recommended way to analyze pragmatic research problems and it requires interaction between theory and empirics to succeed.

According to Miles and Huberman (1994), denotation by themes is one way of reducing or compressing the data, which is a starting point of data analysis. The point of data reduction is to focus and simplify the data so that it can be turned into categories, themes, and formulas. The next step is to present the data, meaning, turn the organized data into a presentative way, for example to matrixes and figures to enable making conclusions, and in this case, business decisions.

4.5 Research quality

In qualitative research, the researcher needs to consider their solutions and they need to take a stand on coverage of the analysis and extent of the study. The researcher is the criteria of trustworthiness and the evaluation of research quality concerns the whole research process. (Eskola & Suoranta 1998.) Qualitative research is usually evaluated through validity and reliability (Tuomi & Sarajärvi 2009).

Construction validity is challenging in constructive research. It means, using measurement methods that are functional and diverse enough and confirming objective evaluation for data gathering. Different tactics consist of the use of various sources of information, verifying traceability of research process and research evidence i.e. chain of evidence, and evaluating research according to most important sources of information. (Yin 2009.) All the mentioned tactics are used for this thesis to increase construction validity: data is gathered from various sources; every interview is documented, and the quality of the research is evaluated also by the primary company.

Internal validity is closely connected to the analyzing stage of the research process. It is especially noteworthy in constructive research when the researcher tries to find and explain case-effect-relationships between different factors. Internal validity fails in the research process, if the researcher concludes wrongly a causality of two factors, for example, in a case that there is a third factor affecting it. For that reason, internal validity becomes problematic for constructive research in a wide field of research, because the researcher needs to conclude cause-effect-relationships without evidencing each singular event in the causality. To improve internal validity, the researcher can take alternative explanations into consideration and increase the consistency of conclusions. (Yin 2009.) In this study, alternative explanations were thoroughly considered throughout the researching process, and also many different solutions were presented before choosing the one described in chapter 6.1.

External validity considers the generalization of results. Compared to the quantitative statistical method, qualitative research is more difficult to generalize. Instead of statistical generalization and aiming to be a sample, the goal of qualitative research is to form or extend generalizable theoretical hypotheses (Yin 2009). By being a rather context-specific research topic, this thesis rather aims to form theoretically valid hypotheses than to be able to be repeated exactly the same way. Also, Tynjälä (1991) argues, that a researcher cannot properly estimate the transformability of the results in other contexts by deeply knowing only the context the study takes place.

Even though the results are not transformable between different contexts as is, the external validity is ensured by clearly separating, what information in the solution building has been customized for the primary company's needs. That way the reader can separate what is aimed to be generalized and what parts are customized.

The goal of minimizing the mistakes and the impact of preconceived attitudes or biases is called reliability. The core of reliability is that if another researcher would repeat

the study, the result and conclusion would be consistent with the ones presented in the original study. In general, reliability can be aimed to ensure by organizing the stages of the investigation to be as operational as possible, and by executing the research the way that could be repeated to come up with the same conclusions (Yin 2009). In this thesis, researching strategy formed when the field of research was studied, and once the topic was verified, the strategy was followed systematically, and general practices of constructive research have given it a clear guideline for proceeding. The results are presented in the next chapter.

5 RESULTS

The fifth chapter discusses the results of empirical research and contacts the results to the theoretical framework. In this chapter, the main division is made between strategic and tactical tail spend procurement, which form their own sub-chapters. The sub-chapters consists of three parts: the context, the results of the interviews, and the results of the second workshop.

The context aims to describe the principal company's procurement environment and boundary conditions for development. Results of the interviews are presented to cover the main topics of the theoretical framework and to indicate strength and challenges in current tail spend management. Results of the second workshop are highly solution-oriented, and they answer directly to the key of theoretical framework: how the improvement areas should be prioritized and what methods to use to improve tail spend management.

After discussing the strategic and tactical perspective of current tail spend management and expectations for the development, a guideline for tail spend strategy development is presented in the third sub-chapter. The sub-chapter assesses the propositions from the principal company's perspective, and paves the way for answering to the research question: *how the tail spend should be managed?*

5.1 Tail spend from strategic perspective

This chapter has three sub-chapters. In the first, the essential characteristics for tail spend management are covered from the principal company's strategy and procurement strategy and the tail spend is described to shed light to the context where the empirical research takes place. In the second sub-chapter, the interviewees' perception of tail spend and its drivers are discussed. In the third sub-chapter, the improvement areas for tail spend management strategic development are discussed and ranked based on the output of the second workshop.

5.1.1 Principal company's procurement strategy

According to Hesping and Schiele (2015), procurement strategy derives from company strategy. One of the principal company's most important strategic goals is to neutralize its value chain's CO2 emissions by the year 2030 (Pitkänen 2020). It was discussed in chapter 4.1, that the goal is meaningful for procurement and for this thesis because 61% of all CO2 emissions come from bought products and services, and tail spend suppliers

relatively have more emissions on average than the bigger suppliers (Pitkänen 2020; I1). The strategy was started by implementing a CO2-scoring system, that basis on a questionnaire, sent to the suppliers, and by its result suppliers' environmental maturity can be assessed. The CO2 score is also used as one of the criteria for a supplier selection, and tail spend strategy needs to align with emission reduction to support the goal on a higher strategic level.

Principal company's sourcing strategy's recent changes were presented at Logy Conference on the 6th February 2020 by Country Sourcing Director, and the following high-level goals were highlighted:

- Value creation instead of cost savings
- Cooperation and balanced interdependency instead of continuous tendering
- [Procurement's role of] being a trusted advisor instead of compliance police
- Management of relationship instead of managing transactions
- Early involvement and horizontal communication instead of silo concentration
- Technology utilization to enable transparency and decisions based on reality
- Supplier hierarchy and prioritization.

When comparing the company's and procurement's strategic goals to the trends, presented by Hoffmann et al. (2019), the following are identified:

- Sustainability, in relation to CO2 emission reduction
- Internal and external collaboration, in relation to horizontal communication
- Value-driven contracting, in relation to value creation
- Big data, AI, and process automation, in relation to technology utilization in procurement.

Apart from the mentioned trends, other procurement's strategic goals concentrate on supplier relationship management. When the principal company's procurement's strategic goals are reflected to cost leadership and innovation strategy division, the procurement strategy closely resembles innovations strategy, because improvements are sought from co-operation and process improvements rather than leveraging the price (Schiele et al. 2011; Karling 2020).

However, not all of the goals can directly be translated or repeated in the tail spend because of tail spends characteristics of being a group of numerous low-volume transactions from relatively unknown suppliers (Dadswell 2013). Horizontal communication is

very applicable to better manage the tail (I3), as well as the role of an advisor that was seen to be missing in the tail (I6-I9). However, managing the supplier relationship might not be applicable to tail spend suppliers because workload with tail spend is already huge and it needs to be reduced (I1) and in some categories, tail spend suppliers are not managed at all (I2). On the other hand, if many suppliers in tail spend were tiered under one or two strategic suppliers, relationship(s) with them could be managed.

In general, small suppliers are divided into two different categories in the principal company. The difference between the two, is that are they proactively contracted and managed to some extent, or are they purely transaction-based related low risk, low complexity, and low spend suppliers.

For automated suppliers, supplier management consists of simplified lifecycle management, performance management on a need basis, and risk management for maintaining their due diligence. For the smallest suppliers, sourcing managers' resources should not be assigned to relationship management other than maintaining due diligence.

The tail spend as an entity can be approached from two different angles. Approaching from top down, Telia Company's revenue for the year 2018 was 83.559 M SEK (Financial overview). The spend for the same time period was 65.886 M SEK, approximately 79% of the revenue. The same year, Professional Services category spend was 2.934 M SEK, approximately 4,5% of the total spend. Of the category spend, Telia Finland accounted in 2018, for 13 %, and in 2019, 10%. (Internal material.)

The category consists of a wide array of different indirect services from legal services to resource consultants and from training to recruitment services. In addition, small indirect services that lack clear assignment to another category fall under the category spend, making the arrangement challenging for complete spend consolidation. Furthermore, the professional services category spend is relatively decentralized, which fragments the spend (I2; Karjalainen et al. 2009).

In chapter 2.1, long tail was illustrated to distribute according to $Y = 1/X$. In figure 20, the Professional services category spend distribution by suppliers is illustrated and compared to $Y = 1/X$.

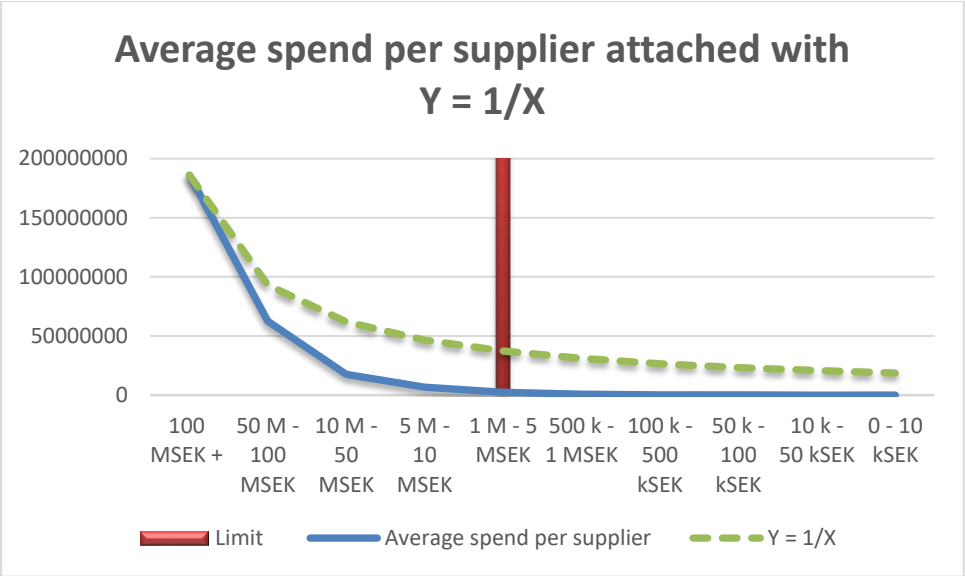

Figure 20 - Spend fragmentation in professional services -category

Figure 20 shows, that the category spend in question is much more fragmented than the illustration of Y = 1/X, discussed in chapter 2.1. Instead of 20-80-distribution, in the category, 6,3% of the suppliers account for 92,4% of spend. If that limit value is chosen to be a tail spend limit, all the suppliers with less than 1M SEK annual spend would be tail suppliers. The limit is illustrated with a red line in figure 16. If the limit is set to the mentioned point, the category's annual tail spend would be approximately 17,5 M SEK, just over 0,025 % of the total annual spend.

As the top-down view on tail spend makes it seem unimportant and not a very strategic group to allocate sourcing managers' resources to, viewing from bottom-up might make a difference. It is estimated in the principal company that procurement that fits the tail spend have an annual spend of 80 M SEK inside Telia Finland. When scaled in relation to revenue split (financial overview), Telia-wise it can be discussed about the annual spend of 430 M SEK. Even one percentage savings to that group would easily justify hiring a team to control the tail.

Tail spend's characteristics and drivers for spend fragmentation are discussed in the next chapter. The views are sought from category management level (5.1.2.1) and buyer lever (5.1.2.2).

5.1.2 Problems and drivers of tail spend

5.1.2.1 First round of interviews

The whole concept of tail spend originates from spend fragmentation because if the category spend was divided equally among a few suppliers, or everything would be made in-house, there would not be a problem of tail spend. One theme that was covered in the first round of interviews was the interviewee's perception of long tail. Three interviewees were interviewed from different hierarchical levels of the principal company, and the criterion to be interviewed was that the interviewee needs to be responsible of a sourcing category that has tail spend.

Three types of tail spend were identified. Interviewee (I1) is in charge of professional services, a category that contains "indirect services from legal to travel and from insurances to management consulting; everything that cannot be assigned to someone else". Professional services is the category, where the tail spend management strategy is primarily aimed. The interviewee perceived the long tail to consist of lots of different services, that are partially very specified, for example, training services. Bardell (2011) calls a small spend that consists of non-standard requirements and keeps on changing long tail, and long tail was identified in I1's category.

Interviewee (I2) highlighted the work he has done in order to reduce the number of suppliers in his category through improving compliance. However, he did not say that the supplier base should be completely minimized; there are always some needs that need to be fulfilled by tail suppliers. In that sense, the steady tail: something that will always be there, and it is hard to do anything about it (Bardell 2011), could be identified from the category.

In I3, the interviewee mentioned, that in her category, real estate and facility, apart from big suppliers there are thousands of small sites, that charge very low, frequent cost. That cost is for example a rental cost of a mast being positioned on the roof of an apartment building. In the category, approximately 1% of the suppliers accounted for 80% of the spend. The category's tail spend can be classified as short tail, a small, continuous spend that can be identified and classified (Bardell 2011).

In the first interview round, all three interviewees agreed on the problem of the tail spend. The following problems were identified:

- (I1) excessive workload and poor visibility to the spend
- (I2) costs related to contracting and risks

- (I3) Bureaucratical and heavy process to comply with.

According to interviewees, tail spend creates a lot of work compared to its value potential. The workload originates from contracting tail suppliers, maintaining them in the system, and having to bear the risk of not being able to monitor them as well as the head-end suppliers.

When interviewees were asked about the drivers for spend fragmentation, interviewee (I1) saw that spend fragments because of a huge variation of the needs and due to the fact that the stakeholders we not aware of approved suppliers and their selection. Interviewee (I2) argued that spend fragmentation originates from poor category planning: if a stakeholder fails to plan the following year's needs and suppliers to fulfill those needs, new suppliers are needed to be onboarded. Interviewee (I3) claimed that "historically, the business [stakeholders] have bought whatever they want, and in best cases, from their friends -- -- purchasing in silos have driven the lengthening of the tail, and all the sudden we end up having three suppliers for the exact same thing", concluding that the reason for spend fragmentation is that someone else does the procurement than the sourcing division.

In the theoretical framework, maverick buying and over specification were identified as drivers for spend fragmentation. I1's reason for spend fragmentation, unawareness of the approved suppliers and their selection, is a driver of maverick buying and complexity, and together they create a negative cycle: the more stakeholders or buyers are unaware of the approved suppliers, the more they onboard new supplier and the more complex the environment becomes, which creates more unawareness (Karjalainen et al. 2009).

I3's reason for spend fragmentation is intentional maverick buying. More specifically, in this case, it originates from a principal-agent-problem: a principal delegates a specific job to an agent, and cannot, without additional cost, monitor, whether the agent works compliantly or not (Rothkopf & Pibernik 2016).

I2 did not mention maverick buying to be a driver for spend fragmentation in his category, but he mentioned that increasing compliance leads to a better category performance by shortening the tail. In fact, by raising the compliance up to 90% interviewee's category's supplier base shrunk from 4 000 to 850 within two years. The interviewee did not mention, what was the initial compliance level. The interviewee estimated that raising the compliance to 95% other 200 to 250 suppliers could be dropped. Interviewee (I2) also pointed out, that he has different capabilities in managing compliance than I1 because he

manages the compliance of six buyers whereas I1 needs to manage the compliance of 4 000 buyers.

In other words, I1's category, professional services, is rather decentralized compared to I2's category. According to Karjalainen et al. (2009), maverick buying increases as the purchasing decentralizes, and in professional services half of the mentioned tail spend is so-called wild spend, spend from non-contracted suppliers or spend that comes from by-passing the purchasing process (Internal material; I4). The decentralized nature of procurement might explain why maverick buying was named as a fragmentation driver in the interviews I1 and I3.

The other driver for spend fragmentation is over specification. Interviewee (I1) did not directly state that spend fragments due to over specified need, but the variety of the needs is so enormous, that logistical complexity makes tail spend challenging to control. Interviewee (I2) did not see over specification as a problem. In contrary, he claimed that stakeholders do not specify the need enough for sourcing to effectively find the best supplier.

Because of the decentralized nature of especially tail spend procurement in professional services, the second round of interviews was conducted. In the second round, problems and drivers for fragmentation were asked from the stakeholders, that usually place the orders. The results are presented in the next chapter.

5.1.2.2 Second round of interviews

En route to the second interview round, two theme interviews were conducted. The reasons for spend fragmentation were also a theme in interviews I4 and I5. In I4, the interviewee said that wild invoices are received for two reasons. First, in ad hoc -needs when the approved supplier cannot be found to fulfill the sudden need. Second, in small purchases, when procurement does not want to make a contract, but the stakeholders still feel the need for buying.

In the interview I5, the interviewee argued that finding the right supplier should not be a problem, because the procurement is rather networked, and there are always people from whom to ask which supplier to use. However, at the same time, I1 named the reason that right suppliers could not be found to be one reason for spend fragmentation, there are either differing opinions between the interviewees or there is a gap in information flow

between procurement and stakeholders. To find out is there a gap, the second round of interviews was conducted.

Tail spend data was analyzed, and a suitable low-risk and low-value case was found. There were five purchases for the same service, purchased by four different people. All four participated in the interview, and the reason for non-compliant behavior was sought through questioning about the purchasing process. In the interview I4, it was revealed that purchasing can be done through the preferred and non-preferred system. If the non-preferred system is used, the whole procurement process can be bypassed, and procurement has afterward very low visibility to the spend and limited capabilities to control and manage the spend.

Another difference between the systems is, that if the preferred one is used, every purchasing requisition (PR) goes first through the sourcing support team in Vilnius, Lithuania. The purchasing process is more detailly discussed in chapters 5.2.1 and 5.2.2. However, the mention of two different ways to make a PO is relevant because, within the sample, both systems were used. According to Kapoor & Jagdale (2020) improving user experience is one goal of an improved tail spend management strategy, so it was important also to also investigate, how the end-users perceive those two different purchasing systems.

The interviewees (I6-I9) were not directly asked what problems tail spend pose, but how the process should be improved. The following suggestions were mentioned:

- Simplifying the process (I6)
- Speeding up the lead time of the process (I6, I9)
- Excluding sourcing support from the process (I7)
- Taking the approval level lower in the hierarchy and closer to the business (I8)
- Increasing stakeholders' authority to choose the supplier and the purchasing system (I9).

In other words, the interviewees saw the tail spend purchasing process too complex and slow, that there are unnecessary processing and approvals involved and that they do not have enough autonomy in the process. Because the preferred purchasing process was felt excessively heavy, by-passing the process was often felt to be the preferred way to buy.

None of the interviewees (I6-I9) felt that the over specified need would cause the fragmentation of spend. Conversely, every interviewee (I6-I9) mentioned that maverick

buying happens because the system for purchasing is not working. Different reasons for maverick buying are listed below:

- Unawareness of purchasing process (I9)
- Unwillingness to use the preferred purchasing system because different problems are foreseen (I7)
- Missing contracts or contracts with unfinished status in the system (I6)
- Excessively heavy process (I6, I7, I8 & I9)
- Urgent need for getting PO number (I9).

In summary, an excessively heavy purchasing process lengthens the lead time, increases the workload, and worsens the user experience. For tail spend process to work better, improvements are needed in those areas. Kapoor and Jagdale (2020) listed six areas where improvements are sought through active tail spend management. The areas were discussed in the second workshop and the results are presenter in the next chapter.

5.1.3 Improvement areas

In chapter 5.1.2.2 it is discussed that excessively heavy purchasing process generates waste in long tail purchases. Kapoor and Jagdale (2020) present that the key to manage the tail spend is process improvement and active tail spend management would bring benefits in six areas in the purchasing process. The areas are:

- Reduced lead time
- More spend under a strategy
- Capacity improvements
- Enhanced user experience
- Overall process compliance
- Lowered transaction cost.

In the second workshop, the improvement areas were presented, and the participants were asked to rank the areas according to their importance to be improved. However, some of the areas were modified and clarified to fit better to the principal company's context:

- More spend under a strategy was discussed as more spend to preferred purchasing system because directing tail spend to the preferred purchasing system is the only way sourcing can control the purchases
- Capacity improvement was discussed as sourcing's workload reduction
- Lower transaction cost was discussed as the ability to bundle demand better to preferred suppliers because onboarding a new supplier was identified as the main transaction cost driver for a transaction.

To ensure a holistic view and triangulation, participants from different roles and hierarchical levels of sourcing and from other divisions were invited to the workshop. The ranked priority of areas is illustrated in figure 21.

Ranking	Area of improvement	points (max. 42)
1	Reduced cycle time	32
2	Enhanced user experience	30
3	More spend to preferred purchasing system	29
4	Demand bundling to preferred suppliers	23
5	Capacity improvements	21
6	Overall process compliance	12

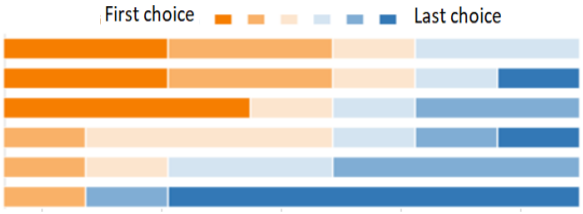

Figure 21 - Prioritization of improvement areas

In figure 21, the areas were given points based on how high they were ranked by each participant that answered the questionnaire. The area, that a participant felt most important to be improved, was given six points, the second one five, etc. Since seven participants returned their answers, the maximum points would be 42.

A clear division can be seen from the result. The tail spend purchasing process should be directed to the preferred purchasing system, the system should serve end-users interests and the process should work fast. The areas of improvement are not exclusionary: long lead time was seen as the main driver for user dissatisfaction in the second round of interviews, as well as a trigger for using the non-preferred purchasing system (I6-I9).

"Fast processing of tail spend is like oil in the machine. If it is not in place the whole procurement process crunches" (WS2).

On the other side of the division, reduction of workload i.e. capacity improvement was ranked relatively unimportant within the areas of improvement, even though it was

mentioned to be the main focus by I1. In the second workshop, not even one of the participated sourcing managers voted it to be the most important area to be improved. One reason for that might be that the reduction of workload was seen as the desired consequence of the improved process for tail spend management, not the cause for that.

"Even though the spend would not be huge, tail spend purchase might pose risks, and managing those risks requires attention. --- --- We should rather get rid of the stupid rules that generate waste for lengthening the lead time of the process and workload" (WS2).

The rules that govern tail spend management in the principal company are discussed in the next chapter. The rules are part of the tactical purchasing process, thus the process and the rules are presented in the context part of the next chapter to demonstrate, in which environment tail spend purchases occur.

5.2 Tail spend from tactical perspective

This chapter has three sub-chapters. In the first, the tactical purchasing framework is presented from tail spend management perspective to shed light on the environment where tail spend management takes place. In the second sub-chapter, challenges of tactical tail spend purchasing are discussed based on the output of the interviews. In the third sub-chapter, tactical methods to improve tail spend management, their applicability, and need for modification are discussed based on the output from the second workshop.

5.2.1 Principal company's procurement tactics

"One-size does not fit all"(I10).

According to Cox et al. (2005b) not all spend should be managed similarly. In principal company, the following framework for tactical procurement has been presented.

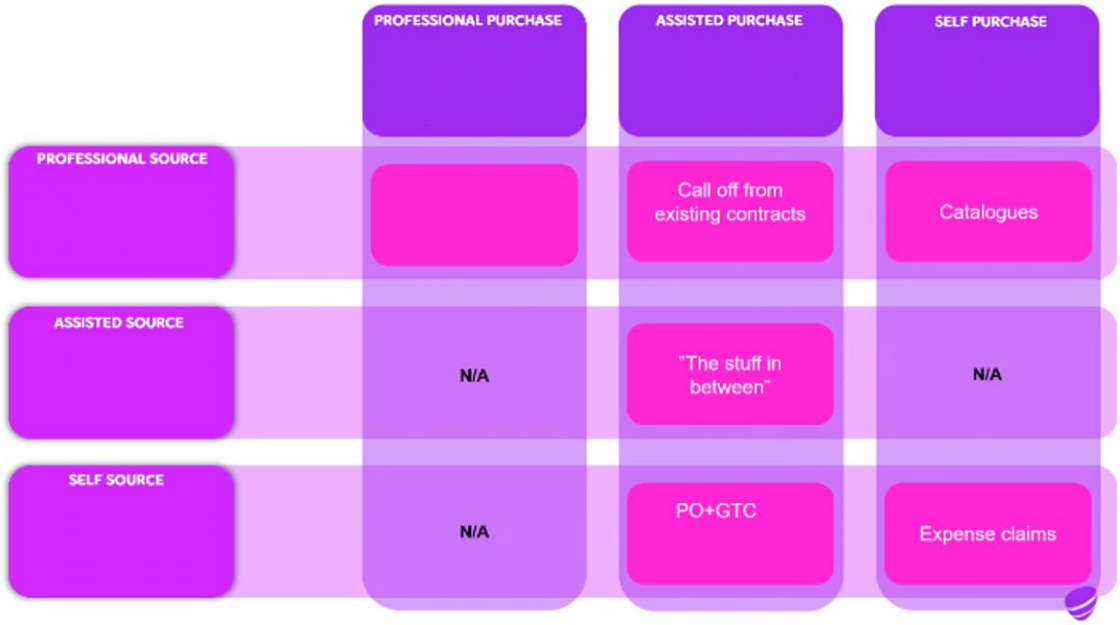

Figure 22 - Framework for tactical procurement

In figure 22, sourcing and purchasing are separated, and different roles of sourcing are presented in the y-axis and the role of purchasing in the x-axis. From a sourcing point of view, professional source means, that the whole sourcing activity is done by sourcing division, whereas in self-source, the stakeholders find the suppliers on their own. On the purchasing side, sourcing handles solely the purchases of only the most important and strategic purchases, for example building 5G infrastructure and everything related to it. The quadrant has a high-value spend that can be excluded from the long tail.

On the self-purchase quadrants, the procurement has no role in the purchasing activity. There are two options for purchasing: if the item or service is found from a catalog, the stakeholder purchases it through it, and if not, the stakeholder purchases the good or the service and claims the expenses. An example of the latter would be meeting provisions, and it can be seen as steady tail, something that will always be there, and it is very hard to do anything about it (Bardell 2011). For catalogs, procurement sources the supplier and provides an infrastructure to do easy purchases. Catalogs were seen as a very convenient way to do the purchases in interviews I6 to I9. Since catalogs are consist of small controlled purchases, the catalogs can be seen as short tail (Bardell 2011). Furthermore, since professional purchases are excluded from the tail spend, the long tail posits on the assisted purchase column. The tail spend division on the tactical framework is illustrated in figure 23.

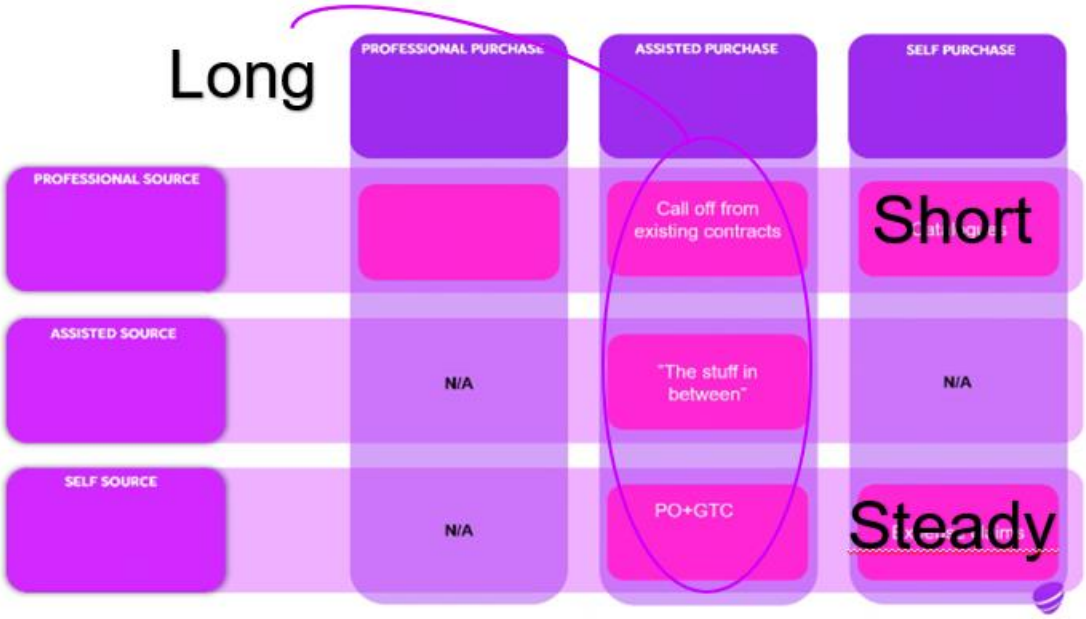

Figure 23 - Different types of tail spend on the tactical purchasing framework

Assisted purchase is a complicated group to be managed, and as the name states, in the category, purchases are somehow done together, by stakeholders and sourcing. More closely looked, if sourcing has sourced the supplier, assisted purchase is aimed to be a call-off from existing suppliers. An example would be a situation where a stakeholder has a need for online training courses, and procurement is involved to find out if there already exists a supplier that offers a course that fulfills the stakeholder's requirements. If the mentioned course is not found from any preferred supplier's selection, and the stakeholder had found a supplier by themselves, the method of PO + GTC (general terms and conditions) should be applied, as one of the procedures presented by Kapoor & Jagdale (2020).

However, the purchasing process does not allow any size of purchases to be self-sourced; all of the following points need to be covered:

- Purchase happens less than three times within 12 months
- Spend is less than 250 000 SEK
- No GDPR risk related to purchase
- Supplier has no access to Telia premises
- Supplier has clear due diligence -status
- Purchase is of one-time-nature
- The object of purchase is "off the shelf" nature.

Interviewee I1 mentions that doing a PO without a contract is problematic because if a supplier refers to their own terms in an offer, and primary company to their owns in the PO, it will become unclear, which ones apply to the deal. Therefore, strict boundary conditions are set to the procedure, and a contract is basically very often obligatory.

Interviewee I1 also mentions that a basic limit for a contract, if only spend is taken into account, is 1M SEK. Therefore, there remains a huge gap between self and professional source, the "inbetweeners", the group that is basically too small for a contract but too big for a PO + GTC. Interviewee I1 estimated, that regarding the workload, the inbetweeners are the most problematic group to be managed. He estimated that the quadrant has 10% of transactions, 20% of the spend, and 70% of the effort needed from procurement.

5.2.2 Tactical challenges in tail spend management

According to interviewee I2, the key to procurement management is to have an open discussion with stakeholders. At the same time, interviewee I2 mentioned that there is no time to manage especially small ad hoc needs, but the sourcing manager's time should be directed to more strategic purchases. If those purchases consist of small meeting provisions or a similar steady tail, it is more efficient to do as instructed in figure 23 and to claim the expenses after the purchase than to try to approach the local convenience store with a PO.

However, the majority of tail spend is something else than steady tail that can be left out of management. This chapter aims to describe the gaps between sourcing and purchasing i.e. the stakeholder when it comes to long tail purchases. The example does not represent every tail spend case, but it describes the gaps and how following the instructions in the purchasing process can prolongate the process and cause waste in it. The case is a description from the input of mostly the interview I6, case documentation, and the tactical instructions, presented in chapter 5.2.1, by which the process went down.

The interviewee I6 was asked to quickly place an order for a service that cost approximately 1 000 SEK. It was clear from whom this service should be bought because it had been bought many times from the same supplier, and the supplier was an approved supplier in the non-preferred purchasing system. Also, because of small spend and hasten time schedule, starting a sourcing process to fulfill the need would have not been clever.

Because the service is not something that could be purchased with a credit card nor there was a catalog for the service, the purchase became an assisted purchase. Interviewee I6 placed a PR as instructed through the preferred purchasing system and the PR reached sourcing support. The first thing sourcing support verified was that is there a contract for the supplier, i.e. would this case become a call-off from an approved supplier, and they could just accept the PR.

Unfortunately, the contract could not be found from the preferred sourcing system, thus the case was tried to posit in self source – assisted purchase case. If a stakeholder has independently sourced the supplier, the only obligatory threshold the supplier needs to fulfill is to have valid due diligence status. Based on an email conversation, the supplier had valid due diligence, and it had most likely because the supplier was an approved supplier in the non-preferred system (I8).

Once the supplier's background was concluded not to need verification and the supplier's contact information was possibly updated in the system, it was analyzed, that the preferred way to purchase this service is to send out PO + GTC, not to make a contract to this case only. Also, the preferred limit for contracting spend, 1M SEK annually, was a thousand times more than the spend for this case.

Therefore, it was analyzed whether the thresholds of the instructions enable making a PO. The case was analyzed as mentioned in chapter 5.2.1, based on seven thresholds. Spend was less than 1% of the limit value and there were no risks regarding this service seen. However, a sourcing support specialist was not sure whether this service was "of the shelf" -nature service, most likely because the language of the offer was Finnish and sourcing support is located in Lithuania.

Another threshold that was not passed concerned with the ordering frequency. The case was the third PR from the same supplier within the last 12 months, thus a PO cannot be made. Therefore, the case became an "inbetweener", positioning in center of figure 22. The whole cycle is illustrated in figure 24.

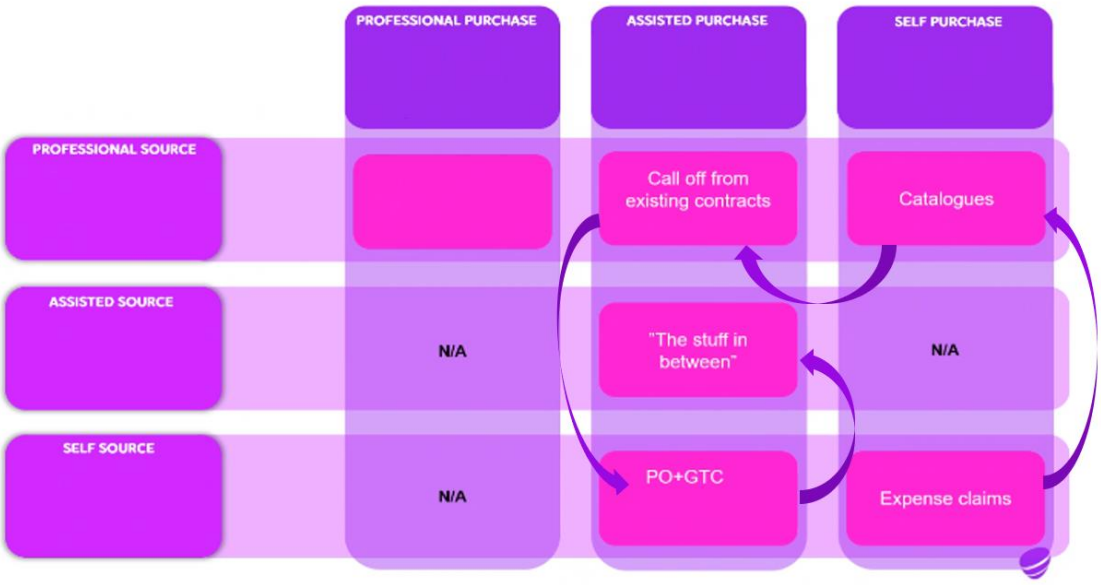

Figure 24 - An example case becoming an "inbetweener"

Figure 24 illustrates, how a small purchase that, from spend point of view could be bought with a credit card, ends up in the center quadrant when a catalog or a contract is not found, and the rules do not allow the use of a PO. According to instructions, the case would need an agreement to be approved, but sourcing does not want to make an agreement because it would cause a lot of work compared to the spend of the case.

On the other hand, there might be an agreement, but it was not uploaded to the preferred purchasing system. Because supplier's spend is relatively low the supplier was not assigned to any sourcing manager when the supplier was onboarded. The case eventually solved when a sourcing manager called an exception and approved the PR.

Interviewee (I6) described the case in the second round of interviews. Her perception can be seen from the quote:

"[When purchasing through the preferred system] the fact that sourcing is forced to be involved makes the purchasing process excessively heavy. Every PR needs a contract, of which I know nothing about, and I have decided not to familiarize myself with them. I only make the PR to Lithuania, and they need to be in contact with sourcing if, and when, the contract information is insufficient." (I6.)

In the second interview round, sourcing was often seen as a restricting part of the purchasing process for tail spend purchases. Especially the need for approvals was questioned; interviewee (I8) brought up a point that why different approvals from procurement are needed when the cost center has responsibility for their own budget. Also, interviewee (I7) wondered about the logic of approvals, concretizing the process with examples:

"I once placed a 2 000 SEK order for t-shirts. After my supervisor, who is part of the executive group in Finland, had approved, additional approval was needed to be sought from someone in Sweden. -- -- There are way too many approvals needed, and order of less than 100 000 SEK might need three approvals once it is approved [by sourcing support]in Lithuania."

Especially, sourcing support's involvement was felt like a frustrating factor in tail spend purchases. The frustration concretized when sourcing support questioned something that was very clear to the interviewees.

"We had been buying this one service for years from an approved supplier and our co-operation worked flawlessly. All the sudden sourcing support forced us to tender. Funny thing is that the supplier has a monopoly." (I7.)

Based on the example case and interviewees' views in the second round of interviews, the current tactical purchasing framework, governed by the rules for authority, are not working flawlessly. Also interviewee I1 saw that pushing a "one-size-fits-all" procurement process did not work properly. For managing the tail spend, interviewee I1 proposes detaching the long tail from category spend and to apply different procedures there than to head-end spend. The long tail should be made easily manageable by setting some minimum requirements there and by making the purchasing as easy as possible so that sourcing managers' time could be directed to head-end.

Kapoor and Jagdale (2020) present five methods to actively and efficiently manage the tail spend. Those methods, their applicability, and the need for modification were discussed in the second workshop, and the results are presented in the next chapter.

5.2.3 Improvement methods

Thus far, the empirical research has shown that the problem of the tail spend accumulates in long tail, and especially in the center quadrant of the tactical procurement framework. Kapoor and Jagdale (2020) presented five different ways to improve tail spend management, and different approaches based on those methods are gone through in this chapter. The different ways to reduce the central quadrant are illustrated in figure 25.

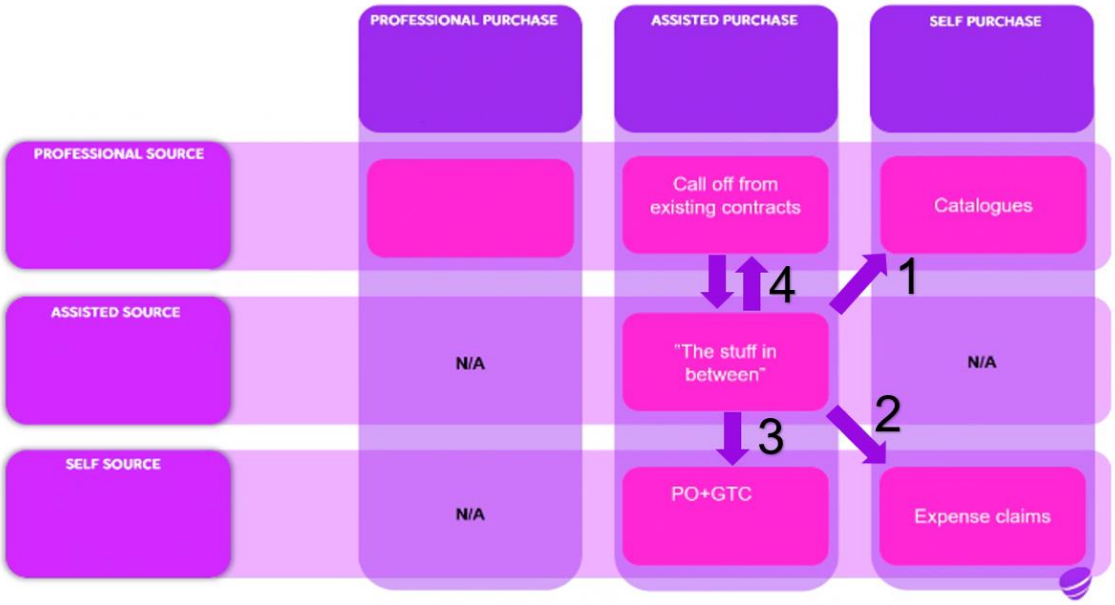

Figure 25 - Long tail management in tactical procurement framework

Figure 25 connects the methods for tail spend management to the principal company's tactical purchasing framework. The methods and the corresponding arrows are:

1) Directing spend to catalogs
2) Applying a very easy and approval free process to the smallest purchases
3) Increasing the use of PO in purchases when a delivery contract is not obligatory
4) Lighten the contracting process in cases where a delivery contract is obligatory

As the contracting gets easier, it would be as well easier to terminate the contracts that are not needed. Therefore, the fourth arrow is bidirectional. The fifth method, automating the tendering process does not illustratively move long tail from the center, but it makes the tendering process more efficient. The method is also discussed in this chapter in spite it is not illustrated in figure 25.

The first approach to manage the tail is to enable more catalogs to be used. Kapoor and Jagdale (2020) name two types of catalogs, hosted by the buying company and punchout catalog to suppliers' webstore. The idea of catalogs is to make an Amazon-like

experience for purchasing and enabling an automated payment process after the purchase. In principal company, a limit value of 1M SEK annual spend was used in pragmatical level as a decision criterion to make a catalog if the nature of purchasing was suitable for catalogs from other parts (I1).

In the second workshop, increasing the use of catalogs was one method that participants discussed. The participants were divided into two groups, and opinions between the groups about increasing the use of catalogs differed. Other group saw that there is a cost for building up and maintaining catalogs, so they should not be applied to every case.

The other group's approach was different. They did not only see that the use of catalogs should be increased but also, that catalogs could work as a communication channel. In that sense, catalogs would not even need to have a detailed good or service description nor the price; they could communicate which suppliers are the preferred ones for a certain type of purchases.

The second approach by Kapoor and Jagdale (2020) would be to set up a limit value under which sourcing does not involve in the purchasing process at all, and the PR would be automatically turned into a PO. Contrary to catalogs, these purchases would concern non-preferred suppliers and compliance review would take place quarterly. In figure 21, the approach is illustrated with the second arrow, since it would place the purchase to the quadrant where sourcing is not involved in sourcing or purchasing of the good or the service.

In the second workshop, both groups saw that letting PR's through automatically only based on the spend would be too risky. The most common concern was that if there is personal data involved, the spend does not really affect the risk of the purchase, and to mitigate that risk, allocating resources is justified. Both groups highlighted that some small purchases could be more efficiently processed but setting up a limit value only based on the spend is not sufficient.

In order to enable extremely efficient processing other group proposed a triage, made by a gatekeeper from sourcing. Other group then suggested that the triage could be eventually made by a robot, that would also process the PR right away or escalate it to another party to look closer.

The third method is to increase the use of PO purchasing instead of single purchase agreement when the agreement is not obligatory. The principal company's tactical procurement structure already enables the creation of PO both, for contracted and non-contracted suppliers.

However, there is a difference in term applicability between the cases when a PO is placed for a contracted or non-contracted supplier. For contracted suppliers, the applicable terms are pre-agreed in MA, and when a PO refers to the MA, it is clear, which terms are applicable. Conversely, a PO that refers to the principal company's terms against an offer that refers to supplier's terms might steer the purchase to *battle of forms* -situation, where term applicability is unclear. (I1; Internal material; Kilpailevat vakiosopimusehdot (battle of forms).)

In the second workshop, the other group argued that the limit value for non-contracted PO should be raised to 1M SEK unless the category plan advises otherwise. The group also mentioned that limits concerning the frequency of purchasing and the nature of purchase should be waived, and on the flipside of lightening the rules, the purchases should be managed and followed quarterly.

"PO + GTC creates an implied contract. It feels like it has been working, no cases have arisen, we should use it more" (WS2).

To mitigate the risk of battle of forms -situation, sourcing can ask the supplier to refer to the buyer's GTC already in the offer and place a PO against that offer. The other group in the workshop saw that PO+GTC might be too heavy for the smallest suppliers and proposed, that suppliers should be advised to extend the validity of their offer in order for the buying company to place several PO's against that and not having to make a contract.

In the second workshop, the fourth method, i.e. situations where contracting is obligatory, using pre-approved agreement templates was not seen as an area that would require improvements, because pre-approved templates were already frequently used. Instead, the use of standardized RFQ-forms [request for quotation -forms] was identified as a part of efficient processing. The idea was connected to the increased use of catalogs as following:

"One area where we could improve is a tendering process for approved suppliers. In my mind, the goal process would be as follows: the stakeholder inserts the need for the preferred purchasing system, and the system shows four suppliers from the catalogs to buy from. After that, the stakeholder would make some small modifications to the pre-populated RFQ -template and sends it to the suppliers. The suppliers would have two days to submit their standardized answers to the RFQ, after which they select with whom

to proceed and the system flips the RFQ into a PO. It could all be done in two days. (WS2.)

In the second workshop, it was also mentioned that standardized tendering could work also amongst non-contracted suppliers and enable faster processing between PR and PO. However, nearly not every service that is bought can be standardized accurately to enable efficient use of standardized RFQ, thus its applicability should be assessed category by category.

The last area whose applicability was discussed in the workshop was the use of brokers, i.e. outsourcing the tail spend activity from suitable parts. The other group unanimously disliked the brokers, because when using them, transparency disappears, and their use increases the costs. Brokers were also generally seen unwilling to take responsibility and add very little if no value to the procurement. However, one participant named a case where the use of broker worked flawlessly, and by using the broker, they were able to take advantage of the broker's economies of scale and to treat the broker as a strategic supplier, i.e. allocate resources to supplier relationship management.

Also, the use of a broker might be contradictory if spend is an important criterion in the purchase. If the brokers are paid a premium, a percentage fee based on the spend, the situation encourages the broker to contract the most expensive option.

Based on the conversation in the second workshop, no clear guidelines for using the brokers could be made but use should be assessed case-by-case. Similarly, the use of pre-populated standardized RFQ's and non-contracted PO's require a keen eye for procurement, some expertise outside the substantial expertise of the trade (WS2; I10). When the second workshop participants were asked whether the tail spend should be managed actively by someone or let to be self-managed, the first option was clearly preferred.

For tail spend management, proactive management was concluded to be concentrated in developing efficient processes, continuously improving those processes, being able to follow up the spend on high-level due to the lightened boundary conditions and being able to react to deviations. For reactive management, it was highlighted being able to follow the lead time of the PR's, so that their processing would not pend for too long.

Lastly, the fourth arrows illustrate a two-way flow from inbetweener to contracted supplier and vice versa. Even though the inbetweener quadrant is aimed to be minimized, the inbetweener quadrant will be maintained as a long tail pool, from where the suppliers can upgrade to become an approved supplier if their future importance increases, but as

well contracted suppliers can be downgraded to long tail pool if their future importance does not seem important enough.

The next chapter summarizes the result of empirical research and paves a road for tail spend management strategy development.

5.3 How to develop a tail spend strategy

This chapter summarizes the results from the empirical research through the theoretical framework. After reflecting the empirical research finding to the theoretical framework, the chapter aims to give guidelines on how to develop a tail spend strategy by concerning the research findings through the propositions presented in chapter 3.4. After propositions, the chapter summarizes the goals for proactive development and reactive management for tail spend.

The adjusted theoretical framework is illustrated in figure 26. Red notes illustrate the changes in the principal company's context.

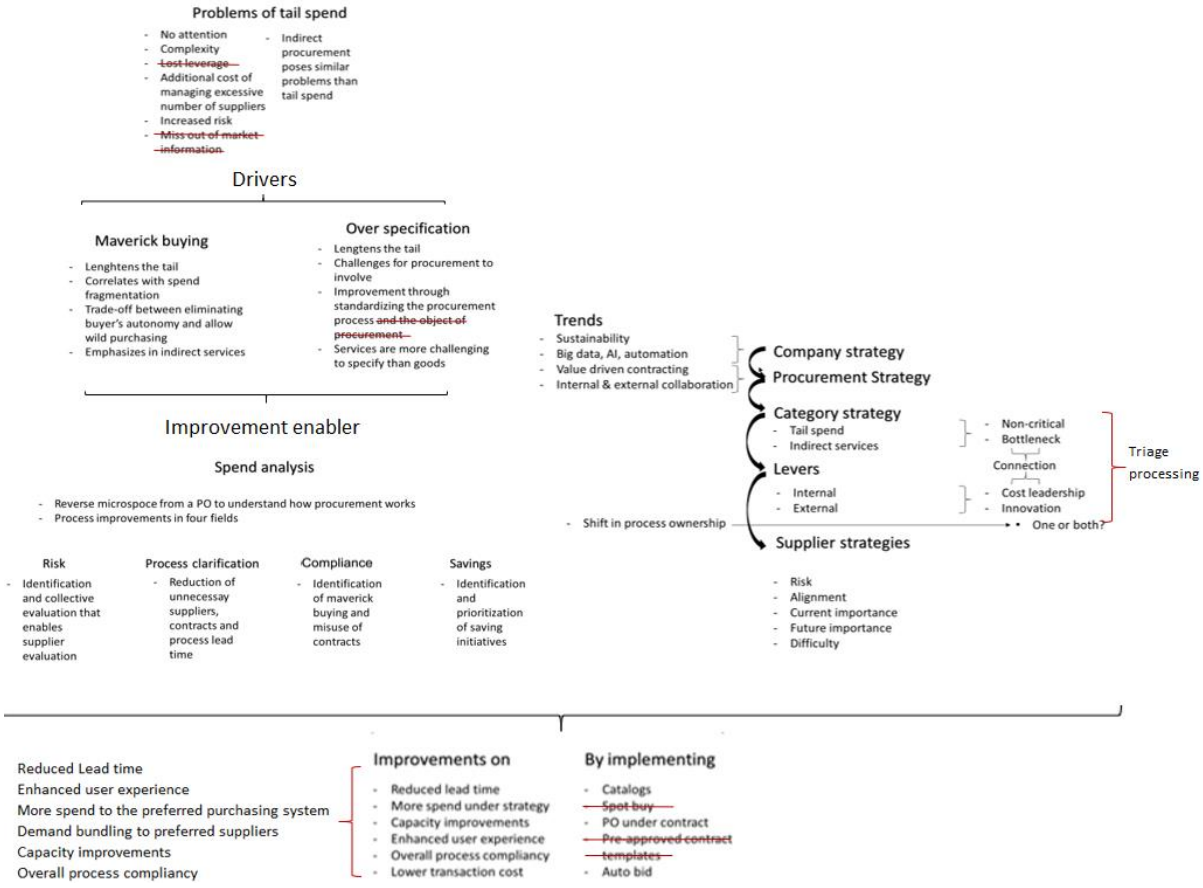

Figure 26 – Refined framework

Based on the interviews, similar problems were identified in tail spend than in literature. However, lost leverage and miss out from market information were not mentioned as problems of spend fragmentation. On the other hand, excessively heavy and long process was identified as a tail spend's problem in every interview.

Maverick buying was identified as a driver for fragmentation, but it was not concluded to be the most important factor to be controlled in order to improve tail spend management process. In fact, overall compliancy was ranked as the least important area to be improved in active tail spend management.

Over specification was not identified to drive spend fragmentation. Therefore, in efficient tail spend management process in the principal company, standardization of the object of purchasing is not highlighted to improve the tail spend management process. However, standardizing the process in order to develop an automated RFQ process was identified as a potential improvement, thus service specification needs to be somewhat standardized or simplified for that process to work.

For improvement enablers in proactive tail spend management development, process clarification outdoes compliance based on the need for development. Identification of savings potential can be better seen as identification of value potential, since the procurement strategy is rather value-driven than cost-saving driven. Both, comprehensive risk and value estimation are part of reactive tail spend management, which is discussed in chapter 6.1.

Four trends in figure 26 were identified in the principal company's procurement strategy and can be transmitted in the tail spend strategy. Conversely, strategic goals in relation to supplier relationship management will be excluded from the tail spend strategy. The trend's relation to the tail spend strategy is the following:

- Sustainability: tail spend strategy to align the principal company's sustainability goals and used as an alignment supplier evaluation criterion
- Big data, AI, automation: development towards automated RFQ process
- Value-driven contracting: seeking value instead of cost savings in tail spend management
- Internal and external collaboration: assigning a role to manage the tail and to enable communication between stakeholder's needs and expectation and sourcing's value drivers.

The shift in process ownership was also identified in the tactical framework of the principal company. A long tail manager's goal is not to re-centralize purchasing, but to clarify the purchasing between professional and self-purchase. The proposed way to do so is through triage processing, which is further discussed in chapter 6.1. The triage processing bases on quick supplier evaluation, which criterion is absorbed from supplier strategy evaluation in the theoretical framework.

The strategic improvement areas were modified to suit the principal company's context, and their prioritization is illustrated in figure 26. Three of the five methods for tail spend management improvement are proposed to be used to improve tactical tail spend management.

In chapter 3.4, seven propositions for tail spend management strategy development were identified. The first proposition is:

> *Proposition 1: before deciding how to manage the tail spend, it should be decided is the tail spend worth managing.*

According to empirical research, tail spend would be worth managing. Financially it was concluded in chapter 5.1, that even a percentage savings in tail spend would justify hiring a team for the principal company to actively manage the tail spend, let alone the opportunity cost that currently goes to inefficient tail spend management. From the tail spend, the long tail is an area that needs to be identified and managed; short and steady tail, as illustrated in this thesis, do not require similar attention.

The second proposition is:

Proposition 2: When designing a tail spend management strategy, the effect of process lead time should be investigated as a value driver

Fast lead time became the most important value driver when the areas of importance were ranked in the second workshop. Therefore, the tail spend management process is designed to enable quick processing whenever a quick process brings the most value to the purchase.

The third proposition is:

Proposition 3: when designing a tail spend strategy, it should be decided who is responsible of managing it and what is the strategic connection between head-end and tail spend strategy.

It was discussed in chapter 5.1.1 that the principal company's procurement strategy resembles the innovation strategy of Schiele et al. (2011). Conversely, fast processing was named as the most important value driver for tail spend management in chapter 5.2.3. Furthermore, supplier relationship management for tail spend suppliers was considered to be non-existent from sourcing managers' point of a view in chapter 5.1. Therefore, the purchasing structure leaves very little room for supplier relationship management, which is one lever behind innovation strategy (Schiele et al. 2011). Also, Ates et al. (2018) argue that the execution of two different strategies will not work efficiently by the same sourcing manager.

Therefore an additional role of long tail manager was proposed in the first and second workshops. In the second workshop, the role was not received unequivocally. It is justified to allocate resources to improve tail spend management, but not every participant that participated in the researching process mentioned, that a long tail manager should do so. Also, long tail manager's scope for management cannot be strictly set up, since not all small purchases need a similar amount of management and some are part of the bigger picture, which should not be involved by a person outside the particular sourcing management. It was also mentioned that long tail management should be made by a robot rather than a person.

The fourth proposition is:

Proposition 4: when designing how procurement managers' and specialists' time could be used better, it should be assessed, can the tail spend procurement be outsourced to some extent.

In general, brokers were not considered as the preferred option to go with, but their use worked in some cases. Also, the concept of a broker was unclear;

Is a broker used when a USB-drive is bought from webstore? (WS2)

To answer to third sub-question, no clear instruction can be given for contracting brokers. The decision of whether a broker should be contracted is case and situation-specific, but it is not a preferred solution for tail spend management.

The fifth proposition is:

Proposition 5: when designing how to improve compliance in tail spend management, the reasons why maverick buying occurs should be identified.

The first and second rounds of interviews revealed that maverick buying originates from lack of information, missing contract, and intentional maverick buying. Reducing maverick buying is not the main value driver for the tail spend management process but it will be systematically involved by a by-product of more efficient tail spend management. It can be expected that maverick buying due to lack of information would be reduced if a link or a role to support long tail management was assigned.

According to Karjalainen et al. (2009), maverick buying due to the missing contract should be approved when the nature of purchase is new or so small that the contract is not necessary. When a contracted supplier is used but the contract was not found from the purchasing system, thus a wild invoice is generated, the purchase is wild in the context of the principal company but not maverick. From tail spend management point of view, wild-but-not-maverick spend is sought to be eliminated by communicating better about the existence of contracts and reactive uploading the contracts to the preferred sourcing system when such cases appear.

Also, since PO against an offer was considered as a preferred way of purchasing in the second workshop, it can be expected that maverick buying would decrease in that sense. The root cause for the procedure is rather to enable a more efficient source-to-pay process than increase the overall compliance, but compliance would increase as a by-product.

Lastly, intentional maverick buying was identified, and the cause for it, an excessively heavy purchasing process, could be solved by enabling a much more efficient process. As one of the main goals of process improvement will be enhancing user experience, it can be expected that maverick buying due to poor user experience to the purchasing process will be decreased once the user experience is improved.

The sixth proposition is:

Proposition 6: when designing a tail spend management process, cost drivers at the transactional level should be identified and assessed, whether a reduction of such cost drivers would generate value to the tail spend management process.

Even though lead time reduction was ranked to be the most important value driver for tail spend management, a long lead time does not directly correlate with the transaction cost of the purchase. The stakeholder might have placed the PR well in advance and the PR is not constantly processed by sourcing, thus lead time does not directly correlate with costs of delay or labor.

On the other hand, interviewees I6 and I7 argued that long lead time is in indirect connection to the level of maverick buying. Interviewee I6 stated that the lead time is long due to the process that does not work, and for the same reason, people tend to by-pass the process. Interviewee I7 repeated the same point and highlighted that people avoid the preferred purchasing system because they foresee those problems.

If long lead time and poor user experience correlate with maverick buying, a cost of maverick buying can be assigned to the mentioned areas. However, if the preferred purchasing process is by-passed but the order is placed to the preferred supplier, costs related to spend fragmentation do not occur. Reciprocally, the cost for onboarding the new supplier in vain should be avoided, because it is a real cost driver in the process.

The seventh proposition is:

Proposition 7: In reactive tail spend management, it should be considered if the specification of the service could be compromised in order to bundle more demand to the preferred suppliers.

As the literature in chapter 2.3 indicates that over specification lengthens the tail and hampers directing volume to preferred suppliers, over specification of services did not arise as a theme in any part of the research process. On contrary, interviewee I2 mentioned that the stakeholders should specify the service description more to facilitate sourcing to find the right supplier better. Also, the ability to bundle the demand for preferred suppliers did not rank high on areas of improvement for tail spend management in the second workshop.

On the other hand, the main driver for value in tail spend management, the rapid process was identified to improve if the purchase of services could be standardized through

the use of a standardized RFQ-template. In that sense, there is potential to the standardization of the purchasing process, but only within the limits of the purchasing process i.e. if a standardized RFQ-template cannot be applied in the RFQ-process to enable a quick process, sourcing should not seek more value by dictating the service description excessively in principal company's context.

A standardized RFQ process is one of the goals of proactive development of the tail spend management. All the goals that emerged from the empirical research are listed below:

- Process development towards automated RFQ-process
- Enabling the visibility on what has been agreed with the suppliers in order to avoid spend leakages and onboarding new suppliers in vain
- Documenting and following up how the tail spend management develops
- Enabling division-wise communication and idea generation
- Developing sub-strategies for different division's tail spend management and planning the needs in advance because the same strategy does not scale to every sourcing category because of different needs and required substantial expertise
- Turning the long tail to short tail by increasing the use of catalogs
- Increasing trust towards sourcing by enhancing the end-user experience for tail purchases and securing quick processing when quick processing brings value
- Adjusting the tail spend strategy to align with the most important and suitable parts of the principal company's general strategy and overall procurement strategy
- Eventually making the role unnecessary and handing over the process to a robot.

Apart from proactive development, tail spend management consists of reactive management of the purchase flow. The goals of reactive tail spend management are the followings:

- Ensuring quick processing whenever it creates value
- Holistic assessment of visible and latent risk and alignment level of the supplier
- Holistic assessment of marginal value: how much value would sourcing's attention bring to the purchase
- Ensuring responsiveness to stakeholders to enhance user experience and to increase the use of preferred purchasing system
- Ensuring the right enough supplier selection and quick decision making
- Ensuring the avoidance of spend leakages and new supplier onboarding in vain

- Enabling sourcing managers to concentrate on the head end purchases and escalate when needed.

Based on the goals, a tactical approach to tail spend management is presented as a response to the research question. The approach is presented, and the research question is answered in the next chapter.

6 DISCUSSION AND CONCLUSIONS

6.1 Answering the research question

Chapter 5.3 summarizes the empirical research and lists the most important proactive and reactive goals in tail spend management strategy for the principal company's tail spend. This chapter answers the research question *"How the tail spend should be managed"*. The proposed solution is based on an execution, where the tail spend is managed by a specific role, long tail manager.

How to manage the tail spend is a construct that combines the research and the literature: the strategic and tactical outlines and desired outcomes are based on the results of the research and the steps of the process have a theoretical basis. For example, velocity is sought instead of extreme compliance because that has revealed to bring more value for tail spend management for the principal company, and the triage, by which the purchases are evaluated, bases originally on Kraljic's matrix, presented in chapter 3.2.

The used tail spend management process is a parallel process of reactive and proactive management. Reactive management covers the operational management of PR flow as it occurs based on the tail spend management approach. Proactive management aims to systematically improve the reactive management process, and eventually making reactive management unnecessary or handing it over to a robot. Reactive and proactive management are executed parallelly and therefore they communicate with each other: initiatives are systematically pulled from the reactive workflow for proactive development and proactive development continuously improves the reactive process. Furthermore, quarterly follow-ups are implemented to enable the evaluation of tail spend management.

In professional services category, the proposed role considers all the PR's that for one reason or another would end up becoming an inbetweener, as in the case example in chapter 5.2.2. The scope would then consist of the transaction flow where the following boundary conditions apply:

- Buying with credit a card would not be convenient
- A catalog is not in place
- A valid contract is not in place or the PO cannot be made against the contract
- PO cannot be directly made because of boundary conditions presented in chapter 5.2.1
    - The spend exceeds 250 000 SEK

  - There have already been two purchases from the supplier within a year
  - The purchase has GDPR risk
  - The supplier has access to Telia premises
  - Supplier's Due Diligence -status is unclear or unknown
  - Purchase is not a one-time-nature purchase
  - The object of the purchase is not "off-the-shelf"

Or

- the processing of PR has taken more than 48 hours

In order to follow up the tail spend it is proposed that all the cases with less spend than 1M SEK are tagged with the same nominator, regardless of who has processed them, in order to follow up quarterly on how the tail spend management has developed.

As the workload for long tail manager might become quickly unreasonable, it is not a purpose for the long tail manager to handle all the PR's but to conduct triage. The components for the triage were discussed in the interview I10, and it consists of two components:

- impact of risk: considering a collective evaluation of the number of risks, the probability to realization, and the impact if those risk would realize
- impact of competitiveness: considering value potential to be achieved if more resources are allocated to the purchase. The component can be further divided into the following areas:
  - spend
  - number of potential suppliers
  - the complexity of the object of the purchase
  - "marginal value": how much value could additional attention bring

The triage is illustrated in figure 27. The impact of risk increases upwards on the y-axis and the impact of competitiveness on the x-axis.

Figure 27 - Triage for long tail management (Mikko Kuusisto 2020)

According to figure 27, if the collective evaluation of risks is high, and no additional value seems to be able to be captured, long tail manager should seek to mitigate the risks and eventually end up into easy buy -quadrant. There are many ways to mitigate the risks, and they are most likely to be done together with the stakeholder.

The x-axis correlates with the time that should be used for the purchase. For example, if the purchase would be a low-risk 500 000 SEK purchase from a monopoly supplier whose contract would not be in place, i.e. an easy buy, long tail manager should use a dictating role of pushing the PO quickly through and by-passing the rules until a certain limit. Simultaneously, process compliance violations should be documented for the next quarter's review.

However, the supplier for the 500 000 SEK purchase might only be ostensibly a monopoly supplier, for example, because of asymmetrical information (Caniëls & Gelderman 2005). Therefore, long tail manager should automatically be in contact with the stakeholder with every case before moving ahead. Long tail manager should use a somewhat standardized questionnaire when approaching the stakeholders to confirm the nature of the purchase, and for example, came up with a better solution than the one that is the object of the purchase.

When a long tail manager is in contact with a stakeholder, the contact has two dimensions. Firstly, the particular purchase is aimed to posit on the matrix but also the

purchase is looked at from a wider perspective; is it part of a wider picture or just a single purchase to fulfill an acute need. If the purchase is something else than a unique as hoc purchase, it will be evaluated more closely with the stakeholder, based on the purchase's value potential. For example, the following questionnaire can be used:

- Is the proposed supplier the right one to bring value?
- Does the specification meet the value drivers? Is there something in the specification that does not bring value?
- Can the value be captured better by another solution or another supplier?
- If the supplier is not an approved one, could the purchase be directed to an approved supplier or should the new supplier replace the existing one, for instance?
- Would a light RFP process bring value to the purchase?

The contact point with the stakeholder does not only shed light on how the purchase should be processed but also enables transparent communication between divisions. Transparent communication is relevant especially in indirect services procurement. Because of the rather transactional nature of procurement (Lingreen et al. 2013), a similar sort of service could be executed in another way in a different division and communicating with long tail manager, different executions can be communicated and benchmarked. Also, by centralizing the control of the purchase, economies of scale can be better leveraged.

Handling of purchases is very case-specific, but in general, long tail manager should try to bundle the demand for preferred suppliers whenever it is efficient. In chapter 2.2, different reasons for maverick buying are listed. Based on the second round of interviews, lack of information, missing contracts, and intentional maverick buying were identified as reasons for maverick buying.

When a long tail manager exists as a link for sourcing, at least the waste from lack of information and the missing contract can be reduced. However as fast lead time and enhancing end-user experience were ranked high on the areas of improvement, and overall process compliance the last, long tail manager rather seeks value by quick processing that forcing the demand for preferred suppliers. Although, the two might not always be in conflict; if the stakeholder was unaware of the preferred supplier's selection, better terms, compliant purchase, and a faster process can be achieved.

Another key point for the contact with stakeholders is that the contact enables education of tail spend purchasing and existing solutions. As long tail managers proactive

incentives proceed, they can also be communicated through these contacts, and ideas for development can be documented. In general, long tail manager should encourage the stakeholders to be in touch with the sourcing as early as possible, because the earlier sourcing involves, the more value it can generate by involving (Cox et al. 2005a; Schiele 2007; Ellram & Tate 2015).

The procedure also supports the principal company's procurement strategy as one guideline for value capturing is "early involvement and horizontal communication instead of silo concentration" (Karling 2020). Also, the principal company's strategic goal of being a trusted advisor is aimed to be reached by systematically evaluating and mitigating the risk in the purchasing process as well as assisting stakeholders with supplier and agreement selection. The method is aligned with how Ellram and Tate (2015) describe how procurement can bring value to bottleneck purchases.

Risk mitigation is an important part of the process. Not only most visible risks are tackled but also hidden risks are systematically identified and controlled. For example, sustainability and CO2 emissions are discussed whenever those form a part of the purchase and there is value for mitigating those risks e.g. choosing an eco-friendlier supplier. There is a rule of thumb for paying a higher price for CO2-free services:

"Right now, if we were to compensate all of our value chain's CO2 emissions, it would cost us approximately 1% of our spend. We could afford it; compensating is not, however, a long-term solution. Our long-term solution is to reduce as much emissions as we can by 2030 and then compensate the remaining. En route, you should consider, what is the right price for a CO2-neutral solution. If you are currently paying more than 2%, you are probably paying too much. (Senior Director, 10.8.2020.)

It is also important that long tail manager communicates with the right sourcing manager if a particular sub-category can be identified. The clearer the sub-category management is and the more closely a sourcing manager manages the sub-category spend, the lower is the escalation trigger to the sourcing manager. However, if the sourcing manager manages the sub-category spend strictly, PR's should not end up to long tail manager in the first place.

Besides aligning with the sub-category strategy, if the purchase contains relatively much risk that cannot be easily mitigated and there is relatively much value to be captured, escalation is the preferred option to go with. Escalation does not necessarily mean

delegation to another sourcing manager, but the more tacit knowledge the sourcing manager has over the case and the more complex is the nature of the purchase, the more easily the cases should be delegated to sourcing managers.

Other parties for whom a long tail manager can delegate PR's are tactical sourcing managers and sourcing support. An example for a case delegation to tactical sourcing manager would be a case where value could be captured from a light RFP process, the object of the purchase is not local, the RFP process is not yet automated or the nature of sourcing does not enable automated RFP processing and long tail manager has no time to process the PR. An example of delegation to sourcing support would be a case from the easy buy quadrant when it is best to just push the PO through. In that case, the delegation could mean approval to by-pass some rules of the process.

Development of a standardized RFQ process, starting from standardized RFQ templates to its integration to PO and catalogs to communicate the supplier base is part of long tail managers proactive work to improve the process's efficiency. Meanwhile, the amount of waste in the RFP process can be mitigated by a standardized setup, after the PR has proved to belong to the seek value quadrant and the initial check-ups have been conducted with the stakeholders. The standardized setup could contain for example:

- Identifying the value drivers for the purchase
- Identifying the correct number of suppliers to participate in the RFP process
- Quickly interviewing the supplier's views on how the value could be captured and explaining to them the process
- Having suppliers to delivered offer for a somewhat standardized template in order to pre-agree the applicability of general terms and what exactly is being bought as well as being able to compare the offers
- If needed, inviting suppliers to present their proposals
- Selecting how to proceed and with whom
- Asking all needed information for supplier onboarding at once in case a new supplier is onboarded using a standardized template
- Whenever possible and effective, making a PO against the offer

PO against an offer shall be a preferred method also for easy buy quadrant whenever it is efficient and no particular DC is in place. Also, if the nature of purchasing is likely to be continuous, the supplier shall be encouraged to make an offer with extended validity, and the offer would be documented and communicated.

Communication with stakeholders is a part of the proactive management of tail spend. The key focus for proactive tail spend management is to squeeze the center quadrant of the tactical procurement framework, the inbetweeners, and move long tail to short tail. Also, visibility of what kinds of deals sourcing has made will be communicated to stakeholders, not only through quarterly reviews but also by explaining the relative content of the agreements in simple p-cards in the preferred purchasing systems.

" Whenever we make a contract, we should make a one-slider about it. --- In sourcing, we are really good at contracting but not so good at implementing them" (WS2.)

In conclusion, tail spend management is not an easy fix for the existing process but a combination of reactive and proactive work. The mentioned process is a starting point to answer the question of *how the tail spend should be managed*, and the tail spend management should be continuously improved in order for new technologies and more efficient tactics to be implemented and for the whole process to be automated in the future. Even though the process will most likely be fully automated in the future, it is better to start active tail spend management today, so that when automation capabilities are ready, the right process will be automated, not the process that would contain a lot of waste.

6.2 Managerial implications

Detailed managerial implications on how to manage the tail spend are directed to the principal company and discussed in chapter 6.1. This chapter shortly discusses which conclusions are more or less generalized and could be used in other contexts.

Taking into account that all the spend should not be managed similarly, neither should all the tail spend managed one way. For a company that designs tail spend management strategy, identifying the right scope is paramount. In this thesis, steady tail, short tail, and long tail were identified, and rather than aim to manage all the tail spend similarly, it was concluded that steady tail should be left as is, short tail is already in control but its purchasing can be improved through proactive management of tail spend, and long tail should be simultaneously aimed to control and turned into short tail for suitable parts.

Looking at a singular long tail purchase from only spend's perspective was not seem to be sufficient but O'Brien's (2018) criteria for supplier evaluation was adapted. In the triage, presented in chapter 5.3, supplier alignment and risk are assessed in the y-axis and

components based on current importance and difficulty in the x-axis of figure 22. Conducting a quick triage is a recommendable action to take to have a systematic way to manage the long tail and enable the right solutions to be applied. In addition, future importance is used as a differentiator between a long tail and a contracted supplier.

In chapter 3.2 it is discussed that tail spend most likely posits on non-critical and bottleneck quadrants in Kraljic's matrix. When the different types of tail spend were reflected through the principal company's tactical procurement framework, it was noticed that the short tail has more features of non-critical purchases and long tail more of bottleneck. In chapter 3.2.3 it was discussed that innovation strategy might suit better in managing the bottleneck quadrant than the cost leadership strategy. Even though the connection is not solid, the use of different levers in the management of a certain type of spend should be analyzed according to what type of spend is managed.

Lastly, faster lead time, enhanced user experience, and increased spend through the preferred purchasing system were ranked to be the most important strategic outcomes of tail spend management thus the outcome of the triage also supports those goals. If the goals for tail spend management vary, the evaluation outcomes can be adjusted. The key to having the tail spend under management is to have a tool through which to manage the reactive flow of requests and a proactive strategy to make process improvements. By assessing the tail spend of a company by answering the same questions this thesis has answered for the principal company's part, a tail spend management strategy can be established and the tail can be tamed.

6.3 Theoretical contribution

There is a lot of research done on procurement management. However, the literature tends to concentrate on direct spend instead of indirect (Cox et al. 2005b; Pandit & Marmanis 2008; Jayaram & Curkovic 2018). Furthermore, when literature about the long tail, a small, non-controlled spend with often changing needs (Bardell 2011), was sought, no academic publication was found to govern how it should be managed. According to Connaughton (2020), the reason why tail spend management has not been researched might be because the trend is only rising, and the technology is beginning to be mature enough to enable tail spend management.

In addition to identifying the literature gap, this research contributes to it by constructing a way to avoid waste and capture value by managing the tail spend. A new pro-

cess was created by first identifying what problematic areas there are in tail spend purchases, then reflecting those to the principal company's purchasing process and its limitations, and lastly, it was concluded how it could be done more efficiently and what limitations should be altered.

In addition to tail spend management process to fill the literature gap, the process of creating the construct provides an additional contribution to theory because the research of such process development does not exist. A similar method could be considered when developing tail spend management process to different procurement structure or different industries where long tail's content might differ from the principal company's long tail.

Overall, this research provides theoretical perspectives to tail spend management. If the drivers of spend fragmentation are validated in different companies and industries, and the framework's capabilities would be tested there, this thesis' outcome could be used as a basis of tail spend management.

6.4 Limitation and future research suggestions

This research has clear limitations as it represents a single case study in one case company. The developed process is customized to align with the procurement structure of the principal company and to question some of those structures. Therefore, there are limitations if the process was directly moved to another company's procurement structure.

Meanwhile many different aspects were taken into account when designing a tail spend management approach, only one example case was considered thoroughly. Even though the case was selected to represent an example of how the management of a PR can work poorly, without the ability to blame anyone for it, it cannot represent all the tail spend PRs, not even the long tail PRs. Limiting a case example to one case might give a worse signal about the maturity of tail spend management than it is in reality. However, a deep drill analysis would not be possible to conduct with every tail spend case there has historically been in the category's purchases and it would not likely even changed the outcome.

When scaling the solution to different categories than the two where the pilot is started, the nature of the tail spend needs to be considered if it has an effect on the outcomes of the triage. When scaling to other companies, not only the structure of procurement and nature of tail spend need to be considered but also the procurement function's maturity level; if the head-end spend is not in control, it is not clever to start from the tail.

For future research suggestions, it could be interesting to investigate what parameters are needed to be changed if a similar tail spend management approach is implemented in different procurement structures or different industries. Also, investigating how the value capturing can be measured from managing the tail spend as well as how the tail spend management can be handled to a computer in near future are important fields of investigation.

REFERENCES

About the company. TeliaCompany <https://www.teliacompany.com/en/about-the-company/>, retrieved 13.5.2019

Akkermans, Henk – van Oppen, Willem – Wynstra, Finn – Voss, Chris (2019) Contracting outsourced services with collaborative key performance indicators. *Journal of Operations Management.* Vol. 65 (1) pp. 22-47.

Anderson, Chris (2007) *Long Tail.* (original The Long Tail – Why the Future Is Selling Less of More 2006, translation Mia Poletto Andersson) Bonnier Fakta, Stockholm.

Angeles, R. – Nath, R. (2007) Business-to-business e-procurement: success factors and challenges to implementation. *Supply Chain Management: An International Journal,* Vol. 12 (2) pp. 104–115.

Ates, Melek – Wynstra, Finn – van Raaij, Erik (2015) An exploratory analysis of the relationship between purchase category strategies and supply base structure. *Journal of Purchasing & Supply Management*. Vol. 21 pp. 204-219.

Ateş, Malek, Akin – van Raaij, Erik, M. – Wynstra, Finn (2018) The impact of purchasing strategy-structure (mis)fit on purchasing innovation performance. *Journal of Purchasing and Supply Management,* Vol. 24 (1) pp. 68–82.

Baud-Lavigne, Bertrand – Agard, Bruno – Penz, Bernard (2012) Mutual impact of product standardization and supply chain design. *Journal of Production economies,* Vol 135 (1) pp. 50–60.

Bardell, Matthew (2011) Tail Spend Management < https://www.gep.com/webcasts/tail-spend-management >, retrieved 13.10.2020

Brynjolfsson, Erik – Hu, Yu – Smith, Michael D. (2006) From Niches to Riches: Anatomy of the Long Tail. *MIT Sloan Management Review,* Vol. 47 (4) pp. 67–71.

Brynjolfsson, Erik – Hu, Yu – Simester, Duncan (2011) Goodbye Pareto Principal, Hello Long Tail: The Effect of Search Costs on the Concentration of Product Sales. *Management Science,* Vol. 57 (8) pp. 1373–1383.

Caniëls, Marjolein C. J. – Gelderman, Cees J. (2005) Purchasing strategies in the Kraljic matrix – A power and dependence perspective. *Journal of Purchasing and Supply Management,* Vol. 11 (2) pp.141–155.

Carlsson, Magnus (2019) *Strategic sourcing and category management: lessons learned from Ikea.* 2. P. Kogan Page Ltd, New York.

Clouse, Mark – Blascovich, John – Rizzon, Enrico (2016) What good looks like, Kearney. < https://www.kearney.com/procurement/rosma/full-report >, retrieved 21.10.2020.

Connaughton, Patrick (2020) The Future of Sourcing and Procurement Applications. *Gartner*.

Cox, A., Chicksand, D. & Ireland, P. (2005a) Overcoming demand management problems: the scope for improving reactive and proactive supply management in the uk health service. *Journal of public procurement,* Vol. 5 (1) pp. 1–22

Cox, Andrew – Chiksand, Daniel – Ireland, Paul – Davies, Tony (2005b) Sourcing Indirect Spend: A Survey of Current Internal and External Strategies for Non-Revenue-Generating Goods and Services. *Journal of Supply Chain Management,* Vol. 41 (2) pp. 39–51.

Dadswell, Simon (2013) *Seven Ways to Control Costs by Reining in 'Tail Spend'.* The Controller's report. Institute of Finance & Management. New York.

Disteldorf, Hendrik – Fehre, Tobias – Aade, Guttorm – Piccareta, Mike (2014) Unlocking the Value of Tail Spend. *Supply Chain Management Review*, Vol. 18 (2) pp. 46–47.

Elberse, Anita (2008) Should You Invest in the Long Tail? *Harvard Business Review*, Vol. 86 (7,8) s.88-96.

Ellram, Lisa – Tate, Wendy (2015) Redefining supply management's contribution in services sourcing. Journal of Purchasing & Supply Management. Vol. 21 (1) pp. 64-78.

Eriksson, Päivi – Kovalainen Anne (2016) *Qualitative methods in business research.* 2nd ed. SAGE, London.

Eskola, J. – Suoranta, J. (1998) *Johdatus laadulliseen tutkimukseen*. Vastapaino, Tampere.

Financial overview. Telia Company. < https://www.teliacompany.com/en/investors/financial-overview/ >, retrieved 26.10.2020.

Finnairin laivasto. Finnair. < https://www.finnair.com/fi/fi/flights/fleet >, retrieved 28.5.2020.

Finnairin päästölaskuri. Finnair. < https://www.finnair.com/fi/fi/emissions-calculator >, retrieved 28.5.2020.

Gartner (2019) Procurements 2020: Your action plan to prepare now

Gelderman, C. J. – van Weele, A. J. (2005) Purchasing portfolio models: a critique and update. *Journal of Supply Chain Management,* Vol. 41 (3) pp. 19–28.

Ghauri, P. – Gronhaug, K. (2010) *Research Methods in Business Studies*, 4th ed. Financial Times Prentice Hall. Essex.

Giunipero, Larry – Bittner, Samantha - Shanks, Ilana – Cho, Mee (2019) Analysing the sourcing literature: Over two decades of research. *Journal of Purchasing and Supply Management*. Vol. 25 pp. 1-14.

Gupta, Saurabh – Krishnan, V. (1999) Integrated component and supplier selection for a product family. *Production and Operations Management,* Vol. 8 (2) pp. 163–182.

Hadeler, Bernhard – Evans, John (1994) Supply strategy: Capturing the value. *Industrial Management,* Vol. 36 (4) pp. 3–4.

Hallikas, Jukka – Kulha, Tuukka – Lintukangas, Katrina (2013) The characteristics of service buying in the business-to-business sector. *International Journal of procurement Management,* Vol. 6 (3) pp. 280–296.

Hesping, Frank, Henrik – Schiele, Holger (2015) Purchasing strategy development: A multilevel review. *Journal of Purchasing and Supply Management*, Vol. 9 (4) pp. 138-150.

Hesping, Frank, Henrik – Schiele, Holger (2016a) Matching tactical sourcing levers with the Kraljič matrix: Empirical evidence on purchasing portfolios. *International Journal of Production Economics,* Vol. 177 (1) pp. 101–117.

Hesping, F. – Schiele, H. (2016b) Sourcing tactics to achieve cost savings: developing a formative method of measurement, *International Journal of Procurement Management,* Vol. 21.

Hingorani, Naresh (2010) Domino effect. *Risk Management,* Vol. 57 (3) pp. 56–62.

Hirsjärvi, S. – Remes, P. – Sajavaara, P. (1997) *Tutki ja kirjoita*. Kirjayhtymä, Tampere.

Hoffmann, Erik – Maucher, Daniel – Piesker, Sabrina – Richter, Phillip (2011) *Ways Out of the Working Capital Trap: empowering self-financing growth through modern supply management.* 1st ed. Springer-Verlag, Berlin.

Hoffmann, Erik – Brunner, Joël Henri – Holschbach, Elmar (2019) Research in business service purchasing: current status and directions for the future. *Management Review Quarterly* pp. 1–40.

Hughes, Jonathan – Ertel, Danny (2016) The reinvention of procurement. *Supply Chain Management Review,* Vol. 20 (3) pp.18–23.

Jayaram, Jayanth – Curkovic, Sime (2018) The right way to procure indirect materials & services. *Supply Chain Management Review*, Vol. 22 (2) s. 14-23.

Kacik, Alex (2018) Q&A: Chris Holt: 'I think one very important mental construct for your readers is that we're a marketplace'. *Modern Healthcare,* Vol. 48 (30) pp. 32.

Kapoor, Prince – Jagdale, Amol (2020) How to stop chasing your tail and get ahead of it. GEP. Webcast 10.9.2020.

Karjalainen, K. – Kemppainen, K. – Van Raaij, E. M. (2009) Non-compliant work behavior in purchasing: An exploration of reasons behind maverick buying. *Journal of business ethics,* Vol. 85 (2) pp. 245–261.

Karjalainen, K. – Van Raaij, E. (2011) An empirical test of contributing factors to different forms of maverick buying. *Journal of Purchasing and Supply Management,* Vol. 17 (3) pp. 185–197.

Karling, Sami (2020) Telia Finland's change in procurement strategy. Logy Conference, 6.2.2020.

Karnicar Šenk, Mateja – Roblek, Matjaž (2019) The impact of the standardization of the ndp process on its efficiency. *Journal of Business Economics and Management* Vol. 20 (1) pp. 149-167.

Kasanen, E. – Lukka, K. – Siitonen, A. (1993) The constructive approach in management accounting research, Journal of Management Accounting Research, Vol. 5, 243–264.

Khalaf, Radwan E. H. – Agard, Bruno – Penz, Bernard (2011) Module selection and Supply Chain Optimization for Customized Product Families Using Redundancy and Standardization. *IEEE Transactions on Automation Science and Engineering,* Vol. 8 (1) pp. 118–129.

Kilpailevat vakiosopimusehdot (battle of forms). Minilex. < https://www.minilex.fi/a/kilpailevat-vakiosopimusehdot-battle-of-the-forms >, retrieved 31.10.2020

Kraljic, Peter (1983) Purchasing must become supply management. *Harvard Business Review,* Vol. 61 pp. 109–117.

Kulp, S. L. – Randall, T. – Brandyberry, G. – Potts, K. (2006) Using organizational control mechanisms to enhance procurement efficiency: how glaxosmithkline improved the effectiveness of e-procurement. *Interfaces,* Vol. 36 (3) pp. 209–219.

Limberakis, Constantine G. (2012) Spend Analysis: Lesson From. *Supply Chain Management Review,* Vol 16 (2) pp. 10–19.

Lingreen, Adam – Vanhamme, Joëlle – Van Raaij, Erik, M. – Johnston, Wesley, J. (2013) Go Configurate: The Mix of Purchasing Practices to Choose for Your Supply Base. *California Management Review,* Vol. 55 (2) pp.72–96.

Lonsdale, Chris – Hoque, Kim – Kirkpatrick, Ian – Sanderson, Joe (2017) Knowing the price of everything? Exploring the impact of increased procurement professional involvement on management consultancy purchasing. *Industrial Marketing Management.* Vol. 65 pp. 157-167.

Lukka, K. (2005) Approaches to case research in management accounting: The nature of empirical intervention and theory linkage, in Jönsson, S. & J. Mouritsen (eds.), *Accounting in Scandinavia – The Northern lights*. Liber & Copenhagen Business School Press, Copenhagen, pp. 375–399.

Lukka, K. (2014) Konstruktiivinen tutkimusote, retrieved 10.10.2020.

Miles, M. B. – Huberman, A. M. (1994) *Qualitative data analysis: An expanded sourcebook* 2nd ed. Sage, Thousand Oaks

Molin, Jonas – Åge, Lars-Johan (2017) Business streamlining – an integrated model of service sourcing. *Journal of Business & Industrial Marketing.* Vol 32 (2) pp. 194-205.

Myers, M. D. (2009) *Qualitative Research in Business & Management*. SAGE Publications Ltd, London.

Nabhani, Farhad – Uhl, Christian Josef – Kauf, Florian – Shokri, Alireza (2018) Purchasing manages and optimizes existing product variance. *Journal of Manufacturing Technology Management,* Vol. 29 (3) pp. 430–448.

Nellore, Rajesh – Söderquist, Klas (2000) Portfolio approaches to procurement: Analysing the missing link to specifications. *Long Range Planning,* Vol. 33 (2) pp. 245–267

Neilimo, Kari & Näsi, Juha (1980) Nomoteettinen tutkimusote ja suomalaisen yrityksen taloustiede: Tutkimus positivismin soveltamisesta. University of Tampere, Tampere.

O'Brien (2018) *Supplier Relationship Management: Unlocking the Hidden Value in Your Supply Base.* 2nd ed. Kogan Page Ltd, New York.

Olsen, Rasmus Friis – Ellram, Lisa M. (1997) A portfolio approach to supplier relationships. *Industrial Marketing Management,* Vol. 26 (2) pp. 101–113.

Pandit, Kirit – Marmanis, H. (2008) *Spend Analysis*. 1st ed. J. Ross Publishing, Ft. Lauderdale.

Partida, Becky (2012) Spend Analysis Delivers Big Benefits. *Supply Chain Management Review,* Vol 16 (1) pp. 54–56

Patton, M. (1987) *How to use qualitative methods in evaluation*. Sage Publications, Thousand Oaks, California.

Pemer, Frida – Skjolsvik, Tale (2016) Purchasing policy or purchasing police? The influence of institutional logics and power on responses to purchasing formalization. *Journal of Supply Chain Management,* Vol. 52 (4) pp. 5–21.

Pitkänen, Eija (2020) Yritysvastuuraportti 2019. Telia. Retrived 13.5.2020.

Van Poucke, Eline – Matthyssens, Paul – Weeren, Arie (2016) Enhancing cost savings through early involvement of purchasing professionals in sourcing project: Bayesien estimation of a structural equation model. *Journal of Purchasing and Supply Management,* Vol. 22 (4) pp. 299–310.

Van Poucke, Eline – Matthyssens, Paul – van Weele, Arjan – Van Kockhaven, Wouter (2019) The effects of purchasing proactivity on value creation and supply risk reduction in sourcing projects: Implications for marketers' capabilities. *Industrial Marketing Management,* Vol. 83 pp. 104-114.

Rothkopf, Alexander – Pibernik, Richard (2016) Maverick buying: Eliminate, participate, leverage? *International Journal of Production Economics* Vol. 179 (1) pp. 77–89.

Rudzki, Robert, A. – Smock, Douglas – Katzorke, Michael – Stewart Jr. Shelley (2006) *Straight to the Bottom Line: An Executive's Roadmap to World Class Supply Management.* J. Ross Publishing, Inc. Boca Raton.

Saghiri, Soroosh – Hill, Alex (2014) Supplier relationship impacts on postponement strategies. *International Journal of Production Research* Vol. 52 (7) pp. 2134–2153.

Saxena, Mayank (2014) Collaboration: Taking Procurement to the Next Level. Spend Matters. < https://spendmatters.com/2014/09/23/collaboration-taking-procurement-to-the-next-level/ >, retrieved 15.2.2020.

Schiele, Holger (2007) Supply-management maturity, cost savings and purchasing absorptive capacity: Testing the procurement-performance links. Journal of Purchasing & Supply Management, Vol. 13. Pp. 274-293.

Schiele, H. – Horn, P. – Vos, B. (2011) Estimating cost-saving potential from international sourcing and other sourcing levers: relative importance and trade-offs. *International Journal of Physical Distribution & Logistics Management*, Vol 41 (3) pp.315-336.

Schuh, Christian – Raudabaugh, Joseph, L. – Kromoser, Robert – Strohmer, Michael, F. – Triplat, Alenka (2011) *The Purchasing Chessboard: 64 Methods to Reduce Costs and Increase Value with Suppliers.* 2nd ed. Springer, New York.

Schuh, G. (2005), Produktkomplexität managen, Strategien-Methoden-Tools, Carl Hanser Verlag, München

Shafiq, Asad – Johnson, P., Fraser – Klassen, Robert, D. – Awaysheh, Amrou (2017) Exploring the implications of supply risk on sustainability performance. *International Journal of Operations & Production Management,* Vol 37 (10) pp. 1386–1407.

Smeltzer, Larry – Odgen, Jeffrey (2002) Purchasing professionals' perceived differences between purchasing materials and purchasing services. *Journal of Supply Chain Management*, Vol 38 (1) pp. 54– 70.

Streimikiene, Dalia – Navikaite, Aida; Varanavicius, Vytis (2016) Company's Value Creation Via Customer Satisfaction and Environmental Sustainability Influence. *Montenegrin Journal of Economics,* Vol. 12 (4) pp. 19-28.

Su, Ning – Levina, Natalia – Ross, Jeanne W. (2016) The Long-Tail Strategy of IT Outsourcing. *MIT Sloan Management Review,* Vol 57 (2) pp. 81–89.

Taeuscher, Karl (2019) Uncertainty kills the long tail: demand concentration in peer-to-peer marketplaces. *Electronic Markets,* Vol. 29 (4) pp. 640–660.

Telia Finland Oyj, Finder <https://www.finder.fi/Televiestint%C3%A4+televiestint%C3%A4palvelut/Telia+Finland+Oyj/Helsinki/yhteystiedot/175522>, retrieved 13.5.2020

Tuomi, Jouni – Sarajärvi, Anneli (2009) Laadullinen tutkimus ja sisällönanalyysi. Tammi, Helsinki.

Tynjälä, Päivi (1991) Kvalitatiivisten tutkimusmenetelmien luotettavuudesta. *Kasvatus*, Vol. 22 (5–6) pp. 387–398.

Vainio, Ira (2020) Telian hiilijalajälkilaskenta. Published 11.3.2020, retrieved 13.5.2020.

Van Weele, Arjan J. (2005) *Purchasing & supply chain management: analysis, strategy, planning & practice.* 5th Ed. Cengage Learning. Andover, Hampshire.

Wynstra, Finn – Axelsson, Björn – van der Valk, Wendy (2006) An application-based classification to understand buyer-supplier interaction in business services. *International Journal of Service Industry Management,* Vol. 17 (5) pp. 474–496.

Wynstra, Finn – Rooks, Gerrit – Snijders, Chris (2018) How is service procurement different from goods procurement? Exploring ex ante costs and ex post problems in IT procurement. *Journal of Purchasing and Supply Management,* Vol. 24 pp. 83–94.

Yin, R. (2003) *Applications of case study research*. 2nd ed. Sage Publications, Thousand Oaks, California

Yin, R. K. (2009) *Case study research: Design and methods*. 4th ed. Sage Publications, Los Angeles.

APPENDICES

Set of Questions 1st interview round

- Procurement's long tail describes the situation where the tail spend (approx. 20%) is divided between rather many suppliers (e.g. 80%). One goal of this thesis is to find out the characteristics of the tail and an efficient way to manage it.

1) What kind of procurement there is in the category that you have responsibility for?
    a. What kind of a long tail this category has?
        i. (Examples for purchased products/services)
        ii. (Estimation of spend in € and %)
        iii. (Estimated number of suppliers)
    b. How is the category spend managed?
        i. Key goals of procurement
            1. Does the goal of long tail differ from that?
        ii. Example procedure that has been done in order to make the category's performance more effective
            1. Could a similar procedure be done for the long tail's supplier as well?
    c. Do you feel that long tail is problematic, why?
        i. What factors cause the fragmentation of the spend
            1. In your category?
            2. Within the procurement function in general?
    d. How the long tail should be managed?

- There has been a significant change in the procurement strategy of Telia within the last 18 months. The new strategy includes, for example, the new roles in procurement, the importance of managing the supplier relationship, and value generation in procurement.

2) Has the change been successful?
    a. In your opinion, what was the main message of the change?
    b. What sorts of megatrend can you distinguish to be governing the change?
    c. How has the change been visible in your tasks?
        i. What about your subordinates' (if any)
        ii. How well has the message gotten through the procurement function?

- One strategic goal of Telia is to create a CO2 neutral value chain by the year 2030. This also includes the neutralization of suppliers' CO2 emissions. The suppliers account for 61% of the total emissions of Telia, thus the role of procurement seems to be significant in the change.

3) Do you think that the goal is reachable?
    a. How much pressure have you been put on to reach this goal?
    b. What kinds of concrete actions will be done to reach the goal?
        i. Will those actions primarily focus on larger suppliers?

ii. Have ecological aspects been taken into considerations already in the sourcing stage of large suppliers?

Set of Questions 2nd interview round

1) Who are you, what does your job description include?

2) How many purchase orders do you make a year?

   a. What kinds of POs?
      i. Any spend limits
      ii. Any specific category?
   b. Do you still remember the example case?

(cases in separated)

3) How would you estimate our and supplier's negotiation power in this case?
4) How did the purchasing process work in this particular case?
   a. Where did the need come from? How was it managed?
   b. Who chose the supplier? Were other suppliers considered?
   c. Did sourcing involve? If yes, who and how?
   d. How much time did it take to make the PR?
   e. How long did it take in sourcing support?
   f. How many acceptances were needed?
   g. How long was the total lead time?
5) Success of the process
   a. Grade between 1 to 5
   b. How could the process be improved?
   c. Were the enough / too many phases in the process?
   d. Did sourcing add value? If yes, how?

(at the end)

6) What is the reason for maverick buying?
7) How should small purchases be managed?

Set of Questions 2nd workshop

(independently)

1) How would you execute the example case better?
2) Rank the areas of improvements
   a. More spend to preferred purchasing system
   b. Capacity improvements (reducing sourcing manager's workload)

c. Demand bundling to preferred suppliers
d. Reduced cycle time
e. Enhanced user experience
f. Overall process compliance

(in groups)

3) Opinions of applicability of presented procedures
4) What policies should / could be changed
5) Is there a need for deepening integration between sourcing and purchasing?
6) Does long tail need to be managed? Does long tail need a manager?
7) Other notions