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Identifying buying signals from online news articles for the use of B2B sales organizations

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ABSTRACT

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News articles are an important source of information for salespeople as some news articles may include critical buying signals. A sales intelligence tool that identifies particular news events on customers and sales leads and links them directly to company's CRM system could be very useful for many B2B sales organizations. The sales intelligence tool could particularly help in lead qualification and customer relationship management. To researcher's knowledge, the current research does not cover what types of news events are useful for B2B sales organizations and what factors lead to the adoption and implementation of a sales intelligence tool. Therefore, the purpose of this thesis is to examine what types of news events are important to different B2B sales organizations. Additionally, this study investigates what factors lead to the adoption and implementation of the sales intelligence tool that identifies relevant news articles for the use of B2B sales organizations. The empirical research is conducted as a multiple case study through interviewing six Finnish sales directors who work in five different industries. This study has found novel information on what news events are viewed as important market information from B2B sales perspective. Additionally, this study contributes to the existing literature on sales technology (ST) adoption by bringing a novel perspective on sales intelligence tool adoption.

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Monet uutisartikkelit sisältävät hyödyllisiä ostosignaaleja. Sales intelligence-työkalu, joka tunnistaa tietyt uutistapahtumat koskien asiakkaita ja myyntiliidejä sekä linkittää relevantit uutisartikkelit suoraan yrityksen CRM-järjestelmään, voisi olla hyödyllinen työkalu monelle eri B2B-myyntiorganisaatioille. Työkalu olisi hyödyllinen erityisesti laadukkaiden liidien hankkimisessa ja asiakkuuksien johtamisessa. Aiempi tutkimus ei kuitenkaan tarjoa tietoa siitä, millaiset uutistapahtumat ovat hyödyllisiä eri B2B-myyntiorganisaatioille ja mitkä tekijät johtavat etenkin sales intelligence-työkalun käyttöönottoon B2B-myyntiorganisaatioissa. Tämän lopputyön tarkoituksena on tutkia sitä, millaiset uutistapahtumat ovat tärkeitä eri B2B-myyntiorganisaatioille ja mitkä tekijät johtavat sales intelligence-työkalun käyttöönottoon. Empiirinen tutkimus toteutettiin monitapaustutkimuksena haastattelemalla kuutta suomalaista myyntijohtajaa, jotka työskentelevät viidellä eri toimialalla. Tämä tutkimus on löytänyt uutta tietoa siitä, millaiset uutistapahtumat ovat tärkeitä B2B-myyntiorganisaatioille. Lisäksi tämä tutkimus tukee nykyistä myynnin teknologioiden tutkimusta tarjoten uutta tietoa sales intelligence-työkalujen käyttöönotosta B2B-myyntiorganisaatioissa.

ACKNOWLEDGEMENTS

The idea of writing this thesis came up to me when I was working in B2B sales. I thought, *"There must be a more efficient way to reach sales leads who actually need our services right now"*. I started thinking it would be really cool to learn how machine learning could be used for lead generation. One day I discussed this with my friend who works in a media company and she suggested that they may have a research topic for me. After several meetings I realized that I have a lot of work to do. In the beginning, I really felt like I was navigating in the fog. I had some bits and pieces what to include to my thesis and I knew my goals, but the great master plan for the whole thesis structure was somewhere in the distance. It didn't help that I had no prior knowledge in text analytics, or all the different types of sales technologies.

Working on this thesis has definitely taught me a number of new things. The best part is that I believe my journey doesn't end here. My career path will continue on this road and I'm still enthusiastic to develop online sales by means of analytics.

I'm really grateful for the help and guidance that my supervisor associate professor Anssi Tarkiainen has given me during this process. Thank you for your patience and for getting back to me at short notice when I had any questions. I also want to thank all the sales directors who participated in this study – your ideas and thoughts were an integral part of this thesis. Thank you LUT and especially my dear fellow students with whom I have had the honor of sharing priceless moments during my time at LUT. I also want to thank my friend Sanna for brainstorming with me on this thesis topic and all the people who gave me guidance in the media company. Special thanks goes to my friends and family who have supported me during this journey. Lastly, I want to thank my love Marcus who has been there for me when I've struggled. I can't believe how patient you've been. Thank you. This chapter has come to an end and now I'm more than ready to begin a new chapter.

Helsinki, 27.3.2020
Sonja Lindholm

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1. INTRODUCTION

In the current information-rich world, it is challenging for a salesperson to fully focus on B2B sales and at the same time keep up with the latest business news on potential sales leads and customers. Reading relevant news articles in an effort to find a potential sales lead is time consuming and leaves less time for the actual sales work. Thus, most salespeople rather make sales calls than invest their time on following the current news events. However, many business news articles are often up to date about companies' current and future events and may also include critical buying signals. Therefore, they can be extremely valuable source of information for the salespeople. For instance, the news story titled *"Construction company is recruiting 80 new employees during next year"* gives the sales rep in a recruitment company a good reason to make a sales call.

Qualifying leads is time-consuming and requires advance research and many phone calls and emails in order to reach a sales lead that could be turned into a sale. By having an automated and quick access to relevant and real-time news articles on sales leads, salespeople could be partly freed up from the prospecting phase. For instance, a salesperson might make plenty of sales calls to potential sales leads who may not even belong to the target audience or may not need supplier's services or products at the time. If, however, a salesperson reads a relevant news article about a sales lead who could actually be a potential buyer and then promptly makes the sales call, she can increase the likelihood of setting up a meeting and closing the sale. By the same token, keeping up with the news on customers can also help a sales professional to better understand customers and their needs which can help in building long-term customer relationships. According to LinkedIn's State of Sales Report (2019), almost all decision makers (96%) state that they are more likely to consider a brand's products or services if sales reps have a clear understanding of their business needs. On the contrary, decision makers are least likely to engage with sales reps who have insufficient knowledge about their company (79%) and whose products or services are irrelevant to their company. (Linkedin's State of Sales Report 2019)

Lead qualification can benefit to a great extent from the efficiencies of automation generated by machine learning and artificial intelligence (AI) (Syam & Sharma 2018). Automating information extraction from the business news articles could facilitate and support salespeople, as fast processing of news data enables the salesperson to see the current and relevant news events on sales leads and customers. Han, Hao and Huang (2018) define event extraction as a key technique in natural language processing (NLP), which aims to discover event triggers with specific types and their arguments from unstructured text and save them in a structured format. Online news articles can be a valuable data source for extracting information of specific news events, which can be useful in numerous real-world applications. Research on detecting events from news articles has been widely examined in decision making, artificial intelligence, machine learning and web engineering and technology literature. Yet, it is noteworthy to investigate event extraction from news articles in the sales context. Some specific news events are perceived as buying signals in sales organizations and a sales intelligence tool that uses the information extraction methods could be integrated into the CRM system. Extracting firms' event information from massive online documents could be specifically useful in lead generation, lead qualification and customer relationship management.

This study looks at news articles as a source of sales intelligence for a company in the media industry. The company in focus publishes a wide variety of newspapers as well as provides digital consumer and business services, training, events, trade literature publishing and operates in printing and distribution business. The context of this study is within a larger project where the aim is to develop a new sales intelligence tool with the main goals of providing clients with relevant news articles that entail important market information and buying signals on their customers and sales leads. The aim of this study is to investigate what types of news events should be extracted from the news for the use of B2B sales and what factors lead to the successful adoption of the sales intelligence tool. This study is carried out as a background research for the company that has commissioned this thesis.

1.1 Research background

A growing trend in sales is that companies increasingly digitalize sales channels through AI-powered decision making to simplify selling and buying processes (Singh, Flaherty, Sohi, Deeter-Schmelz, Habel, Le Meunier-FitzHugh, Malshe, Mullins & Onyemah 2019). B2B companies are digitizing sales channels and providing their salespeople with channels that require more online than personal interaction in order to increase selling efficiency and customer value as well as reduce costs (Thaichon, Surachartkumtonkun, Quach, Weaven & Palmatier 2018). The sales professionals are becoming more aware of the full power of AI and how it redefines how sales organizations function. AI reveals a wide range of metrics and data about various business-related topics, such as the stakeholders with whom salespeople are engaging, the challenges customers face in their marketplace and new means for how sellers and buyers can co-create new solutions. (Dickie 2018) The sales technologies are constantly evolving, and the emergence of AI technologies has constituted a major impact on the development of sales technologies. Singh et al. (2019) consider that digitization and AI technologies constitute *"a disruptive force that is likely to be more significant and pervasive than previous sales technologies".*

Data intelligence solutions for sales aim to improve market information and company master data. The solutions are mainly used by B2B sales organizations that are looking to enhance their sales execution by providing their employees with real-time or near-real-time, high-quality data to shorten the sales cycle and win more deals. The market consists of sources of real-time news and social insights on companies and people which is created by ingesting external data feeds or web crawling news and social network posts. This data can be fed into account and contact records that can be integrated directly into sales force automation and CRM lead management systems. (Gartner 2019a) By employing sales technology and AI, the systems can manage salespeople's time more effectively which increases salespeople's productivity. Research conducted by the McKinsey Global Institute found that 40% of tasks in the traditional sales function can be automated and considering projected

advancements in technology, particularly in natural language processing (NLP), the research suggested this could reach 50% (Valdivieso de Uster 2019).

Sales technologies have become an important part of salespeople's everyday jobs. According to LinkedIn's State of Sales Report (2019), around 73% of salespeople in the US use sales technology to close more deals. Of this group, 97% of sales professionals consider sales technology *"very important"* or *"important".* B2B sales has become more challenging as highly personalised services like Amazon and Netflix are driving customers to expect more personalization even in B2B sales processes. (LinkedIn's State of Sales Report 2019) Indeed, B2B sales professionals are expected to offer comprehensive customer solutions rather than sell individual products or services (Tuli, Kohli & Bharadwaj 2007). As broad-based consultative solution selling has become popular approach across various B2B sales organizations, using market information effectively, understanding customer's latent challenges and offering appropriate solutions in response to them can truly improve salesperson's sales performance.

Undoubtedly, the salespeople need to become *"knowledge brokers"* whose job is to communicate how their products or services can solve both the explicit and undiscovered problems of their customers (Verbeke, Dietz & Verwaal 2011). In order to provide solutions as the client wishes at the right time, salespeople can benefit from real-time and useful market information. Previous research depicts that when salespeople have up to date information, they can effectively customize their proposals and recommendations in response to their customer's needs as well as establish a solid foundation with customers. (Moutout & Bascoul 2008; Hunter & Perreault 2006; Park, Kim, Dubinsky & Lee 2009). Moreover, by keeping up with the market information regarding customers, salespeople can gain more trust among their customers by demonstrating in the sales meetings that they know what is going on in the customers' or competitors' businesses. In the US, sales professionals consider that trust is the number one factor in closing deals and 51% of decision makers rank trust as the top factor they expect from a salesperson (Linkedin's State of Sales Report 2019).

Previously sales technology (ST) has enabled greater efficiency by providing tools that lead to faster processes and augment market and customer knowledge (e.g. Ahearne, Jones, Rapp & Mathieu 2008). This paper delves into previous research on sales technologies which includes sales force automation systems (SFA) and customer relationship management (CRM). SFA and CRM software constitute a vast market in sales and marketing. According to Gartner (2019b; 2019c), the world's leading research and advisory company, the worldwide spending on CRM software grew 15,6% reaching $48,2 billion in 2018 whereas the sales force automation market grew 12,8% to $6.9 billion in 2018.

The challenge still remains to ensure that the sales teams can effectively leverage insights that AI can provide (Dickie 2018). Therefore, it is crucial to examine what kinds of factors ensure the successful implementation of new sales technology. Many SFA implementations have previously failed and salespeople have rejected technological initiatives due to unwillingness, disinterest or inability in implementing the change (e.g. Buttle, Ang & Iriana 2006). Some experts also argue that the reason for the unsuccessful implementation of SFA tools were because older sales force technologies sustained standardized, rigid sales processes, and included arbitrary metrics. The solutions strived to provide insights for middle and top management rather than provide ease of use for salespeople. Now enterprises are adopting newer technologies that have more seller-oriented focus. (Roe 2017)

1.2. Research gaps

Generally, relevant market information on customers and sales leads or buying signals can help the salespeople to sell the right types of services or products to a specific customer or sales lead at the right time. However, companies operating in different industries offer a variety of services and products to different customer segments. Thus, relevant news events are also perceived differently in different sales organizations. Studies of news events that are perceived as relevant market information or buying signals in B2B sales organizations have received little attention in the marketing literature even though they are an important part of

salespeople's daily sales work. Therefore, identifying relevant news events for the use of B2B sales organizations represents an emerging phenomenon that has barely been studied.

An analysis of earlier studies on sales intelligence tools has shown that there hardly exist studies on specifically sales intelligence tools, not to mention on sales intelligence tools that extract specific news events for the use of B2B sales. When it comes to automatic information extraction, many researchers have analysed textual content and detected events from different sources. In terms of extracting events from online news articles, researchers have proposed methods to detect business events from online news headlines and leads (Qian, Deng, Ye, Ma & Yuan 2019), extract financial events from news articles (Hogenboom, Hogenboom, Frasincar, Schouten & van der Meer 2013) and identify financial events from RSS news feeds (Borsje, Hogenboom & Frasincar 2010). According to Chung (2014), particularly stock market prediction and fraud detection have drawn attention in financial data and text mining literature. However, extracting events from online news articles for the use of B2B sales organizations has received less attention. From the sales point of view, it is timely to examine further sales-related market information found on the news articles and what news events are perceived as buying signals in different sales organizations. A vast research gap exists in disclosing what news events are important for different B2B sales organizations.

In terms of previous studies on sales technologies, research on ST has mainly focused on adoption of ST or the impact of ST use on salespeople, individual sales performance or organizational performance (e.g. Avlonitis & Panagopoulos 2005; Homburg, Wieseke, & Kuehnl, 2009; Ko, Hyun, Kim & Woo 2008; Holloway, Deitz & Hansen 2013; Hunter 2019). This paper examines the adoption of the sales intelligence tool based on the previous research on ST as there exist no studies on particularly sales intelligence software adoption to researcher's knowledge. In particular, as sales intelligence tools have become more widespread in various sales organizations and many companies integrate sales intelligence into CRM, factors that lead to the successful adoption of the sales intelligence software calls for more understanding.

1.3. Research problem and objectives of the study

This study aims to shed evidence on what types of news events are perceived as buying signals or important market information in B2B sales organizations. In addition, this study seeks to discover what factors lead to the adoption of the sales intelligence tool that identifies relevant news events for the use of B2B sales organizations and what are the impacts of the sales intelligence tool use on sales performance. Finally, the researcher aims to evaluate which case companies would most likely adopt the sales intelligence tool. There are a variety of new and established technologies for every component of a firm's sales value chain. Consequently, sales leaders are continuously challenged to find innovative sales technology that will enhance operational efficiency and effectiveness to optimize sales outcomes. (Omale 2019) As Omale (2019) points out, *"Simply purchasing and installing sales technology is not the answer".* Sales leaders must evaluate the potential and maturity of key technologies as well as determine whether these technologies bring a clear business benefit for their organization (Omale 2019).

The chosen case companies consist of five large enterprises and one SME operating in different industries and which have large sales teams. This offers a great possibility to examine a wide range of news events that are relevant to the case companies. In terms of the sales intelligence tool adoption and the impacts of the sales intelligence tool on sales performance, the case companies are examined through the theoretical framework developed in the literature review. This study aims to discover possibilities to integrate features from the different frameworks to gain more in-depth view of the adoption of sales technologies. This way it is possible to obtain wider perception of the underlying factors that affect the adoption of the sales intelligence tool. Furthermore, the case company data is also studied to discover the factors that impact the implementation of sales intelligence tools and that have not been considered in the earlier frameworks on sales technologies. To researcher's knowledge, there are no studies that focus on identifying relevant news events for the use of B2B sales organizations. Therefore, this paper delves into the concept of event extraction from news articles in the literature review and examines

what news events are perceived as important market information for B2B sales organizations through the data collected from the interviews.

This thesis aims to find answers to the following research problem:

How to ensure successful development and implementation of the sales intelligence tool in B2B sales organizations?

The following research questions are formulated to answer the research problem:

R1: What types of news events on customers and sales leads are important to different B2B sales organizations?

R2: What are the key factors that lead to the adoption of the sales intelligence tool in B2B sales organizations?

R3: What are the key outcomes achieved through the use of the sales intelligence tool?

R4: Based on the findings, which case companies are most likely to adopt the sales intelligence tool?

1.4. Delimitations

The scope of this thesis includes six different companies operating in recruitment, IT services and consulting, grocery wholesaling, construction equipment rental and machinery and equipment wholesaling industries. Thus, the gathered data is limited to these specific case companies operating in the chosen industries. Also, only the sales directors of the case companies were interviewed in the study – thus, the gathered data reflects only their perspective, not the case companies' sales teams' perspectives. As the aim of this study is to gain comprehensive data on news events that are relevant to the B2B sales organizations and to understand the factors that

lead to the adoption of the sales intelligence tool and what are the impacts of the sales intelligence tool, it is appropriate to apply qualitative approach.

1.5. Research strategy and organization of the study

In order to gain comprehension and to be able to interpret the relevant news events for the use of B2B sales and the factors impacting the implementation of the sales intelligence tool in sales organizations operating in Finland, this study's research methodology is based on the qualitative methods. The study is conducted as a multiple case study. This way it is possible to capture similarities and differences between the news events that are regarded as important market information in the chosen case companies. Also, a multiple case study enables to mirror the factors that lead to the adoption of the sales intelligence tool and the impacts of the sales intelligence tool on sales performance on the theoretical framework introduced in the literature review. In general, multiple case studies offer better possibilities for analytical generalization of the results.

This study uses semi-structured theme interviews as the main data collection strategy. All interviews were held face to face. From each case company, the head of sales, sales director or sales manager was interviewed to capture the relevant news events and to gain deeper understanding on the implementation of the sales intelligence tool based on their ideas and thoughts.

The structure of this thesis is as follows. First, theoretical framework and the concepts of sales technology (ST) use and event extraction are introduced. The third chapter addresses the research methodology and discusses the research design and data collection methods as well as introduces short presentations of the case companies that are anonymous in this study. In the fourth chapter, the analysis, results and findings of this study are presented. In the last chapter, discussion, practical and theoretical contributions of the research as well as limitations and directions for further research are finally given.

2. THEORETICAL FRAMEWORK

The first part of this literature review focuses mainly on the concept of sales technology (ST) use and the theoretical frameworks regarding ST adoption, the impacts of ST use on sales performance and market information processing in B2B sales. As for the second part of this literature review, the approaches for event extraction are discussed and the concept of extracting business events from online news articles is presented. Finally, a theoretical framework for the implementation of the sales intelligence tool is presented. The case companies are later mirrored against the theoretical framework.

2.1. The concept of sales technology (ST) use and definition

The diffusion of sales technologies including salesforce automation (SFA) and customer relationship management (CRM) have prompted remarkable changes in B2B sales. It is no surprise that examining the role of sales technologies (ST) and investigating the influence of sales technology on sales force operations has been robust pursuit in the academic literature. As many researchers have used the terms SFA, CRM and ST interchangeably in the past research, this paper adopts the perspective that SFA tools and CRM tools can be viewed as components of ST tools and ST represents the broad range of information technologies that salespeople use (Hunter & Perreault 2007; Hunter 2011; Hunter 2019). To understand better ST use and the implementation of ST, it is first crucial to clarify the concept of ST use. The simplest way to explain the concept of ST use is to begin from the definitions of SFA and CRM and the benefits they offer to the sales professionals.

Researchers have proposed a number of definitions of SFA and CRM in the academic literature and often demonstrate that SFA use supports the CRM use. Jelinek (2013) defines SFA as the set of technology tools that better enable a sales and marketing organization to practice CRM. Jelinek (2013) states, *“At its core, CRM refers to the processes organizations put in place to better acquire customers and build two-way relationships with them, in an effort to make the customers more*

profitable to the sales organization. At the heart of CRM is the concept of the two-way relationship." Speier and Venkatesh (2002), who were among the first ones to study the adoption of sales technologies, argue that sales force automation (SFA) tools are often implemented to facilitate customer relationship management (CRM) processes. Hunter and Perreault (2007) argue, *"Sales-based CRM technology tools are specifically designed to help the sales organization meet its objectives in managing customer relationships. In addition, many SFA vendors offer tools that are intended to make repetitive (administrative) tasks more efficient. These vendors stress that sales representatives who complete routine tasks faster, easier, or better become more productive overall by reallocating time gains to more "face time" with buyers."*

Established sales technologies have mainly focused on supporting the relational efforts of a sales role or automating procedural activities (Singh et al. 2019). In general, SFA systems are implemented to support the automation of sales activities, administrative responsibilities and processes. The main functionalities of the SFA market include account, contact and opportunity management, sales activity management, sales forecasting, reporting, partner relationship management (PRM), mobile applications and platform capabilities. (Gartner 2019d) Furthermore, as the SFA and CRM market are constantly developing and new features are added, including AI-powered features, the state-of-art sales technologies have also become somewhat personal advisors for the sales professionals. For instance, Salesforce, one of the leading CRM market players that offers an integrated CRM platform, offers sales automation software called Sales Cloud that entails a variety of attractive features (Salesforce 2019a). Sales Cloud offers real-time information regarding customers' social content and other updates and tracks information about leads as well as enables access to up-to-date contact information (Salesforce 2019b; Salesforce 2019c). The AI also helps to make smarter and faster decision as the Sales Cloud's AI-powered sales forecasting feature provides updates to help management make decisions (Salesforce 2019d). Moreover, to align marketing and sales, lead management feature enables to manage and track campaigns across all channels including social media (Salesforce 2019e).

Automation and augmentation are often linked to the concept of ST use. However, in recent studies, it has been acknowledged that automation actually highly differs from augmentation and many scholars have begun to emphasize this distinction. (Hunter 2019) In the same vein, Davenport and Kirby (2015) distinguish automation from augmentation as follows: *"Automation starts with a baseline of what people do in a given job and subtracts from that. It deploys computers to chip away at the tasks humans perform as soon as those tasks can be codified. Aiming for increased automation promises cost savings but limits us to thinking within the parameters of work that is being accomplished today. Augmentation, in contrast, means starting with what humans do today and figuring out how that work could be deepened rather than diminished by a greater use of machines."*

Jelinek (2013) also points out, *"Technology is meant to augment the salesperson's abilities, improve organization, and sharpen communication and presentation, but the system itself will not destroy old, bad sales habits."* Hunter (2019) states that contemporary view of ST use of tool to *augment* is aligned with the current definition of ST use. As Hunter (2019) defines it, augmenting generally refers to making a process better by adding something and can be simply defined as *"facilitating or enabling the performance of a sales task".* As such, many research papers refer to augmenting (facilitating or enabling) sales tasks (e.g. Ahearne et al. 2008; Hunter & Panagopoulos 2015; Hunter & Perreault 2006). In the context of this study as well as taking into account the definitions and features of SFA and CRM, this paper adopts a broader definition of ST and is defined as *"information technologies that can facilitate or enable the performance of sales tasks"* (Hunter & Perreault 2007).

2.2. Challenges related to successful implementation of ST

The greatest impact of automation and technology in sales has been on all routine, standard and repeatable activities and the sales technology has enabled to make the selling functions more efficient (Syam & Sharma 2018). Hunter and Panagopoulus (2015) argue that business to business (B2B) sales jobs are even impossible to perform without heavily relying on sales technology because salespeople need to deal with unprecedented and complex information. Although

sales technologies promise to enhance efficiency, a startling percentage of ST projects have previously been unsuccessful (e.g. Buttle et al. 2006; Homburg et al. 2009) Homburg et al. (2009) state that managers dedicate vast financial resources to SFA tools which, however, often correlate with failure rates of 55-75% of such projects. The major reason for the failure rates appears to be that the salespeople frequently reject the new sales technologies (Homburg et al. 2009). Investments in sales technology (ST) tools represent notable costs for B2B sales operations. A successful implementation of ST tools is challenging and the costs for ST systems go well beyond providing salespeople with a cell phone, social media account and a laptop with CRM software installed. (Hunter 2019) These highly costly and previously failed projects have led researchers to examine further the drivers of SFA adoption. Furthermore, since sales scholarship plays a vital role in providing guidance to managers in information technology and sales on how best to assess the resulting returns from the significant investments in sales technologies, it may not come as a surprise that ST research has emerged as one four major intellectual cornerstones of modern sales research (Schrock, Zhao, Hughes & Richards 2016).

2.2.1. Barriers that prevent salespeople engaging with ST

Technology use often has indirect impacts on key sales performance outcomes and the mechanisms for understanding how use influences performance has been studied extensively in both the IT use and ST use literatures. In the IT productivity literature, researchers often have the assumption that the tool works only if the user adopts it (Hunter 2019). Previous research suggests that without user adoption, the implementation of new technologies can be challenging. The difficulties with implementing information technology (IT), including technologies that support the sales function, have been well captured since the 1980s (Sviokla 1996; Ginzberg 1981). In terms of sales technologies and improvement in sales, many sales managers believed that merely driving up SFA use will result in improved sales performance (Jelinek 2013). In the beginning of the new millennium, many researchers began to examine the relationship between implementing new sales technologies and sales performance. Speier and Venkatesh (2002) were among the first researchers who demonstrated that sales technology initiatives often fail to

enhance sales performance. Jones, Sundaram and Chin (2002) argue that such SFA failure projects can truly hamper sales force efficiency and potential customer alliances in addition to negative effect on company profits. Shortly after, Ahearne, Srinivasan and Weinstein (2004) empirically showed that one cannot presume a linear relationship between SFA use and sales performance after the technology is accepted in organization.

The barriers to use sales technology can be divided into internal and external reasons (Buehrer, Senecal & Pullins 2005). The internal reasons are often related to individual differences, such as salespeople who are less educated, older, risk averse, less venturesome, less exposed to technology and less up to date are more likely to resist the system (Parthasarathy & Sohi 1997). In fact, many studies report that age is negatively related to technical orientation of salespeople (e.g. Parthasarathy & Sohi 1997; Buehrer et al. 2005; Hunter & Perreault 2006). Salespeople may also just have natural inclination to continue doing what has always worked and avoid new methods. Some salespeople may not perceive that the benefits exceed the costs of using the technology. (Jones et al. 2002) In terms of external reasons, lack of either management or technical support seem to also prevent the technology use. Furthermore, if the salesperson has no time to learn the technology or a sales organization has insufficient resources to spare time for training or invest financially, then these factors may also affect negatively the adoption of sales technology (Buehrer et al. 2005).

As such, it can be concluded that the main barriers to use sales technology are:

(1) Individual differences (i.e. personal and demographic factors) (Parthasarathy & Sohi 1997; Jones et al. 2002; Buehrer et al. 2005; Hunter & Perreault 2006)
(2) Salespeople do not receive support from the selling organization (Jones et al. 2002; Buehrer et al. 2005)
(3) Lack of training (Buehrer et al. 2005)
(4) Lack of money (Buerher et al. 2005)
(5) Lack of rewards to change (Jones et al. 2002)

(6) Lack of time required to learn and use technology (Parthasarathy and Sohi 1997; Buehrer et al. 2005)

2.3. Theoretical frameworks regarding ST adoption

Research into the sales technology adoption has attracted a great amount of interest among researchers particularly in sales and marketing. An understanding of the factors that drive sales performance through the means of ST use is essential for both managers and researchers. Researchers have explored various topics related to ST use including the underlying reasons for rejecting sales technology, the drivers of successful ST project adoption processes, and the impacts on the sales performance after the successful implementation of sales technology. Consequently, the interest towards the phenomenon of ST adoption has yielded a wide variety of frameworks that aim to describe the key drivers of ST adoption.

2.3.1. Selection of frameworks concerning ST adoption

For over two decades, various perspectives have been proposed by many researchers to describe the factors that lead to the successful implementation of ST. This study aims to propose the main success factors that lead to the successful adoption of sales technology. The theoretical frameworks applied in this study have been selected based on the following three criteria: impact, relevance and differences in perspectives. More specifically, this paper aims to employ studies and frameworks that (1) have been cited frequently in relation to other papers in the context, (2) are relevant to the study and, (3) differ from each other with regard to the perspective of the study. This way it is possible to gain as comprehensive and wide view as possible of the adoption and implementation of ST while taking into account the constraints of this study.

Technology Acceptance Model (TAM)

A major stream of academic literature has employed intention-based models that use behavioural intention to predict usage of technology (Jones et al. 2002). One of the most widely applied theoretical framework that aims to uncover the determinants of individual technology acceptance is the Technology Acceptance Model [TAM] (Davis 1989). Several frameworks and studies presented in this paper are framed around TAM. At the time of working on this study, Davis (1989) has been cited 48 935 times according to Google Scholar which indicates that TAM has attracted broad attention among many researchers from a diverse set of disciplines. TAM is built on behavioural theory and is particularly designed for explaining individual technology acceptance decisions across a wide range of technologies, user populations and contexts (Hunter 2019; Hu, Clark & Ma 2003).

TAM suggests that a number of factors influence user's decision regarding how and when they will use new technology when the users are presented with a new technology. Particularly two determinants affect the user behaviour: perceived usefulness (PU) and perceived ease-of-use (PEOU). (Davis 1989) TAM has surfaced as a powerful way to demonstrate the antecedents of technology usage through beliefs about perceived usefulness and perceived ease of use (Jones et al. 2002). Perceived usefulness is defined by Davis (1989) as *"the degree to which a person believes that using a particular system would enhance his or her job performance".* Perceived ease of use refers to *"the degree to which a person believes that using a particular system would be free of effort".* Davis (1989) states, *"From multiple disciplinary vantage points, perceived usefulness and perceived ease of use are indicated as fundamental and distinct constructs that are influential in decisions to use information technology."* Hunter (2019) argues that process-level models, such as TAM, can provide richer insights into how and why users employ technology tools which can help toward encouraging adoption. However, some researchers have stated that TAM remains incomplete from a sales and marketing perspective (e.g. Hu et al. 2003; Venkatesh & Davis 2000). Thus, several studies extend the TAM model using different key determinants in an effort to categorize

antecedents of ST adoption (e.g. Avlonitis & Panagopoulos 2005; Homburg et al. 2009; Holloway et al. 2013).

2.3.2. Social, organizational and individual factors affecting CRM adoption

Avlonitis and Panagopoulos (2005) examine the factors that lead to the effective acceptance of CRM technology and investigate the impact of its implementation on the individual sales representative performance. Avlonitis and Panagopoulos (2005) conducted a study on how external factors (i.e. social, organizational and individual factors) will influence usage behaviour through their effects on the person's belief structure (i.e. perceived ease-of-use and perceived usefulness). The findings of the study are demonstrated in figure 1.

Avlonitis and Panagopoulos (2005) found that salespeople who perceive that a CRM system is easy to use and useful in conducting their activities are more likely to adopt the CRM system and use it in their daily activities. Interestingly, Avlonitis and Panagopoulos (2005) found that only salespeople's perceived usefulness has a significant influence on CRM acceptance and direct impact on salesperson performance. Thus, CRM may not be perceived useful unless it is easy to use, and only perceived usefulness will lead to the enhanced sales performance. Furthermore, Avlonitis and Panagopoulos (2005) found that perceived ease of use is associated with user satisfaction while perceived usefulness has a positive effect on satisfaction with system capabilities and operations.

In terms of social factors, Avlonitis and Panagopoulus (2005) found that the effect of supervisor influence and competition influence directly CRM acceptance. Other researchers have also noticed that these two factors have a significant effect on the acceptance of ST. For example, Jelinek (2013) argues that when salespeople are achieving in performance orientation and aim to be regarded as high performers, they will use sales technology as a way to gain a competitive edge. Buehrer et al. (2005) found that one of the reasons why salespeople were using the sales technology was because their employer required it. Avlonitis and Panagopoulos

(2005) argue that sales supervisors play a major role in accomplishing in the system acceptance process as they support and encourage salespeople to use the system.

With regard to organizational factors, Avlonitis and Panagopoulos (2005) observed that accurate expectations positively affect perceived ease of use while user participation in the CRM implementation process positively influences perceived usefulness. Avlonitis and Panagopoulos (2005) note that salespeople who perceive that they are involved in the system implementation process feel to some extent that they are owners of the change. This feeling of ownership will then increase the likelihood that the salespeople will use the system. Hence, salespeople should be involved in the system design and implementation phase to develop realistic expectations of the system and commit themselves. Avlonitis and Panagopoulus (2005) also observed that personal innovativeness has a significant direct effect on CRM acceptance. This individual disposition assesses the degree to which a person believes that he is positively predisposed toward the use of new technologies and is actually an indicator of risk seeking behaviour (Avlonitis & Panagopoulos 2005; Agarwal & Prasad 1998). The study findings illustrate that more innovative salespeople, who are early adopters of new technological innovations, have a higher tendency to adopt a CRM system (Avlonitis & Panagopoulos 2005). Parthasarathy and Sohi (1997) also point out that salespeople who are more educated, venturesome and risk taking are more likely to welcome an adoption of ST.

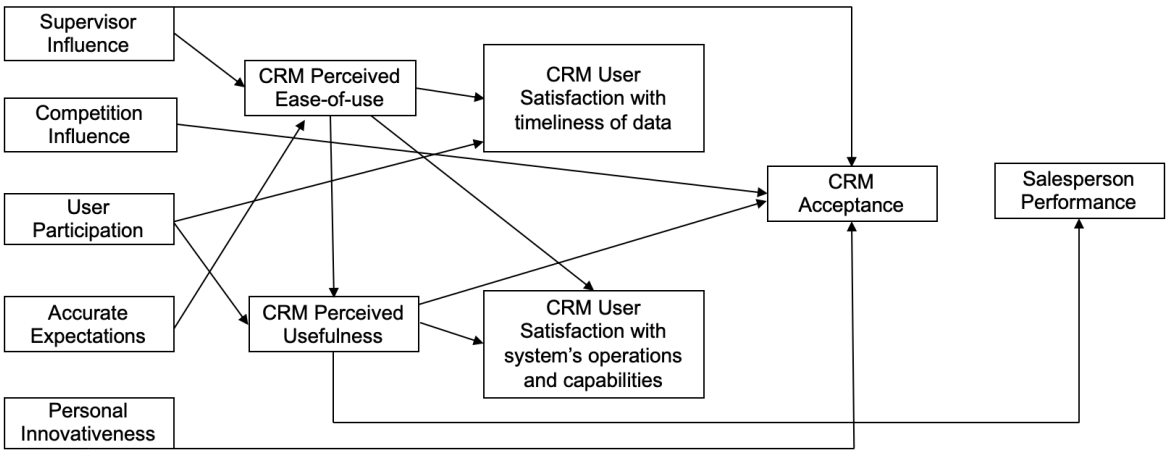

Figure 1. Factors influencing CRM acceptance and salesperson performance (Avlonitis & Panagopoulos 2005)

2.3.3. Social influence on salespeople's adoption of sales technology

Parthasarathy and Sohi (1997) suggest that SFA technology adoption is a two-stage process. First, an organization decides to adopt an SFA system, which can be very expensive and elaborated. Once the organization has adopted the SFA system, the next stage involves the use of the SFA technologies by sales professionals. Hence, both organizational and individual factors influence the process and SFA is complicated by "dual adoption". (Parthasarathy & Sohi 1997) Homburg et al. (2009) suggest a similar process to the adoption of SFA technology but divide it to three-stage process. Figure 2 depicts how SFA adoption is sequentially conveyed from regional managers via sales managers and finally to salespeople. The process presented by Homburg et al. (2009) reflects similar social factors that influence ST adoption as Avlonitis and Panagopoulos (2005) presented, but this process focuses merely on the social environment. Additionally, Homburg et al. (2009) adopt TAM but also address the question of whether interaction with the social environment, such as superiors and co-workers, influence individuals' SFA adoption decisions.

First regional managers decide on the implementation of a new sales technology. Thereafter, subordinates (i.e. sales managers and salespeople) acknowledge the adoption behaviour of their superiors and their co-workers (Leonard-Barton & Deschamps 1988). Homburg et al. (2009) argue that coworkers' SFA adoption has an impact on salesperson's SFA adoption and co-workers can influence to use the SFA tool in many ways. For example, they can directly persuade and recommend to use the new SFA tool, or they can implicitly influence SFA adoption through the mechanism of social learning by embracing specific features of the tool to a co-worker, or a salesperson may observe specific SFA-related behavior or consequences of this behavior from her co-workers (e.g. Salancik & Pfeffer 1978; Kraut, Rice, Cool & Fish 1998; Bandura 1971). Consequently, Homburg et al. (2009) found that there is a positive influence of co-worker's adoption on an individual salesperson's SFA adoption.

In terms of superiors' SFA adoption, regional managers and sales managers tend to encourage and support salespeople to use the SFA (Avlonitis & Panagopoulus

2005; Leonard-Barton & Deschamps 1988). Homburg et al. (2009) point out that if managers champion the adoption of the technology then they can assume a major role in the SFA acceptance. Additionally, superiors can verbally affect salespeople's SFA adoption because superiors and subordinates communicate about a new SFA tool (Homburg et al. 2009). Therefore, when sales managers or regional managers highlight the benefits and minimize the drawbacks of the new SFA tool, they can have a strong influence on subordinates' adoption through *"persuasive communication"* (Leonard-Barton & Deschamps 1988). On the contrary, if a superior rejects the new SFA tool (i.e. either a sales manager or regional manager), Homburg et al. (2009) state that the SFA adoption by salespeople will decrease accordingly. As it turns out, Homburg et al. (2009) found a significant influence of both the superior sales manager's SFA adoption as well as the regional manager's SFA adoption on salespeople's SFA adoption.

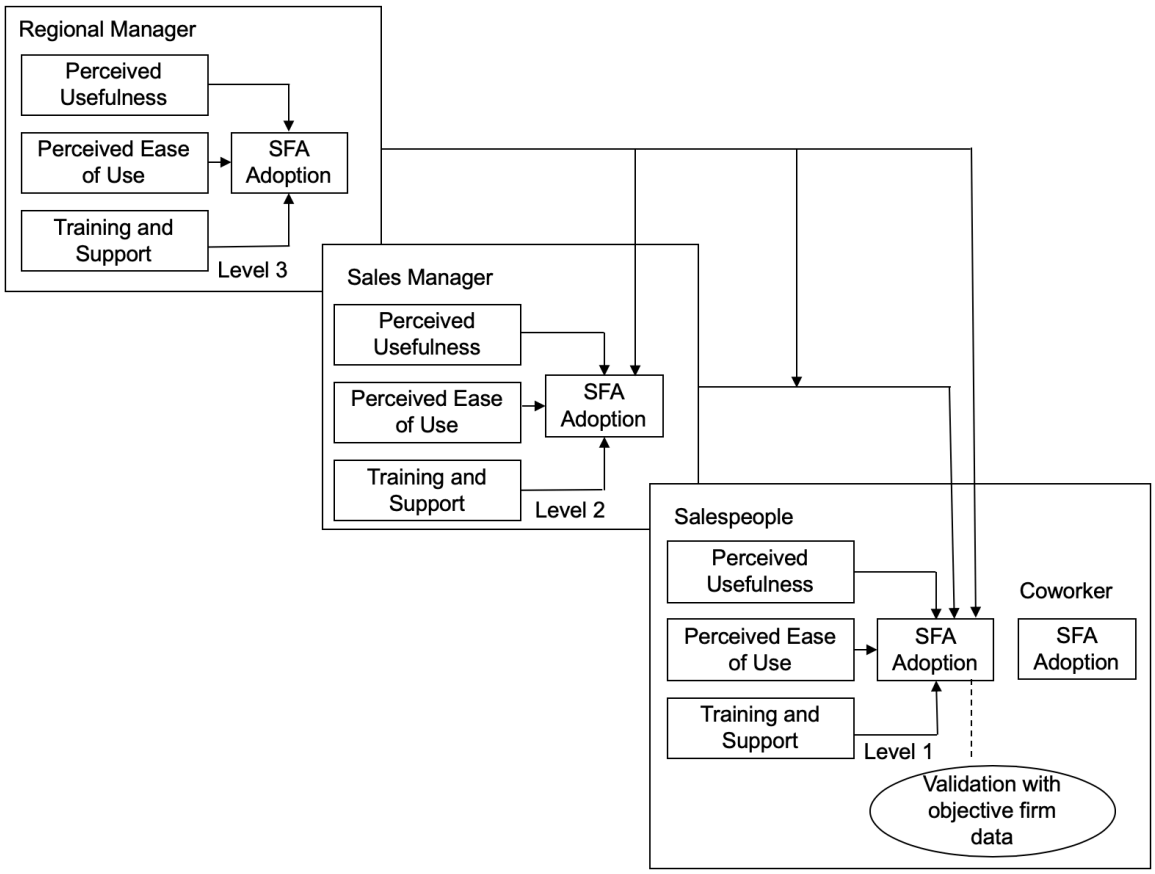

Figure 2. Social influence on salespeople's adoption of ST (Homburg et al. 2009)

2.3.4. Organizational characteristics influencing adoption process

Ko et al. (2008) aim to identify the main factors of the CRM adoption process by exploring the relationships between organizational characteristics. Ko et al. (2008) adopt the innovation decision process model of Rogers (1995) and focus on the three following stages: persuasion, decision, and implementation. The persuasion stage occurs when the company has to be convinced that an innovation will bring benefits and competitive advantages. This leads the company to search for information about the innovation, e.g. costs and benefits. In this stage, organizational characteristics, such as the size of the company and its external business environment are influential. Ko et al. (2008) found that the perception of CRM benefits significantly affects the CRM adoption decision. Therefore, the more decision-makers perceive CRM benefits, including increased profits and enhanced customer loyalty, during the persuasion stage, the more likely they will be convinced that the innovation will give the company a competitive edge. In the decision stage, the company decides to adopt, reject, or postpone the innovation. Ko et al. (2008) note that the adoption decision is made before the choice of the specific CRM technologies. After the adoption decision is made, the companies start looking for particular technologies or strategies for CRM implementation. Companies that are highly committed to their CRM strategies have also a higher likelihood to apply a larger array of technologies. Finally, the implementation stage occurs when the company puts the innovation to use to achieve its objectives. (Ko et al. 2008)

Ko et al. (2008) found that company size, organizational strategy and maturity of information system significantly impact the CRM adoption process. The conceptual framework introduced by Ko et al. (2008) is presented in figure 3. Ko et al. (2008) state that large firms tend to adopt innovations more easily than small ones because they have abundant available resources, strong infrastructures and good risk management abilities. Parthasarathy and Sohi (1997) made a similar observation and point out that most companies adopting SFA systems are likely to be comparatively large and resourceful firms. In addition, Ko et al. (2008) found that companies with mature systems perceive more CRM benefits and therefore are more likely adopt a higher level of CRM technologies. When it comes to

organizational strategy, prospector companies, which are typically pioneers in product development and develop and promote products aggressively, perceive more benefits and are more likely to adopt various CRM technologies (Ko et al. 2008). The similar phenomenon was also acknowledged in Parthasarathy and Sohi (1997) as well as Avlonitis and Panagopoulos' (2005) paper: early adopters have a higher tendency to adopt ST. It is also noteworthy to bring forth that 50% of the respondent companies adopted CRM with the main reason of managing customers, while the reasons for non-adoption among the other 50% were lack of understanding and high cost (Ko et al. 2008). Perhaps the study conducted by Ko et al. (2008) demonstrates even more the importance of great selling skills and expert knowledge at the point when CRM system is presented to the buying organization.

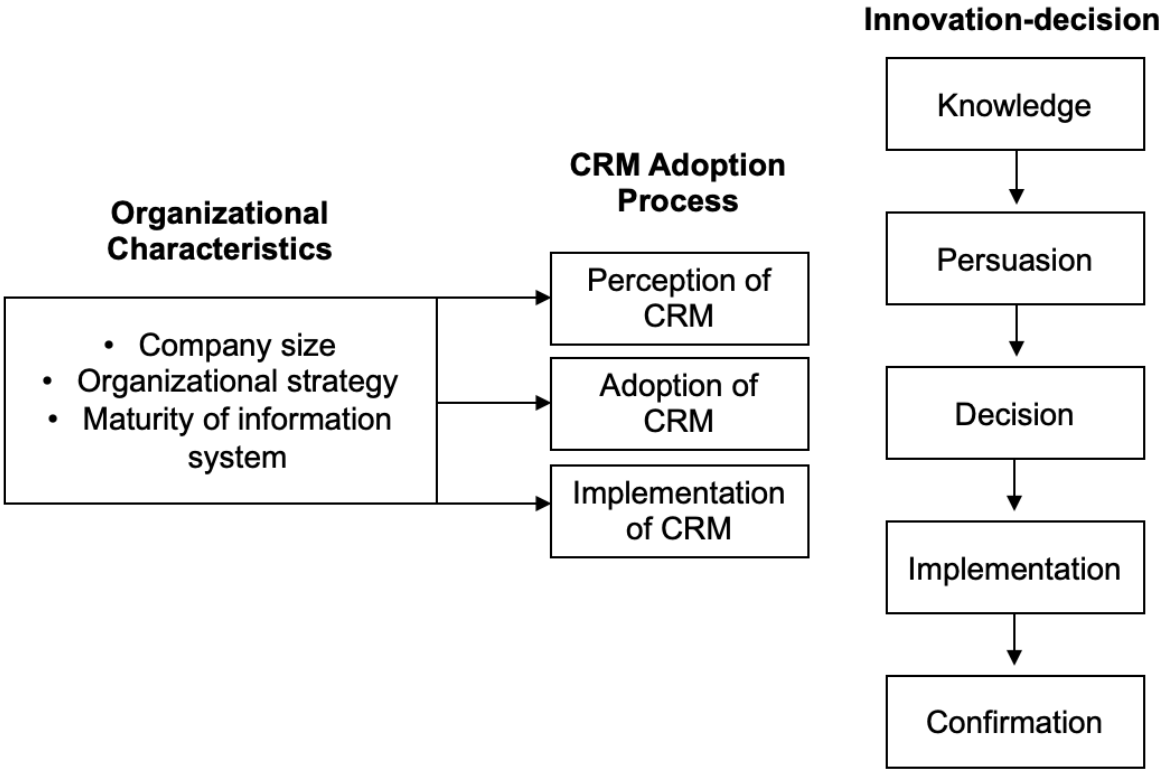

Figure 3. Conceptual framework regarding CRM adoption (adapted from Ko et al. 2008)

On the basis of the study conducted by Ko et al. (2008), it can be argued that companies that are early adopters aim to manage their customer more strategically and coherently and therefore have a higher possibility to adopt a new system.

Moorman (1995) has also presented a highly cited conceptual model in which Moorman (1995) demonstrates how externally oriented organizations have more developed information acquisition processes and a higher tendency to apply market information directly to influence marketing-strategy related actions. Therefore, it can be concluded that externally focused early adopters are more eager to acquire and absorb market information from external environment and then use this information to implement strategic marketing (and sales) related actions. For this reason, these companies also perceive the benefits better which thereafter results in a higher possibility to adopt and implement a CRM system.

2.3.5. Enhanced market information processing and customer orientation

Holloway et al. (2013) adopt the market information processing concept introduced by Moorman (1995) as well as TAM (Davis 1989) and present a theoretical model (figure 4) that holds that a salesperson's SFA usage is positively related to market information processing behaviours and customer orientation. Holloway et al. (2013) found that SFA usage has a positive influence on the processing of market information which thereafter positively influences both customer orientation and relationship quality. Holloway et al. (2013) explain that salesperson's SFA usage will indirectly and positively influence salesperson performance based on a combination of both marketing information processing and customer-oriented attitude that eventually enable higher quality customer relationships and enhanced job performance.

Holloway et al. (2013) point out that customer-oriented salespeople who gather and process information about their markets are more capable of establishing and maintaining strong customer relationships. These relationships will then offer a salesperson means through which they are able to improve their overall performance levels. Holloway et al. (2013) argue that salespeople who are customer oriented tend to search information concerning customers' problems and aim to develop solutions in response to these problems. Therefore, when SFA technologies are in place and acted upon salespeople can engage in market information processing behaviours and focus on customer orientation. SFA systems

provide salespeople the immediate access to real-time, integrated information that can be used in any number of ways to enhance customer relationship quality. (Holloway et al. 2013)

Holloway et al. (2013) argue that salespeople must not only obtain information about customers but also interpret this information and use it in such way in order to enhance their understanding of the market and specifically customers' needs and the perceived value of the company's offerings. Holloway et al. (2013) argue that salespeople who adopt a customer orientation are more prone to succeed over the long term. In similar vein, Saxe and Weitz (1982) also propose that customer-oriented salespeople are willing to give up short-term gains in favour of those behaviours that increase long-term customer satisfaction.

Additionally, Holloway et al. (2013) found that perceived ease of use of the SFA system positively affects SFA usage and more specifically, the relationship between ease of use and SFA usage becomes significantly stronger as salesperson experience increases. This finding is in line with the previous research where it has been discovered that age negatively affects the adoption of ST (e.g. Parthasarathy & Sohi 1997; Buehrer et al. 2005; Hunter & Perreault 2006).

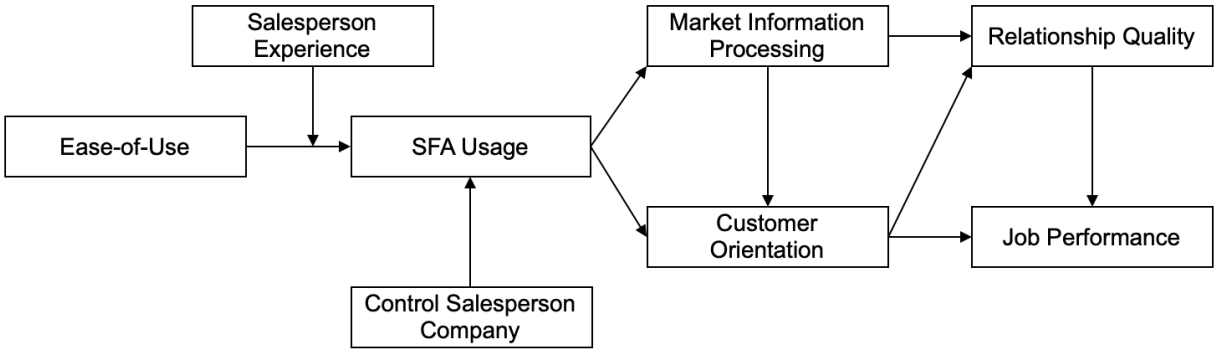

Figure 4. Theoretical model on the impact of SFA use (Holloway et al. 2013)

2.3.6 Key outcomes achieved through the use of sales technology

Hunter (2019) argues that using sales technology leads salespeople to *"work smarter"* which means that by using ST salespeople are more able to tailor their behaviour to specific customers and propose mutually beneficial ideas as well as plan for upcoming meetings. This type of *"integrative sales negotiation approach"* benefits both the buyer and the seller (Hunter 2019). According to Hunter (2019), the key sales tasks affecting performance results include both proactive (e.g. planning) and reactive behaviors (adaptive behaviors).

Hunter (2019) investigates how different measures of sales technologies relate to the sales tasks and outcomes and illustrates conceptual model of technology uses which demonstrates how sales technology helps ultimately to improve both *effectiveness* and *efficiency*. Majority of sales professionals focus on building effective relationships with buying companies and therefore are likely to use technology to improve their sales relationship effectiveness whereas efficiency is enhanced when technology is used perform key tasks which yields performance outcomes (Ahearne et al. 2008; Hunter & Perreault 2007). Jelinek (2013) also argues that efficiency and effectiveness are the two performance outcomes that most sales organizations focus on. In terms of efficiency, sales managers try to minimize the resources that are used to achieve a desired output. By working more efficiently salespeople can improve use of time and resources which in turn helps them become more effective in sales as they are able to win more business and sell more. (Jelinek 2013) Furthermore, Buehrer et al. (2005) explored the reasons for using ST and found in their study that being productive and efficiency were the major reasons to use sales technology. Salespeople explained that technology enables them to do more in a shorter period of time. Moreover, technology helped the salespeople to stay in contact with their customers with less effort and also improved communication with their customers. (Buehrer et al. 2005)

As figure 5 shows, different measures of ST use including holistic ST use (general use of the portfolio of IT tools), intermediate ST use (purpose-specific tools that are used to accessing, analysing and communicating information) and individual ST use

(purpose-specific like cell phones or malleable tools like email) lead to working smarter and eventually lead to higher effectiveness and efficiency in sales work (Hunter 2019). The study of Hunter (2014) reveals that sales planning for interactions with customers, specifically when market-driven, can positively influence customer relationships as well as improves efficiency. The same notion was found on the study of Holloway et al. (2013) – processing market-information leads to stronger customer relationships. Hunter (2019) found that using technology to access information has the most positive relationship on sales planning and using technology for communicating information is highly correlated with proposing mutually beneficial ideas. Hence, the study of Hunter (2019) suggests that market-driven information is both beneficial for the salespeople in the planning stage as well as when communicating the information to the customer in an effort to propose mutually beneficial ideas.

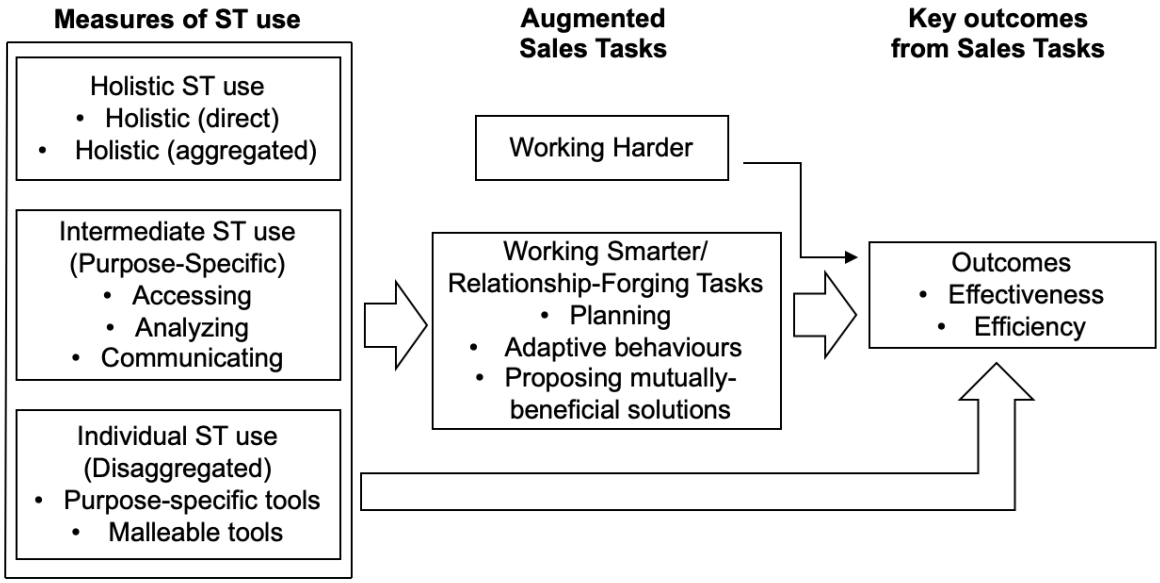

Figure 5. Conceptual model of technology uses (Hunter 2019)

2.4. The significance of market information in B2B sales

Previous research depicts that market information use can improve sales performance. However, merely holding the knowledge is not enough. Hunter and Perreault (2006) state that salespeople need to convert available data into useful insights that can be used effectively to develop and advance recommendations and

proposals so that sales objectives are in line with customer objectives. This notion supports Holloway et al. (2013) and Hunter (2019) view on the matter as well. Similarly, Mariadoss, Milewicz, Lee and Sahaym (2014) argue that in competitive markets, salespeople are often the ultimate conveyers of each organization's value proposition. Since there is a vigorous tension among competitors, salespeople must make sense of various forms and sources of knowledge to successfully meet their customers' and their organization's demands. Salespeople must repeatedly and capably use the competitive knowledge to turn the intellectual capital into a competitive advantage. (Nahapiet & Ghoshal 1998; Spender 1996; Subramaniam & Youndt 2005)

Then how can sales professionals distinguish the valuable market information from immense data as well as allocate it to the right buyers? Verbeke et al. (2011) address the role of selling-related knowledge (which includes both customer and product/technical knowledge) and state that practically it implies, *"An understanding the roles of specific buying-center members and what products or services mean for them (e.g., who is an "influencer" or "decision maker"). It also implies an understanding of how products or services diffuse over markets (e.g., who is an "early adopter" or a "late adopter")".* As a matter of fact, Verbeke et al. (2011) found that selling-related knowledge has the highest correlation with sales performance. Verbeke et al. (2011) highlight that salespeople have limited amount of time and they need to allocate their scarce resources to market players who are most relevant to their company or most open to their messages at certain moments in time. By focusing on lead users or opinion leaders, salespeople can affect the take-off of services and products in markets (e.g. Stremersch & Van Dyck 2009). Additionally, Verbeke et al. (2011) argue that the ability to understand the *"know-why"* of a product, how it may produce a solution (*"know-how"*) as well as who will adopt it (*"know-who"*) are important aspects in terms of salesperson's learning capacity. Thus, it may not come as a surprise that Verbeke et al. (2011) also found that selling-related knowledge correlates notably with cognitive aptitude.

Verbeke et al. (2011) point out that customers are better informed than before as the Internet reveals a great deal of necessary information. Consequently, it becomes

more challenging for the salespeople to communicate how their products or services solve both the explicit and latent problems of their customers. Indeed, augmenting the market information knowledge in order to understand the customer's business profoundly could help the salesperson to offer more suitable solutions and ultimately provide higher value to the customer. Syam and Sharma (2018) anticipate, *"The greatest impact of digitalization in sales will be in all the activities and efforts that go into understanding customer behavior in order to design and deliver highly customized offerings"*. Some instances of customer behavior are buying patterns, development of preferences and utilities from consumption, social influence and consideration sets. Understanding these is critical to the success of sales strategies. (Syam & Sharma 2018)

In B2B contexts, salespeople are required to understand the needs and interactions of the buying center in order to succeed in sales. The complexity of buying centers, including the stakeholders in it and the size, continues to increase and it can be difficult for sales professionals to interact successfully with buying centers in the complex environment. The advent of the Fourth Industrial Revolution and the increased use of AI algorithms and models as well as machine learning can simulate the buying center with all its complexities and can pass the information to salespeople about the data to use which allows salespeople to anticipate roadblocks and potential pitfalls when they engage with the buying center. The impact of AI and machine learning on the personal selling and sales management function will be profound in the future. (Syam & Sharma 2018)

2.5. Intelligent system that automatically extracts market insights

As pointed out in the earlier subchapters, turning valuable market information into competitive advantage in B2B sales can significantly help salespeople to achieve desired results. Verbeke et al. (2011) argue that selling-related knowledge is a key determinant for a salesperson's success in B2B sales. As salespeople's resources are limited, they need to carefully choose to which market players they devote their time and energy to. News articles provide salespeople with valuable market insights.

A sales intelligence tool that automatically extracts relevant and real-time news articles on customers and potential sales leads could help salespeople to allocate their resources wisely and work smarter. Thus, the following subchapters focus on the concept of extracting insightful news events from online news articles.

2.5.1. Information extraction from news articles

Extraction of specific insights from textual data with different types of statistical algorithms is referred to as *text mining, text analytics, or machine learning from text* (Aggarwal 2018, 1). As such, this paper uses these terms interchangeably. In general, many machine learning techniques rely on the use of basic *natural language processing (NLP)* and *information retrieval methodologies* (Aggarwal 2018, vii-viii). These analytical methods that depend on natural language processing include, for example, *information extraction*, *event extraction*, *opinion mining*, and *text summarization*, which often leverage basic natural language processing tools like *linguistic parsing* or *part-of-speech tagging* (Aggarwal 2018, viii). As the focus of this work is to examine news events extracted from online news articles, this paper focuses specifically on the concept of *event extraction.*

Textual data requires a great deal of preprocessing as it is extracted from platforms, such as the Web that contain nonstandard words, misspellings, anchor text, or other meta-attributes. The simplest way to represent cleaned text is a multidimensional bag-of-words representation. However, complex structural representations can create fields for different types of *entities* and *events* in the text. (Aggarwal 2018, 4) The ultimate goal of information access is to *“connect the right information with the right users at the right time”* with less focus on processing or transformation of text information. In most applications, it would be desirable to represent text information semantically in order that more meaningful analysis and mining can be achieved. (Aggarwal & Zhai 2012, 2-3)

2.5.2. News articles as a source of valuable information

Many individuals, including sales professionals, aim to keep up to date with the latest events by reading news on the internet. Online news articles reflect past, current and future conditions and include valuable information for many decision makers. News articles provide current and up-to-date information including company movements, market changes, financial performance, market shares, products and services, technological changes, legal issues and competition which is useful data for various decision makers (Chung 2014). However, due to the vast amount of news continuously released by modern electronic communication media it becomes more difficult to process all news (Groß-Klußmann & Hautsch 2011). Automatically filtering news items by means of computers would reduce the effort to select relevant news messages (IJntema, Sangers, Hogenboom & Frasincar 2012). For instance, intelligent systems can identify business events, such as mergers & acquisitions, investment and product development, and other events that may affect corporation decision-making (Han et al. 2018).

However, many researchers argue that extracting effectively events from a large amount of textual data is still a challenge (e.g. Hogenboom, Fransincar, Kaymak, de Jong & Caron 2016; Chung 2014; Nguyen, Cho, Grishman 2016; Qian et al. 2019; Han et al. 2018). Qian et al. (2019) argue that one of the reasons for the challenge to extract events efficiently is that people discuss various topics in an open domain and most this information is not well tagged which makes it unclear in advance what set of event types are suitable for categorization. Also, the uneven distribution of various categories of data has been a major barrier to the efficiency of traditional classification methods (Qian et al. 2019). Additionally, Han et al. (2018) state that the machine learning approaches have barely been able to achieve acceptable performance for business analysis as they have not achieved very high-precision performance estimates, due to the lack of annotated corpus content for news and documents.

2.5.3. Event extraction and the definition of business event

Hogenboom et al. (2016) state that event extraction combines knowledge and experience from a variety of domains, including computer science, data mining, linguistics, artificial intelligence and knowledge modeling. Recently the research on event extraction has evolved greatly. This is because the digital collections and the information extraction requirements have grown exponentially in various fields. (Hogenboom et al. 2016).

Due to the increase of research on event extraction, various definitions of event have been introduced in the literature of NLP. Yet, event identification and processing are still very challenging due to the ambiguous nature of the concept of event. The notion of event has often been tailored to the task of interest and has been revised several times. Moreover, the notion of event has been studied also in other disciplines, such as history, philosophy and cognitive science. Thus, a number of different definitions of event has been proposed. (Sprugnoli & Tonelli 2016) Qian et al. (2019) refer to business events in their study and state, *"The term of business event refers to the activity performed by a firm at a specific time period, such as the organizational activities of investing, marketing, researching and developing."* The detection of such set of business events can be useful in numerous applications, for example in industrial trend detection or in content recommendations for readers and subscribers (Han et al. 2018; Karimi, Jannach & Jugovach 2018). As such, this paper adopts the definition of business event proposed by Qian et al. (2019).

2.5.4. Event extraction approaches

The event-extraction approaches can be mainly classified into *data-driven methods*, *knowledge-driven methods* and *hybrid methods*. Data-driven methods convert data to knowledge through the use of statistics, data mining, and machine learning. (Hogenboom et al. 2016) According to Hogenboom et al. (2016), most event extraction tools make use of at least some data-driven techniques, and many of these tools depend purely on quantitative methods to discover relations. Hogenboom et al. (2016) state that data-driven methods develop models of text

corpora that approximate linguistic phenomena. As for knowledge-driven methods, predefined patterns that express expert knowledge rules are often used, typically through pattern-based approaches, including lexicon-syntactic patterns and lexicon-semantic patterns (e.g. Hung, Lin & Hong 2010; Hogenboom et al. 2013). Hybrid event extraction methods equally employ both data-driven and knowledge-driven techniques. (Hogenboom et al. 2016)

2.5.5. Machine learning methods for event extraction

There is a clear distinction between unsupervised and supervised learning methods for data-driven event extraction (Hogenboom et al. 2016). Primarily these two types of methods are used for event extraction (Atefeh & Khreich 2015). Unsupervised learning methods do not need training data and therefore can be applied to any text data without requiring additional manual effort (Aggarwal & Zhai 2012, 5). Unsupervised learning is commonly employed in data exploration or structure discovery tasks (Hogenboom et al. 2016). Supervised learning methods, on the other hand, use the training examples to guide the grouping process and requires some expert knowledge since labelled data is provided to learn algorithms (Aggarwal 2018, 74; Hogenboom et al. 2016).

Clustering and *topic modelling* are the two main unsupervised learning methods commonly used in the context of text data. (Aggarwal & Zhai 2012, 5) Text clustering approaches partition the corpus into groups of related documents that belong to particular categories or topics. This can be achieved with a domain-specific similarity function, such as the cosine measure. Particular examples of desired categories are not provided in advance and thus these categories are not known beforehand. (Aggarwal 2018, 8) In terms of topic modelling, Keane, Yee and Zhou (2015) state that topic modelling is a powerful technique to discover patterns of words that reflect the latent topics that are combined to form documents. *Latent Dirichlet Allocation (LDA)* (Blei, Ng & Jordan 2003) is a commonly used probabilistic topic model for topic modelling where each document of a collection is modelled as a finite mixture over underlying topics and each topic is modelled as an infinite mixture over underlying topic probabilities.

Supervised learning techniques produce new events based on the given labeled examples (Hogenboom et al. 2016). In supervised learning methods, one can provide examples of news articles belonging to several natural categories (Aggarwal 2018, 8). As a wide range of application problems can be regarded as a classification problem, the problem of supervised learning is also referred to as classification (Aggarwal & Zhai 2012, 6). In text classification, the corpus is partitioned into classes that are defined by application-specific criteria. Hence, training examples are provided in order to associate data points with labels to indicate their class membership. (Aggarwal 2018, 113) According to Aggarwal and Zhai (2012, 14), many information extraction subtasks can be transformed into classification problems, which can be solved by standard supervised learning algorithms like support vector machines and maximum entropy models. Hogenboom et al. (2016) state that popular supervised machine learning techniques for learning relations (e.g. decision trees or neural networks) often prove to be challenging to train for event extraction because these methods require a vast amount of data to be trained on and much of it is not initially labelled.

Aggarwal (2018, 113) states that text classification and clustering are closely related problems because each class can be viewed as a cluster. However, in text classification the problem is distinguished between training examples and test examples, and labels are observed only for training examples. Thus, the supervised model from the training data is used to predict the labels of the test examples. The main idea is that the training instances essentially fix the nature of these *"clusters"* (i.e. classes) with the use of labels. Hence, the test examples are always assigned to one of the pre-defined training labels (groupings) in classification. As for clustering, it has a more open-ended view where it uses the similarity structure of the data to define its own groupings (which can later be manually labelled by a domain expert). (Aggarwal 2018, 113) Furthermore, Hogenboom et al. (2016) state that combining both labeled and unlabeled data can improve substantially learning accuracy and therefore semi-supervised learning approaches are often employed when there is a large amount of unlabeled data and small amount of labeled data available.

2.6. Extracting business events from news articles

In the following subchapter, a study of Qian et al. (2019) on extracting business events from massive online news articles is presented. The study uses state-of-art methods for event extraction which allows to broaden the view on the event extraction methods and the types of business events extracted from online news articles. More importantly, the idea is to present business events that could be also perceived as buying signals or relevant market information from salespeople's perspective. Sales professionals could benefit from the sales intelligence tool that identifies similar business events regarding customers and sales leads. The study of Qian et al. (2019) is also presented here in order to understand more profoundly the concept of event extraction and some of the difficulties concerning event extraction from online news articles.

2.6.1. Detecting business events from online news headlines and leads

Qian et al. (2019) aim to identify business events from massive online textual sources efficiently and examine the characteristic of the headline of an online news article in business event detection. Qian et al. (2019) use a semi-supervised method and propose a three-step process of clustering-annotation-classification strategy to identify information about business events from a vast amount of online news headlines and leads. In the study of Qian et al. (2019), a business event was characterized by event triggers. For instance, in the following text, *"Amazon launches restaurant delivery on prime now in Austin"*, the word *"launches"* is a trigger for the event *"restaurant delivery"* which can be categorized into a business event of *expand new business*. (Qian et al. 2019)

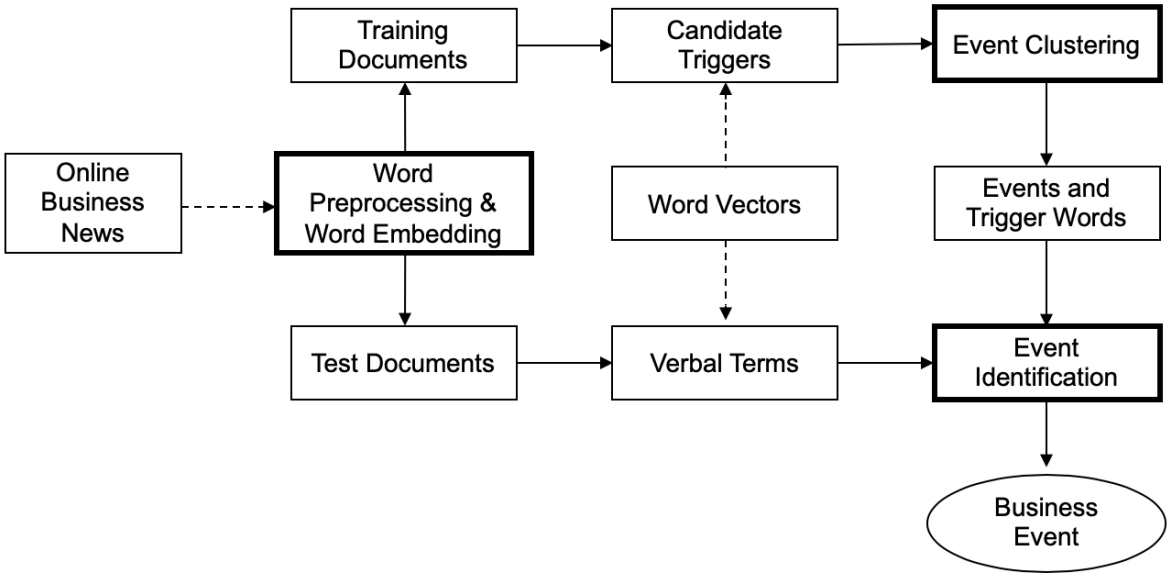

Figure 6. The method framework (Qian et al. 2019)

An overview of the system illustrated by Qian et al. (2019) for extracting business events from online news is presented in figure 6. The research framework consists mainly of the following three parts: *word preprocessing*, *event clustering and annotation*, and *event identification*. First, the *word preprocessing* module is proposed to perform necessary processing on the data, including crawling data online, data cleaning, word segmentation as well as word vector embedding. In the *word embedding* step, a neural network was trained to obtain high-quality vector representations for the words in corpus. The *event clustering and annotation* module acquires a list of various business event types. In this step, the important part was to annotate some major categories of business events from large quantities of unlabelled data. Lastly, the *event identification model* identifies the event information from the test documents by making use of the learned event triggers as a classifier. (Qian et al. 2019)

Qian et al. (2019) state that event extraction can be treated as a separate problem of trigger tokens classifying, which involves categorizing the extracted verbs into appropriate event types. According to Liu, Liu, He and Zhao (2016), one of the major difficulties in event classification is the problem caused by the ambiguity of potential trigger words. Qian et al. (2019) argue that the occurrence frequency of trigger tokens is unevenly distributed in corpus and a few of the low-frequency verbs may

be meaningful for detecting business events. To reduce the impact of noise terms that are mixed with low-frequency verbs, Qian et al. (2019) divided the verbs in the dataset into two parts: One for high-frequency verbs and the other for low-frequency verbs. Then Qian et al. (2019) conducted the *"clustering-annotation-classification"* strategy on the collection of high-frequency verbs. Lastly, Qian et al. (2019) compared the semantic similarity between each infrequent verb and each expert-labeled event and assigned the low-frequency word to a most appropriate event class as a low-frequency trigger.

The data used in the set of experiments were crawled from an online business news sharing website. At the time the study was conducted, the data on the online business news sharing website had tracked across 7100 high-quality companies and 900 investment institutions in China. In total, 14 556 documents were obtained. The news articles published on the website were previously classified into the four following categories of business events by the editors including *Financing Events (Finance)*, *Merger and Acquisition Events (M&A)*, *Initial Public Offerings Events (IPO)* and *Delisting Events (Exit)*. (Qian et al. 2019) These categories then served as a benchmark in the study of Qian et al. (2019). The identified business events and their top-5 event triggers are presented in table 1.

Table 1. Business events and the top-5 trigger tokens (Qian et al. 2019)

Event Type	**The top-5 trigger tokens**
Innovation	reform, develop, receive, innovate, possess
Business Upgrading	upgrade, integrate, synthesis, advance, accelerate
Investment & Financing	append investment, capital injection, gain/get investment, raise, invest, financing
Delisting	achieve, descend, increase, accumulate, loss

Transformation	choose, change, transform, exist, solute
Mergers & Acquisitions	holdings, merge, split, sign, negotiation
Investigation	research, publish, investigate, census, report
Business Expansion	reinforce, accelerate, launch, push, expand
Business Improvement	fusion, improve and perfect, optimize, intensify, shift
Conflict & Failure	refuse, attack, cancel, fail, compensate, sink into
Strategic Planning	formulate, fulfil, need, attract, adopt
Payment Service	browse, log in, protect, purchase/buy, pay, discount
Legal Event	defraud, complain, illegal, cheat, pyramid
Marketing	create, aim, invite, place an order, contact
Product Design	connect, construct, design, customize/personalize, adopt, revise
IPO & Stock	IPO, order to buy, overweight, transfer/assign, cash out
Infringement	worry, tort, trigger, doubt, invade

As Qian et al. (2019) found, the word frequency was unbalanced distributed in the corpus and showed a long tail like distribution. Hence, if only the high-frequency buzzwords are used for event detection, it may be possible to lose some rare information represented by the low-frequency words. In the study of Qian et al. (2019), the task of event identification in corpus is achieved by clustering verbs into

groups based on their semantic similarity, annotating each group with an event label, and further using the grouped event triggers as a classifier.

Qian et al. (2019) found that the verbal terms in the headline of an article has a major contribution in identifying event information. The verbal terms in the leads provided a more stable accuracy in detecting business events which indicates that the lead of an online news plays a significant role in understanding what event the article is about. Conversely, the contribution of verbal terms in headlines are more diverse than that in the leads and the verbs in headlines contributed more from the perspective of increasing the values of *Recall* and *F-value*. This is partly due to the fact that online news tends to use a variety of words in headlines to attract readers. Hence, if one relies merely on the triggers in headline, the precision of detecting result might be insufficient. On the contrary, if one relies on all news content, the topics covered in the entire news may be too much and it can cause confusion in understanding the detected events. (Qian et al. 2019) Therefore, based on the study, Qian et al. (2019) suggest that combining headline with lead contents is a feasible option for identifying event information from massive online texts.

2.7. Framework summary regarding ST adoption

In the first part of this literature review, the frameworks and studies concerning the successful adoption of sales technology were presented. In this subchapter, the frameworks and study findings of Avlonitis and Panagopoulos (2005), Homburg et al. (2009), Ko et al. (2008), Holloway et al. (2013) and Hunter (2019) are combined to form a theoretical framework regarding ST adoption. Figure 7 illustrates the theoretical framework that is used in this study to investigate what factors lead to the adoption of the sales intelligence tool that identifies business events on customers and sales leads as well as what are the key outcomes achieved through the use of the sales intelligence tool. In general, influence of co-workers, influence of superiors, user participation, accurate expectations, personal innovativeness, company size, organizational strategy, maturity of information system and support affect either directly or through perceived ease-of-use and/or perceived usefulness

to the ST adoption. When ST is in place and acted upon, salespeople can improve sales planning, tailor their behaviours to meet the needs of the customer and propose mutually beneficial solutions. Furthermore, salespeople can also engage in market information processing behaviours and enact a customer orientation. Finally, the use of ST will ultimately lead to higher efficiency and effectiveness as well as better customer relationship quality and these three factors lead to improved sales performance. In addition, ST perceived usefulness may lead directly to improved sales performance.

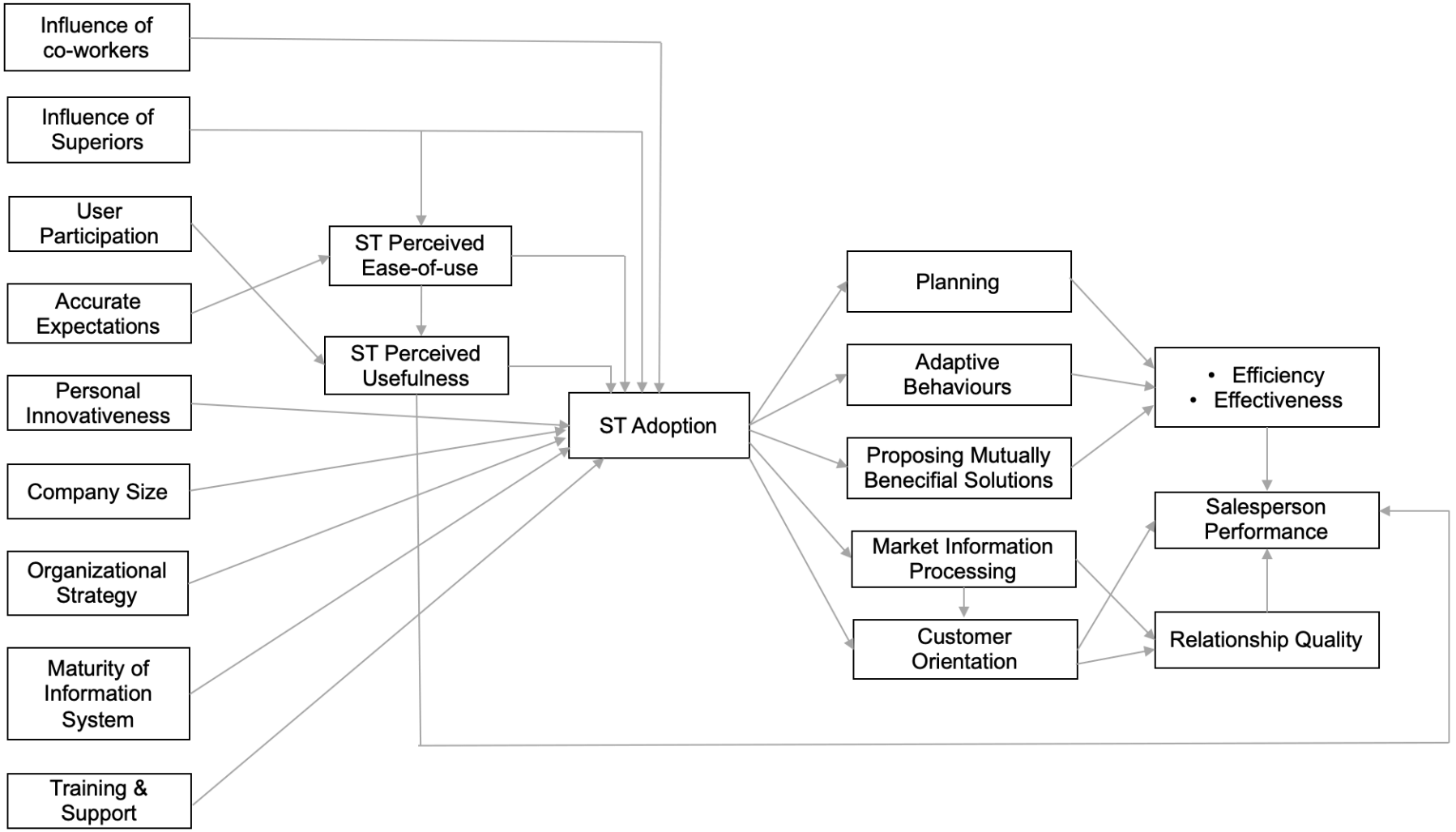

Figure 7. Theoretical framework used in the study (adapted from Avlonitis & Panagopoulos 2005; Homburg et al. 2009; Ko et al. 2008; Holloway et al. 2013; Hunter 2019)

3. METHODOLOGY AND DATA COLLECTION

The aim of this study is to gain an in-depth understanding of what types of news events are important in different B2B sales organizations and what are the key factors that lead to the adoption of the sales intelligence tool that extracts relevant news articles for the use of the salespeople. This study also aims to understand the impact of the sales intelligence tool on sales and what companies may possibly adopt the tool. The themes and patterns that emerge from the data are then mirrored to the theoretical framework introduced in the literature review.

3.1. Methodology

In order to investigate thoroughly what types of news events are regarded as buying signals or important market information in different sales organizations and what factors lead to the successful adoption of the sales intelligence tool, this thesis' research methods are based on the qualitative methods. The quantitative methods would not provide enough detailed information on what different news events mean to sales organizations and what would be required from the sales intelligence tool and the sales organization if the sales organizations were to adopt the sales intelligence tool. Therefore, qualitative research methodology is adopted in this study in order to obtain as detailed and rich data as possible to provide answers to the research questions presented in this study.

This study is conducted as a case study research. Yin (2009a, 18) defines a case study as follows: "*a case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*." In other words, by using case study research, it is possible to gain particular insight and understanding into what news events are regarded as important market information in B2B sales and what factors lead to the successful implementation of the sales intelligence tool. Both of these can be regarded as contemporary phenomena. Case study research also allows to look at the phenomenon in context which means that

the data about these phenomena is collected where it is actually taking place – the case companies that have been selected to this study. Moreover, this study involves multiple cases. Multiple-case studies provide more convincing evidence and can widen the coverage of case study. Furthermore, multiple cases that cover different contextual conditions may significantly expand the generalizability of the study's findings to a wider array of contexts. In addition, it is possible to produce a more compelling and robust case with the evidence from multiple-case studies. (Yin 2009b) Therefore, six different companies operating in different industries were chosen to this study in order to broaden the contextual setting and to provide more generic data. These distinct cases enable to examine profoundly the underlying reasons for important news events identified from news articles and what it takes to successfully implement the sales intelligence tool.

This study incorporates both within-case analysis and cross-case analysis. In within-case analysis, each case is examined and presented separately in an effort to identify unique attributes and patterns that emerge from the data. Also, it was crucial to first focus on how each case company generates sales leads and receives buying signals as well as what kinds of customer relationships case companies build in order to understand what types of news articles are important to them. Within-case analysis delves into each case company's sales processes, customer relationships, CRM strategies, important news events and buying signals as well as what types of factors would lead to the successful implementation of the sales intelligence tool, whereas cross-case analysis strives to find generalizable and robust answers to this study's research questions. After the within-case analysis, a cross-case analysis is applied to discover the common themes and patterns that exist across all the cases. Finally, the findings are mirrored against the theoretical framework.

This study is mainly based on deductive approach. However, because identifying relevant news events from online news articles for the use of B2B sales is a fairly new territory in the marketing literature and has not been studied widely, this study also incorporates inductive approach. When a research follows deductive approach, theoretical prepositions are used to form the qualitative process and direct the data analysis. By incorporating theoretical perspective to this study, it is possible to link

the research into existing knowledge in the subject area and provide an initial analytical framework before conducting the interviews. When incorporating inductive approach, it is possible to develop a conceptual framework in the end of the study by discovering particular themes or issues that emerge from the data. As Saunders, Lewis and Thornhill (2016, 149) state, it is possible to combine both deduction and induction in the same piece of research and it is also advantageous to do so even though one approach or another is dominant. In this research deductive approach is more dominant.

3.1.1. Data collection

The data for this study is collected by holding semi-structured interviews in which the questions are grouped under themes and the aim is to cover a few key questions. In this study, the key questions are 1) what types of news events are perceived as important market information or buying signals and 2) what types of factors lead to the adoption of the sales intelligence tool. This study also includes an exploratory element because identifying buying signals automatically from online news articles is a new phenomenon and there is limited research on the topic. In exploratory study, questions that are asked during data collection to explore an issue, problem or phenomenon usually start with ‘What’ or ‘How’ questions. An exploratory study is also particularly useful if the aim is to clarify understanding of an issue, problem or phenomenon. (Saunders et al. 2016, 174-175). For this reason, the semi-structured interviews were selected as a method to collect the data. By conducting in-depth individual interviews, it was possible to lead the discussion into areas that had not been previously considered in the study, but which were significant to understand the topic, and which helped to address the research question and objectives. The interviews were carried out in Finnish because all the participants were native Finnish speakers.

The interview questions have been selected by identifying the main characteristics of the theoretical framework developed in the literature review. The questions are grouped under two themes in order to gain a clear understanding of the both phenomena. The first theme focuses on the important news events and buying

signals identified from the news articles and the second theme addresses the factors that would lead to a successful adoption of the sales intelligence tool as well as the impacts of the sales intelligence tool on sales performance. The interview questions are presented in appendix 1. The pre-determined themes are structured in the form of open-ended questions which allowed the conversation flow freely and some additional questions were presented by the interviewer to encourage the interviewees to elaborate and build on their responses. However, because the time limit for the interview was one hour, it was impossible to delve into every question during the interview and therefore, different issues were emphasized during different interviews.

After the first theme was covered in the interview, the interviewees were also presented a form which included predefined categories, such as *"a company is recruiting"* or *"a company is investing"*. The list of categories is presented in appendix 2. The categories were defined by a company called Leiki that builds semantic AI technology for online media (Leiki 2019). The interviewees were asked to prioritize the most important news events for them, both positive news events and negative news events, by numbering the news events from the most important news event to the least important news event. This list was then used as a support to define the most relevant positive and negative news events for the case companies. The most relevant positive news events and the most relevant negative news events were then added to the tables 3-8. It is also noteworthy to bring forth that negative news events did not necessarily mean negative signals to case companies. Sometimes negative news events may also be perceived as buying signals or otherwise important market information. Additionally, before proceeding to the second theme in the interview, the interviewees were presented an idea of developing a new sales intelligence tool that would identify sales-related news events. It was explained to the interviewees that the service provider is planning on developing a new sales intelligence tool and would be interested to hear their thoughts and ideas of the tool.

The interviews were carried out as live interviews in the case companies' offices. The interview protocol was sent beforehand to the interviewees, so that they could

familiarize themselves to the themes and the questions beforehand. However, it was not necessary or mandatory for the interviewees to get acquainted with the interview protocol before the interview. The average length of the interviews was 46 minutes. All interviews were audio-recorded and then transcribed. Thereafter, the documents were summarized and finally, the within-case and cross-case analysis were conducted. In addition, some secondary data, mainly publicly available information about the companies collected from the company websites, were used to support the data collected in the interviews.

3.1.2. Reliability and validity

Yin (2009a, 40) lists four criteria that should be taken into account when conducting a case study; *construct validity, internal validity, external validity, and reliability*. These four criteria are used to establish the quality of any empirical social research of which case study is one type of research method.

In this study, construct validity was increased by using multiple sources of evidence and maintaining the chain of evidence to the extent it was possible. Additionally, the construct validity was increased by requesting the interviewees to review the parts of the study in which they are involved in. However, it must also be considered in this study that interviews as the main source of evidence may suffer from response bias, inaccuracies due to poor recall or reflexivity where the interviewee may give the answers what interviewer wants to hear (Yin 2009a, 102). The interview data is also anonymised in this study, which may lead to withholding some relevant information.

As this study does not aim to explain how and why event X leads to event Y, but rather find answers what buying signals and important news events mean to different B2B sales organizations and under what circumstances the implementation of the sales intelligence tool could succeed, the internal validity is not of concern in this study. Yin (2009a, 42-43) states that the logic in internal validity is not applicable to exploratory studies. In terms of external validity, this study aims toward analytic

generalization by conducting a multiple case study where six case companies from five different industries are involved in. Finally, this study's methods, including interview questions and procedures, are presented clearly in this paper. Thus, if the study was conducted again with the same case companies, it could be possible to arrive at the same findings and conclusions. However, it must be taken into account that every interview setting is always unique, and the amount and quality of the information given by the interviewee may vary in every interview.

3.1.3. Case companies

Six sales directors working in B2B sales were interviewed for the study. The interviewees were working in the executive, head of sales or sales manager positions in the companies and all of them were responsible for managing their sales teams. The sales experience in B2B sales ranges from 4-20 years among the interviewees and three of the interviewees had over 15 years of experience in B2B sales. Because the data collected through the interviews included sensitive information regarding companies' sales processes, buying signals and CRM strategies, the interview data is anonymised.

There were several selection criteria why these case companies were chosen for the study. The aim of this study is to gain a comprehensive view of what buying signals and important news events mean to different companies. Also, because this study follows partly inductive theory approach in terms of investigating how different firms perceive buying signals appearing on online news articles, it was important to set certain limits when selecting the target population from which the sample was drawn for this study. Eisenhardt (1989) states, *"Selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings"*. Following this guideline, the first selection criterion was to collect the data from a variety of different industries. By including companies from different industries to this study, it was possible to gain a general view of what types of news events are important and what are the requirements for the successful implementation of the sales intelligence tool. Moreover, the selection of five specific industries allowed to control environmental variation while the focus on large

enterprises constrained variation that could have occurred due to size differences among companies. Eventually, recruitment industry, IT services and consulting industry, grocery wholesaling industry, machinery and equipment wholesaling industry and equipment rental services industry were selected for the study. Two companies were included from the IT services and consulting industry in order to gain a deeper understanding of what kind of sales intelligence tool could best serve the salespeople because the interviewees work with state-of-art IT and technology solutions and were able to provide valuable information regarding the development of the product. Moreover, in order to control variation between the two companies, both interviewees work in B2B sales, but one interviewee sells IT services into the private sector and another interviewee sells IT services into the public sector. The clients and buying processes differ to some extent between these sectors and this way it was possible to gain deeper understanding of the important sales-related news events and the development of a new sales intelligence tool in IT services and consulting industry.

The second selection criterion was the company size. In this study, the company size was defined by the number of employees working for the company and the companies' annual turnover. The companies should have minimum 100 employees working for them and the annual turnover should be over 5 million euros. However, larger enterprises were favoured due their larger sales teams and operations in Finland. Larger companies also tend to adopt innovations more easily (e.g. Ko et al. 2008). Following these criteria, mainly large enterprises were selected to this study. Only one company included in this study, i.e. company A, is identified as an SME. The third selection criterion was that the sales teams should be big enough in terms of number of salespeople which should be at least 15 people working directly in B2B sales. Finally, the fourth and the fifth selection criteria were that all the companies should have business to business customers, and they must operate in the Finnish market. Table 2 presents all the companies and the company sizes.

Table 2. Information about the companies included in the study (information retrieved from Alma Talent Tietopalvelut)

Company	Industry	Company size
Company A	Recruitment	SME
Company B	IT services and consulting	Large Enterprise
Company C	Grocery wholesaling	Large Enterprise
Company D	IT services and consulting	Large Enterprise
Company E	Construction equipment rental	Large Enterprise
Company F	Machinery and equipment wholesaling	Large Enterprise

4. EMPIRICAL RESULTS AND FINDINGS

The results obtained from the case company data are introduced in this chapter. First, within-case analysis of each case company's perceived buying signals and the ideas and thoughts about the sales intelligence tool are described and demonstrated. Thereafter, cross-case analysis is conducted to answer the research questions.

4.1. Company A

Company A is a recruitment company that provides a variety of recruitment services to companies that are looking for new employees specialised in IT, technology or business. Interviewee 1 has worked in company A in B2B sales for over 4 years and currently works as a Chief Operating Officer (COO). Over 20 people work directly in B2B sales in company A. (Interviewee 1 2019)

4.1.1. Company A: lead generation and buying signals

To generate sales leads, company A uses Vainu that is a sales intelligence platform providing real-time company data sales, such as prospect lists, account research and data integration (Vainu 2019). Some salespeople use it more actively and order signals from Vainu and some salespeople do not use it as actively. Company A thinks that Vainu works well and it provides sales leads and signals that are relevant to company A. Vainu is also integrated into company A's CRM system and the user can use the signals she wants to receive to the CRM system. Vainu sends every week a summary which includes all the relevant information of a salesperson's customers and leads. Interviewee 1 states that Vainu is a good system for acquiring new leads and growing customer relationships with bigger corporate clients. However, in account management it is less relevant because the information that the customer shares in the sales meetings is more important than the information that Vainu provides. In addition to Vainu, Company A has a media RSS feed that is synchronized with their instant messaging platform Slack. By and large, company A

receives buying signals from Vainu, business news and social media channels, such as LinkedIn. The extent of how much salespeople consume business news in company A varies widely among the salespeople. Some salespeople read business news frequently and some do not. (Interviewee 1 2019)

4.1.2. Company A: the most important sales-related news events

Interviewee 1 states that principally any business news article that indicates a company is growing its business is a buying signal to company A. These news events are important because they can mean that the company is recruiting new employees. The news articles may contain news events, such as a company is recruiting, a company is growing, or a company gets funding. A headline stating *"Company X located in Jyväskylä needs 80 new employees"* would be an example of a critical buying signal to company A. Also, news articles about a new contact person is relevant information for company A. In terms of company acquisitions and mergers, interviewee 1 states that company acquisitions often confuse matters in a company for a while and such an event is not particularly a buying signal to company A, but it is still wise to meet with HR and discuss their recruitment plans for the future. (Interviewee 1 2019)

In theory, a news article about employee cooperation negotiations is a negative signal for company A but it may also be a positive signal if the company needs new employees after the negotiations. Thus, a news event about employee cooperation negotiations can be partly perceived as a buying signal. Also, if company A's competitor is looking for new employees for another company, it is a negative signal in the short term, but a positive signal in the long term because it means that the company uses recruitment services. In terms of relevant negative signals, a news article suggesting that a company's business is weakening is a relevant negative signal to company A. This type of news event may indicate that the company is more careful with their investments and therefore the recruitments are also on hold. Other relevant negative signals can be, for example, that a company pulls out its business from Finland or a company goes out of business. Company A mainly operates in Finland and if another company moves its operations out of Finland, the likelihood

of cooperation will also be significantly reduced. In addition, interviewee 1 states that perhaps establishing in-house recruitment teams can be a negative signal because it may mean that a customer decides to carry out all their recruitments by themselves. (Interviewee 1 2019)

Table 3. The most relevant positive and negative news to company A

Positive News
• Company is recruiting • Company is growing, expanding or their order backlog grows • Company gets funding • Company has won a tender or acquired a new customer • Company is investing • Company has a new contact person • Company acquisition or merger
Negative news
• Company's business is weakening • Company starts employee cooperation negotiations • Competitor is looking for new employees for the company • Company pulls out its business from Finland • Company goes out of business • Company establishes in-house recruitment teams

4.1.3. Company A: sales intelligence tool adoption and implementation

Interviewee 1 highlights that the sales intelligence tool should be intuitive, and it should be easily integrated into the other systems so that the automation works the best possible way. Interviewee 1 doubts that if the sales intelligence tool is not smoothly integrated into the other systems then company A would not buy it. In addition, the sales intelligence tool should not send any irrelevant information. (Interviewee 1 2019)

"It is quite important that the signals that come from the sales intelligence tool are actually relevant and not kind of 'Here are the keywords'… I mean it is relevant for us if the tool sends a news article with a headline 'Company X is recruiting 100 new employees within the next year' but a less relevant article for us would be an article with a headline 'Company X's HR is visiting on a podcast'. So, in a way the sales intelligence tool may use the same key words, but it does not necessarily mean anything for us. For this reason, the signal quality has to be quite high so that it actually warms up a sales lead and also, the sales intelligence tool should be well integrated into the other systems."
(Interviewee 1 2019)

Interviewee 1 also emphasizes that if the news article is shown only in the CRM system it does not necessarily mean that the salesperson has received any notification of it. Thus, if the signal is urgent it has to come to company A's instant messaging platform Slack in a form a newsletter that states, *"Here are all the relevant news articles on your customers and sales leads"*. The best sales intelligence tool would be one that links the news articles directly to the CRM system and also sends a newsletter to a salesperson. Interviewee 1 suggests that the newsletter could contain three different categories of news*: (1) these news articles are important in terms of account management but do not require any immediate action, (2) these news articles are important in terms of account management and, (3) this is a critical buying signal.* Interviewee 1 clarifies that a critical buying signal would be the set of positive buying signals that he mentioned before, such as a company is recruiting new employees, or a company gets a funding. Usually the

sales follow-up is 90 days in company A which means that the salespeople contact their leads and customers every three months. Hence, it is very important that the salesperson receives a notification if there is an urgent buying signal regarding a sales lead or a customer. In addition, the salesperson should also have access to the news article. (Interviewee 1 2019)

If company A decides to start using the sales intelligence tool, there should be a dedicated team assigned to the implementation of the sales intelligence tool. In order to ensure successful deployment of new technology, the deployment team should have a project owner who has a technical understanding of the sales intelligence tool. Also, there should be a person who uses actively the tool in the team. The best salesperson is not necessarily the first person who starts using the sales intelligence tool, but the person who is most interested in the tool may be the first one who gets enthusiastic about the tool. The sales intelligence tool should be so well developed that it does not require any manual work from the salesperson. Furthermore, integrating the sales intelligence tool with CRM should not be too troublesome. (Interviewee 1 2019)

“The best salespeople may think of the sales intelligence tool that ‘Nice tool’ but they do not have time to learn to use it. Thus, the first question they may ask is, ‘How do I get this tool work for me automatically?’”
(Interviewee 1 2019)

Using the sales intelligence tool would most likely enable better sales performance in the meetings and the salespeople could make sales more efficiently. The buying signals are beneficial for company A, even in the sales prospecting phase. However, interviewee 1 considers that the tool would be most useful when the sales lead has already been met because when the tool notifies the salesperson of the relevant buying signal, then the salesperson has already some sort of relationship with the sales lead and knows about the company’s business. This way it is easier to offer suitable solutions and set up a new meeting. Therefore, the extracted news articles would be more valuable when selling to warm sales leads because receiving the buying signals at the right time increases the likelihood to convert sales leads into

paying customers. Moreover, by using the sales intelligence tool, the salespeople would have better knowledge in the sales teams and salespeople would receive more hints when they should be in contact with the sales leads. Interviewee 1 suggests that the tool could be suitable for a company that focuses in inbound sales because the tool could warm up existing customer relationships. In addition, the sales intelligence tool could be beneficial in marketing automation. The tool could analyse the relevant news articles and then suggest the content that could be targeted to the decision makers. (Interviewee 1 2019)

Interviewee 1 agrees that all kinds of information is always important, and most sales directors typically want their salespeople to be out in the field talking with sales leads and customers. Thus, if the sales intelligence tool helps to warm up sales leads and customers, then it is a good product. However, interviewee 1 states that making sales calls is the most important thing in B2B sales in company A. In addition, the salesperson most likely gets the same information on the phone as he would get from the news article. When it comes to booking meetings, interviewee 1 doubts that HR chooses to meet a salesperson based on his knowledge of the news about the company. If a salesperson is good at making sales calls, he will get the meeting with HR. (Interviewee 1 2019)

Interviewee 1 questions also the need to read the whole article and usually the headlines that are not behind the paywall may be enough for the salespeople. For instance, if there is a headline stating, *"Company X is recruiting 200 new employees within the next quarter"*, then it may not be necessary to read the whole article. Although interviewee 1 agrees that the automation would be a valuable addition. Interviewee 1 considers that the best way to sell the sales intelligence tool to company A is to provide data that proves the tool is working. Reference cases are important, and they should state, for instance, *"Company X managed to book more sales meetings".* On the contrary, the sales directors are not interested in reference cases stating, *"10 000 articles were sent using this sales intelligence tool"* because no one has time to read such data. (Interviewee 1 2019)

4.2. Company B

Company B is an international company that offers IT services and consulting to a wide variety of clients both in private and public sector. Interviewee 2 in company B is responsible for selling IT services into the public sector and has worked in the company for almost 20 years. Company B pursues to develop strong client relationships. Client Executives, who are responsible for sales in Company B, may only have one or several big clients. Client Executives' main task is to have a comprehensive view of their clients and know where their clients stand in order to offer suitable IT solutions to them and perform well in sales. This also means that Client Executives need to know all the important contacts in the client company. Client Executives focus on the big picture and they aim to develop IT services and consulting as a whole to their clients. Therefore, Client Executives need to have the expertise to discuss IT systems and their clients' business in order to provide right IT solutions to their clients. Company B is a significant supplier to their clients and company B has strategic partnerships with their clients. Therefore, buying signals are more based on deep customer understanding rather than on outside knowledge obtained from news articles. (Interviewee 2 2019)

4.2.1. Company B: lead generation and buying signals

Company B aims to be involved in the early phases of clients' buying processes. Often company B receives a signal from a client before reading or notifying it from somewhere else. For instance, company B may hear that their client is planning on starting a cloud computing project and then in the next meeting company B hears that a request for tender begins in March which leads company B to start the preparations for the tender. For this reason, interviewee 2 states that knowing their clients profoundly is salient in order to book more meetings and make more sales. Therefore, the data that comes from a client is more important than the data that comes from the market. Of course, external information is important too and it can pass a buying signal but in the big picture the sales in company B is generated by knowing and understanding deeply their client and collecting the relevant data.

Although interviewee 2 states that they should not underestimate the value of knowledge obtained from the news articles because it is impossible to know everything about the clients and the news articles may provide novel information about their clients. (Interviewee 2 2019)

Company B checks regularly HILMA or www.hankintailmoitukset.fi (Hankintailmoitukset 2019) which is a website in which ministry of employment and the economy of Finland publishes public procurements. HILMA is a channel where the formal procurement of services commences, and it is a significant channel for company B. Interviewee 2 emphasizes that HILMA is the most important channel for lead generation in B2B sales into the public sector. Company B follows also other channels, such as different newsletters published by public sector. Interviewee 2 states that it is partly every Client Executive's own responsibility to follow different channels and there are many of these channels that Client Executives follow. In terms of following news articles, interviewee 2 comments that they are quite liberal on how much Client Executives read news and there are no specific rules what external information sources they should use. Company B has also assigned a few people to follow HILMA and pass the important information to other employees so that they do not miss an important procurement that has been published. (Interviewee 2 2019)

In addition to HILMA, bulletins published by public administration are important to company B. For instance, defence administration may state in a bulletin that they are purchasing fighter planes and by reading that information company B aims to understand what kinds of IT solutions may be involved in the procurement of fighter planes. Interviewee 2 highlights that IT is tied to many projects nowadays and IT solutions are a matter of interest for all kinds of executives and directors today and particularly for people who are involved in projects where new IT systems are developed. For instance, when developing IT systems for juridical administration it is crucial to discuss with the person who works in the courtroom rather than discuss with Chief Information Officer in the IT department. Therefore, the contact people are usually the people who are responsible of the subject matter not the people who are responsible for the technology and IT systems. Interviewee 2 emphasizes that

the most crucial matter is to discuss with the right people in order to get the right buying signals that correspond to actual needs. (Interviewee 2 2019)

4.2.2. Company B: the most important sales-related news events

Interviewee 2 highlights that news articles are important to company B and buying signals can appear on relevant news articles. These news articles could be related to public administration's needs and information systems development, such as the Finnish administration aims to improve its child benefit system. Then company B can start a conversation with Kela and discuss their needs and what kind of IT system could support the new child benefit system. Therefore, news articles that are directly or somehow related to information systems development are relevant to company B. (Interviewee 2 2019)

"If there is a news article about development of intelligent prison that is a buying signal to us. What does an intelligent prison mean? That should immediately ring a bell and we should start considering who should we talk with and what does an intelligent prison mean as public procurements in the future."
(Interviewee 2 2019)

Other important business news for company B are consolidations of different public offices because usually then IT systems are being renewed and set up again. News articles about competitors are also interesting to company B. For instance, if a competitor has failed in some project that is relevant news for company B. Interviewee 2 states that they willingly follow competitor news because information of competitors is always interesting, and it can open up new business conversations. (Interviewee 2 2019)

In terms of negative news articles that are relevant to company B, interviewee 2 states that some negative news may actually include buying signals for company B. For instance, a news article stating that some client or sales lead may be cutting costs may actually be a positive news for company B because sometimes the need for automation or the willingness to develop new methods is higher and in those

problems company B can help. For instance, a tax office may need to reduce a number of their employees and some of their work could be handled more efficiently with various IT solutions. (Interviewee 2 2019)

Interviewee 2 states that perhaps a negative signal could be a news article stating that some client or sales lead has created a partnership with a competitor and the contract periods are often quite long. However, interviewee 2 emphasizes though that one should not think they should not sell to a client or sales lead because they read a negative news article of a client or sales lead. (Interviewee 2 2019)

Table 4. The most relevant positive and negative news to company B

Positive News
• Company is starting a procurement that incorporates IT systems development • Consolidations of public offices • Company is growing, expanding or their order backlog grows • Company gets funding • Company acquisition or a merger • Company is investing • News articles about competitors
Negative news
• Company’s business is weakening • Company starts employee cooperation negotiations • Company is cutting costs • Company has a strong partnership with a competitor

4.2.3. Company B: sales intelligence tool adoption and implementation

Interviewee 2 states that there should be an integration to the CRM system so that the relevant news articles would be linked to the accounts in the CRM system. Also, the sales intelligence tool should pick intelligently which news articles it links to the CRM system. Then all the relevant news articles could accumulate into the account information and if that information is consolidated into the client portfolio then the information as a whole would be valuable for company B. In addition, there could be an automated newsletter or application that comes up on Client Executive's computer screen when she comes to work and shows as a notification the most relevant news articles on their clients or sales leads. Interviewee 2 comments that sales intelligence tools that would work like this do not actually really exist in the market and could be beneficial for company B if it generates relevant content sufficiently. (Interviewee 2 2019)

Interviewee 2 thinks that the role of managers and training affect to some extent to the successful deployment of the new sales intelligence tool but the sales intelligence tool should also be so intuitive and easy to use that the Client Executive gets the hang of it immediately and understands that it is for her benefit to start using the new sales intelligence tool. Interviewee 2 thinks that in-depth insight and understanding of the clients is a big part of the Client Executive's expertise and if the tool helps the Client Executive to understand and know better their clients, then Client Executives would have great motivation to start using the tool. The sales intelligence tool would not only help to understand client comprehensively, but it would improve the Client Executive's knowledge of company B's competitors. Barriers to using the tool may be, for example, if the tool does not provide the Client Executive with an experience that it actually helps in sales and if the Client Executive needs to separately sign into the sales intelligence software in order to access the news information. (Interviewee 2 2019)

In order to succeed in the implementation of the sales intelligence tool, interviewee 2 comments that it would require a time period for the product launch. First company B could start with a pilot period and begin gradually using the tool and then finally

use the sales intelligence tool in a daily basis. Interviewee 2 comments that they would first like to see with a smaller team what kind of user experience the sales intelligence tool offers and what kind of content does it link to its user. (Interviewee 2 2019)

4.3. Company C

Company C operates in the grocery wholesaling industry and sells a wide variety of food items to restaurants, coffee shops and hotels in Finland but most of company C's customers are restaurants. Interviewee 3 is the head of sales in company C and has worked in B2B sales in the grocery wholesaling industry for over 20 years. The sales team in company C consists of 19 people who work directly in B2B sales. In general, most of the sales is generated on online store where company C's customers can buy grocery items and company C delivers them directly to their customers. Company C aims to build strong customer relationships and create partnerships with its customers by delivering quality service and making long-term contracts with its customers. This is actually salient for company C because there are low sales margins in grocery wholesaling industry and therefore company C has to aim to sell a high volume of wholesale groceries to their customers in order to generate profit. Company C does not significantly focus on outbound sales except in cases when the salespeople are seeking for new customers. However, acquiring new customers is not an easy process. In the food industry business, the number of new restaurants increases only around 2% every year and this annual change influences the revenue that company C generates annually. In addition, it may take around 3 to 4 years to acquire a new customer. Therefore, company C has to look 2 years ahead when they begin a sales process with a new customer and focus on getting to know to a customer in-depth. (Interviewee 3 2019)

4.3.1. Company C: lead generation and buying signals

Company C uses actively Vainu which provides relevant and up-to-date information about restaurants. Most buying signals come from Vainu which offers the most

relevant information that company C needs and the information can be linked to company C's CRM system. Company C appreciates real-time data and particularly data concerning customers' buying behaviour. In order to investigate buying behaviour thoroughly company C has recently started to use a marketing automation system that informs the selection of products that a customer has bought from company C. Having this information, company C compares similar restaurants with each other in order to discover what types of products one restaurant buys and another does not. By doing this company C is more aware what additional products it could sell to another restaurant that does not buy the same products as the similar restaurant does. This way company C also segments its customers and knows what types of products it should sell to its customers that differ from each other with regard to their previous purchases. In addition, the marketing automation system sends messages automatically to customers and salespeople working for company C. Company C also cooperates with other large food companies and these companies may also inform company C of potential sales leads. (Interviewee 3 2019)

4.3.2. Company C: the most important sales-related news events

Company C benefits from market information that is related to general changes regarding restaurants, such as if a restaurant has moved to a new location restaurant or if there is a new restaurant in the market. Also, if a new restaurant manager has been assigned to a restaurant that is also important information for company C because some managers may prefer other grocery wholesaling companies. Competitor news is somewhat relevant for company C but interviewee 3 states that grocery wholesaling business is quite similar in different companies in the market. Moreover, news about customers or leads' growth and development is a positive buying signal to company C. (Interviewee 3 2019)

In terms of negative news, interviewee 3 comments that company C does not want to spend their time with companies that are in financial trouble. Also, if a company or sales lead has been caught for its unethical actions that is also a negative signal to company C. Such actions may relate to how they treat their employees or if they pay their employees below the minimum wage. (Interviewee 3 2019)

Table 5. The most relevant positive and negative news to company C

Positive News
• Company has moved to a new location • New company enters the market • Company's manager leaves or changes • Company is growing, expanding or their order backlog grows • Company acquisition or a merger • Company is investing • Company has won a tender or acquired a new customer
Negative news
• Company's business is weakening • Company's behaviour or actions are unethical

4.3.3. Company C: sales intelligence tool adoption and implementation

Interviewee 3 states that the sales intelligence tool should be integrated to their CRM system. The CRM system in company C is well automated and all sales-related tasks can be handled in their CRM system. If the sales intelligence tool worked with their CRM system and provided relevant information automatically that would be a significant matter for company C. By automating relevant information and integrating it to the CRM system it would also increase salespeople's awareness of the future events and could help them in sales. Interviewee 3 states that company C aims to provide good facilities for their salespeople so that they can mainly focus on the sales. The salespeople should perceive the new sales intelligence tool useful and it should make salespeople's daily work easier. (Interviewee 3 2019)

In order to successfully implement the new sales intelligence tool, interviewee 3 comments that it should be somewhat compulsory for their sales team to use the sales intelligence tool. Salespeople with more experience may think that they have better means of making sales and may not begin to use the sales intelligence tool in their daily work. Interviewee 3 thinks that it is not easy to teach new methods for a salesperson. Training would be necessary if company C began to use the sales intelligence tool. There are a variety of salespeople of different ages and interviewee 3 thinks that younger salespeople know better the analytics nowadays and they often bring new perspective and new methods to daily sales. Younger salespeople teach the experienced salespeople to do things in different ways. (Interviewee 3 2019)

Additionally, in company C salespeople perceive the environment competitive because salespeople can see each other's sales revenues which encourages them to achieve better work results than their co-workers. Thus, if the sales intelligence tool helps to make bigger sales then salespeople would be motivated to use the sales intelligence tool. In addition, company C has an incentive pay system so the more salespeople make sales the more they will get paid. Company C also appreciates support and if they deployed the new sales intelligence tool, they would appreciate that support is easily available. In the planning and implementation phase there should be also a team consisting of employees working for company C who could influence the types of news articles that the sales intelligence tool would link to their CRM system. (Interviewee 3 2019)

4.4. Company D

Company D operates in IT services and consulting industry. Interviewee 4 is a sales director in company D, and he is responsible for leading salespeople and client executives and he works closely with business unit directors. Interviewee 4 spends mostly his time on B2B sales by nurturing, consulting and building client relationships with a few bigger clients. Interviewee 4 has worked in B2B sales in IT services and consulting industry for over 15 years and his extensive experience in

the industry indeed spoke for itself in the interview. Company D has 15 salespeople who solely work in B2B sales. Many consultants in company D are also responsible for the management of relationships with particular clients and business unit directors also work in B2B sales. Therefore, around 50 people in company D work directly or indirectly in B2B sales. (Interviewee 4 2019)

Company D provides mainly Management Services and Technology Solutions to its customers. Management Services include technology management services that are designed to help companies in situations when they face challenges to transform digital innovations into technologies that are systematically managed for the benefit of the company. To address these challenges, a consultant working for company D leads some of the client's business areas that is related to technology management. The models of management are co-developed constantly and implemented together with company D's clients. Previously company D was established to solve challenges related to IT management but a few years ago they realized that they could no longer talk only about IT for their customers because nowadays technology is tied to all types of products and services that clients produce and sell to their customers. For instance, if a Finnish company Kone operating in the elevator and escalator industry sells an elevator, it is no longer just an elevator, but a platform full of data and sensors. This will help Kone better understand what types of services people use when they are riding an elevator. Today technology is no longer just a support function, but more a key competitive factor in business. Leading this technological change is one of the key services that company D provides to its customers. Technology Services refer to services where company D provides products that support the technology management in client's business. For instance, ServiceNow, Oracle, Salesforce and SAP are some of the main systems that company D provides to their clients. About 70-80% of Finland's largest companies make up company D's largest customer segment. In addition to large companies, company D provides its services to public administration and SMEs. (Interviewee 4 2019)

4.4.1. Company D: lead generation and buying signals

Interviewee 4 states that their consultants who work for a client are very successful at generating leads and sometimes even close deals. Usually these consultants are closely involved in client's business and therefore know what technological solutions can be used to solve different problems. Company D also receives buying signals when company D's customers or sales leads visit a website where company D has published marketing content. Customers or leads that react to this content leave their mark on the website and this way marketing can generate new sales leads. In addition, company D meets a lot of customers and potential sales leads in different events. (Interviewee 4 2019)

Interviewee 4 states that company D's network is exceptionally good. Company D's clients trust company D so well that they engage company D in discussions on what they intend to do in the near future and the information shared in these discussions is extremely valuable for company D. In order to earn this trust company D continuously creates added value to its clients in exchange for the information that its clients share with company D. Interviewee 4 states that they also highly challenge customers in the meetings by asking questions and suggesting new ideas that might not have occurred to their customers before which also often generates demand for company D's services. At times a consultant working for company D begins to work for a client and keeping in contact and maintaining relationship with a former employee is also another way to generate a new sales lead. Employees in company D use all kinds of Finnish media and it is everyone's own responsibility how much they consume work-related news. Interviewee 4 states that he generates around two to three sales leads by reading the newspaper or social media on a weekly basis. (Interviewee 4 2019)

4.4.2. Company D: the most important sales-related news events

Interviewee 4 states that all kinds of turning points in company's business are buying signals for company D. These turning points could be, for example, a new service, opening a new location for business, changing technologies or systems,

organizational change or a company acquisition. Generally, at these situations companies face new business demands and they need to build an agile environment and these demands create a need for new technologies and systems. Interviewee 4 also highlights that it is very important for company D to know if a key or contact person is leaving the company or changing jobs. This is because business is based on trust and company D often gets a new client when someone in a current client company starts to work in a new position and in a new company. (Interviewee 4 2019)

Interviewee 4 highlights that the buying signal quality has to be accurate and relevant. For example, if there is a news article where a CEO in a big corporation has been interviewed and he happens to reveal a buying signal it may be too late for company D. Because in this case the whole market has already read the same news article and salespeople from different organizations call the CEO to discuss their solutions. Therefore, at this point, company D is just one of many. For this reason, it is more important to find a little piece of information which could be a buying signal that only company D recognizes. This piece of information could be, for instance, about company acquisition or corporate transaction that happens behind the scenes or is not widely spoken. Then company D can connect the dots and combine the information revealed in the news article with the information they have received from their customer or their consultant. This way company D can come to a conclusion and understand that the piece of information obtained from news could be a competitive advantage for company D. So, all the other competitors may also see the same news article but because they do not have the rest of the puzzle and they do not see the whole picture, they do not necessarily see the same news article as a buying signal. And particularly for this reason, company D emphasizes that the buying signal quality has to be very high in order them to be able to combine the information coming from both news and the customer or their consultant. (Interviewee 4 2019)

Therefore, only interpreting a random business news article alone is not enough. Interviewee 4 states that the same law of detecting buying signals can be applied to social media. If someone in LinkedIn, for instance, posts an update that company D

can only interpret as a buying signal, but their competitors do not view it as a buying signal, then it is a valuable source of information for company D. Interviewee 4 highlights that combining market information with the information that they receive from the customer or their consultant is tremendously important to company D. (Interviewee 4 2019)

"Success is determined by having the inside knowledge and combining it with the information found on the media. By doing this, an organization can gain a significant competitive edge."
(Interviewee 4 2019)

News articles about competitors are also relevant to company D because company D wants to avoid the red oceans which means that company D does not want to do same kinds of things as their competitors do. Company D does not have many direct competitors who would do exactly the same business as they do. Most often the biggest competitor is the customer itself because either the customer buys from company D or a customer carries out the project on its own. Company D would be interested to see news about competitors' operations, such as where they operate and where they do not operate or if company D could notify if their competitors do something in wrong way or if they invoice their customers with higher prices and so on. (Interviewee 4 2019)

Sometimes negative news or turning points can also be a buying signal to company D. For instance, a negative turning point in customer's business, such as running out of resources or a radical change in the business environment is a buying signal to company D. In addition, if a company wants to reduce personnel costs or business premises expenses, then company D can help the company and improve its business models or enhance the productivity of its technology management. However, if it is clear that some competitor is cooperating strongly with a customer or a sales lead, then it is a negative signal to company D. (Interviewee 4 2019)

Table 6. The most relevant positive and negative news to company D

Positive News
• Company develops a new service • Company is opening a new location for business • Company is changing technologies or systems • Company is undergoing an organizational change • Company acquisition or a merger • Company is growing, expanding or their order backlog grows • Company is investing • Company is going global • News articles about competitors
Negative news
• Company's key person is leaving or changing • Company is reducing costs • Company starts employee cooperation negotiations • Company's business is weakening • Radical change in the business environment • Company has a strong partnership with a competitor

4.4.3. Company D: sales intelligence tool adoption and implementation

The new sales intelligence tool should be integrated to company D's CRM system and it should be as part of their sales funnel. If the sales intelligence tool is not well integrated to the CRM system, there is a big possibility that salespeople are not eager to use the sales intelligence tool and, according to interviewee 4, may think, *"Oh no, not again a new tool!"* which is the reaction that company D wants to avoid. The sales intelligence tool has to be efficient and deliver results and it should provide

a successful pilot period. The sales intelligence tool should also learn from its data. In other words, the more the user uses the sales intelligence tool, the better the sales intelligence tool should be at linking relevant articles to the user. Hence, the sales intelligence tool would learn from the data and gradually link as relevant articles as possible to the user. Interviewee 4 states that this is a must-have feature in the sales intelligence tool and the whole service should be based on it. Hence, it should be part of their CRM system and in addition, the user would produce data to the system. The user should also have a possibility to make adjustments to the sales intelligence tool, but it should also work well without any adjustments. Thus, the sales intelligence tool should initially be very good but then the user should also have an opportunity to customize it and, for example, she could emphasize the machine learning feature in the sales intelligence tool. For example, the user could choose the articles that are useful in sales and then the algorithm would learn from the user's preferences. (Interviewee 4 2019)

Entrepreneurship and success are some of the key factors that are valued in company D and particularly in their sales organization. If a salesperson is successful in sales, it will be acknowledged. Therefore, if someone's sales performance increases by using this sales intelligence tool then other co-workers also gain interest towards the sales intelligence tool and are more motivated to use it. Therefore, competitive salespeople play a huge role in adopting the sales intelligence tool successfully in company D. In addition, salespeople's salaries are fully commission-based so the salary is 100% based on the amount of sales an employee makes. This also increases the desire to earn more money and if the sales intelligence tool helps to make more sales, the salespeople will be motivated to use it. (Interviewee 4 2019)

Interviewee 4 also highlights that the news has to come in absolute real time. According to interviewee 4, currently the biggest weakness in company D's sales process is the early stages of the sales process. Company D's salespeople have no problem setting up meetings or filling their calendars, but it is important for them to think carefully where they put their energy before they start working on sales. Therefore, if the sales intelligence tool provides quality sales leads in the early

stages of the sales process, then it would be very useful for company D. (Interviewee 4 2019)

4.5. Company E

Company E is a construction equipment rental company and it provides construction equipment and construction site services to various organizations including big construction companies and Finnish cities and municipalities. Private customers can also rent equipment and machinery from company E, but the salespeople in company E are not responsible for the B2C sales. Interviewee 5 has worked in B2B sales in company E for over 4 years and currently works as a superior in the sales team that operates in the Helsinki metropolitan area. The sales team in company E consists of 85 people in Finland. Company E operates widely in different European countries, but Finland and Sweden are its main markets. (Interviewee 5 2019)

4.5.1. Company E: lead generation and buying signals

Company D uses Vainu and FaktaNet Live to generate leads. Faktanet Live (https://faktanetlive.fi) publishes upcoming construction projects which is useful information in terms of sales for company E. Big construction companies also publish bulletins on their website and inform what projects they have won and agreements they have made. Company E's marketing department also follows customer buying behaviour on company E's online store and they have a chat service on company E's website where potential customers can leave a call for tender. The salespeople in company E move a lot on the field selling company E's solutions and interviewee 5 highlights that it is important that the salespeople pay attention what is happening in the environment when they move in their territory. Interviewee 5 states that the good part of their sales is that projects are noticeably displayed on site and the site board shows the contractor and the contact information. Sometimes salespeople also make cold visits which means that they go to construction sites and ask directly from a potential customer when they could have a meeting or if the person is free at the time then they might have a meeting

right away. Customers are often very busy, and it can be challenging to set up meetings with them and hence the cold visits are an efficient way to make sales. Company E also attempts to get a list of upcoming projects from their big clients and from those lists they can see who is responsible for the project. Company E also receives a report of the companies that have gone bankrupt and which companies are in debt collection. (Interviewee 5 2019)

The most optimal time to make sales is before the project starts because then construction companies have a need for equipment and machinery. In construction industry, it is typical that the customer only buys when they have an actual need to rent equipment and machinery. Interviewee 5 states that in a way a new project is always a new customer even though company E and its customer had cooperated earlier. This is because construction business is very project-based. But even if the project had already begun, it is not too late for company E to sell its services. Projects last 1-3 years and it is not practical to have all the equipment or machinery at the start of the project. Therefore, the market is open even if the project has been running for a while. However, the competition has also intensified, and new players have entered the market. This makes selling more challenging. If the customer starts a new project in which they may need, for instance, offices and accommodation units, and if company E has not been in contact with the customer but their competitor has then it may be too late for company E to make sales. Therefore, timing is very crucial, and it is important for a salesperson to keep their eyes constantly open in case customers need to rent equipment or machinery in construction projects. (Interviewee 5 2019)

4.5.2. Company E: the most important sales-related news events

Interviewee 5 states that there is a lot of turnover in the construction industry and the site supervisors are the key people in construction business. Therefore, if a site supervisor is changing or leaving, that is important information to company E. In addition, news about upcoming projects that are in preparation is certainly relevant information to company E. It is also important for company E to know when the constructor has been selected to the project and when the agreements have been

made, because once the choices have been made, then it is an optimal time for company E to sell its services. In terms of negative news, company E does not rent equipment or machinery to companies in bankruptcy or debt collection.

Table 7. The most relevant positive and negative news to company E

Positive News
• Company is preparing an upcoming construction project • Constructor has been selected to a construction project • Company has won a tender or acquired a new customer • Company is investing • Company acquisition or a merger • Company is growing, expanding or their order backlog grows
Negative news
• Company's key person is leaving or changing • Company's business is weakening

4.5.3. Company E: sales intelligence tool adoption and implementation

Interviewee 5 states that the sales intelligence tool should be easy to use and if the sales intelligence tool is integrated into the CRM system then the user should have access to the news. Interviewee 5 highlights that the sales intelligence tool should certainly not be one that requires the user to log in separately. Once the user has logged into the CRM system then the user should have directly access to the sales intelligence tool. Salespeople have sales targets set and everything that makes easier to reach those targets motivates salespeople. Interviewee 5 thinks that individual's IT skills do not play a major role in the implementation of new sales intelligence tool, rather if the sales intelligence tool is difficult to use then the

salespeople will give up using it. If, however, the salespeople perceive that the sales intelligence tool brings added value to their sales work and it makes sales easier, then the salespeople will be motivated to use it. The sales intelligence tool would also help the salespeople in the sales meetings because they could show that they are knowledgeable and prepared for the meeting. Interviewee 5 thinks that there is no specific barrier using the sales intelligence tool unless the salespeople will not perceive it useful. And if there are many different costs that have to be taken into account, such as company E has to pay to both CRM supplier and sales intelligence tool supplier, then that may also be a barrier. Interviewee 5 states that they welcome new sales technologies and in case company E finds after 6 months that the sales intelligence tool is not useful then they will not continue using it. (Interviewee 5 2019)

4.6. Company F

Company F operates in machinery and equipment wholesaling industry. Interviewee 6 has worked in B2B sales in company F for over 20 years and company F has over 150 people who work in B2B sales. The salesforce in company F is vast because company F sells their products directly to their customers instead of selling them through a retail distribution channel. Company F's products can be purchased at their retail store, online store or from their sales service or salespeople. Company F produces all its products by itself and it mainly sells them to construction industry and energy and industrial sectors. Company F sells mainly construction hand tools which can be used for drilling, fixing, measuring, cutting and sawing. In addition to hand tools, company F sells different types of accessories and software used in construction business, among other products. (Interviewee 6 2019)

4.6.1. Company F: lead generation and buying signals

The sales process is very proactive in company F and is mainly based on maintaining and growing long-term customer relationships. Company F does not seek actively new customers because all the relevant companies in construction business are already somewhat customers to company F. Therefore, company F

strives to grow the amount that their customers spend on their products. Company F has around 6000 to 7000 customers in Finland but out of these customers company F particularly focuses on 2500 customers who have potential to buy a great number of company F's products. Company F's salespeople meet these customers at least once a month and particularly aim to discuss with the people at the highest hierarchical level, such as CEOs, in order to cooperate as much as possible. Company F invests heavily on research and product development, resulting in 60 new products every year. This also gives a reason for company F to meet with their clients and discuss what products would best serve the customer. Company F values mostly the information that they receive directly from their customers. However, there are also a few external sources that salespeople follow to keep themselves updated what is going on in the market. The main sources that the salespeople follow are FaktaNet Live and Rakennuslehti (https://www.rakennuslehti.fi) that publishes information about what is happening in the construction business. Company F also encourages the salespeople to use LinkedIn and connect with their customers on LinkedIn in order to stay on top of industry trends. Company F's marketing department also passes sales leads for the salespeople. (Interviewee 6 2019)

4.6.2. Company F: the most important sales-related news events

Interviewee 6 states that one of the most significant buying signals is when a customer has won a construction project. At that time, customer will begin the preparations for the project, and this is the time when company F has a great opportunity to influence the decision-making and sell its products before the customer starts the project. Another signal to be in touch with the customer is when companies merge together or when a company is acquired – although company F often gets this information from the customer. Company F may have agreements with both customers and if another company has bought significantly more products from company F than the other company has bought, then company F strives to maintain its position as the main supplier to the new combined company. Sometimes the other company may have bought construction tools also from another supplier or may have had different kinds of agreements with other suppliers which may affect

company F's sales. A buying signal may also be if a company announces that they are planning to develop some business area related to construction in the future. (Interviewee 6 2019)

When it comes to negative news company F often already knows if customer's financial situation begins to deteriorate because company F's financial department will be informed of this. Therefore, it is not necessary for company F to read it from the news. Negative news may be if company F's good client has lost a significant tender and some other company that company F does not have a good relationship with wins the tender. Then company F has to think again how they can develop a better customer relationship with the company who won the tender. The news about key person who leaves the company or someone who becomes a new key person is also important to company F and is highly related to news about company acquisition and merger. (Interviewee 6 2019)

Table 8. The most relevant positive and negative news to company F

Positive News
• Company has won a tender or acquired a new customer • Company is growing, expanding or their order backlog grows • Company is investing • Company acquisition or a merger • Company communicates that it intends to develop some business area related to construction
Negative news
• Company's key person is leaving or changing • Company X has won a tender and company F does not have a good customer relationship with company X

4.6.3. Company F: sales intelligence tool adoption and implementation

Interviewee 6 highlights that the information has to come in real time, and it should be novel meaning that when the salesperson reads the news article, she hears about it for the first time. If the salesperson has heard about the news a month ago, she is no longer interested in using the sales intelligence tool. The tool should also help the salesperson to know their customer better before going to a sales meeting. In addition, the sales intelligence tool should link only a limited amount of information so that the salesperson bothers to read it. The information should be well summarized and only include the main points. If the information provided by the sales intelligence tool is novel and well-structured, the salespeople will be most likely interested in using it. The salespeople must constantly prioritize what they are spending their time on. In theory, it is easy to focus on the right things in B2B sales but in practice all the salespeople have their own personalities which affects to the usage of the sales intelligence tool – some salespeople may highly value the information that news articles provide and some may think that they rather meet the customer and get the information from there. (Interviewee 6 2019)

Training and education are highly valued in company F and interviewee 6 states that they do not deploy a new sales intelligence tool in company F unless they are not ready to invest in education and training. Interviewee 6 also emphasizes that training is only 10% of the implementation so company F should also have other means to ensure that the salespeople begin to use the sales intelligence tool. The superiors in company F play an important role by working a lot with the salespeople and they can support and ensure that the sales intelligence tool will be used among the salespeople. The salespeople would most likely use the sales intelligence tool to acquire information of their customers or know what is going on in their sales territory. However, the information provided by sales intelligence tool is useless unless a salesperson uses it to improve his sales performance. Therefore, it is crucial to a salesperson to understand why the sales intelligence tool is useful in sales. (Interviewee 6 2019)

4.7. Cross-case analysis

The previous subchapters describe separately for each case company what news events are perceived as buying signals or important market information and what factors lead to the implementation of the sales intelligence tool. The aim of cross-case analysis is to discover similarities and differences between the types of news events that are perceived as important market information on customers and sales leads and the views on the sales intelligence tool adoption. The findings will be also mirrored to the theoretical framework. The study's research questions will guide the cross-case analysis.

How to ensure the successful development and implementation of the sales intelligence tool in B2B sales organizations?

The previous subchapters describe the news events that are regarded as important market information from each case company's perspective and the actions that should be taken in order to ensure the successful implementation of the new sales intelligence tool in sales organizations. The similarities and differences will be discussed in the following research questions in detail. Overall, it can be argued that some specific news events on customers and sales leads are generally regarded as important market information in every case company.

R1: What types of news events on customers and sales leads are important in different B2B sales organizations?

This study held five large enterprises and one SME operating in five different industries. The within-case analyses disclose both similarities and differences between the news events that are important to the case companies in terms of B2B sales. In this question, clear similarities and differences between the case company-specific buying signals and relevant market information are discussed. Next question addresses the adoption of sales intelligence tool.

When it comes to discovering clear similarities between the news articles that are useful in B2B sales, all case companies consider that news articles about business growth, business expansion, growth of a company's order backlog, acquisitions and mergers and a company is investing are important business news to them. Furthermore, if a company has won a tender or acquired a new customer, companies A, C, E and F regard it as a buying signal. Companies E and F also consider upcoming construction projects as buying signals. Business growth is generally perceived as an important buying signal because it indicates that a company is likely going to invest in other business areas. Growth also implies that a company is resourceful and is able to make investments. Thus, business growth signals that a company may have a need for the services or products that the case companies provide, or a company can possibly afford them.

In terms of acquisitions and mergers, companies B and D mention that usually then IT systems are being set up again. Company F aims to remain as a main supplier to the combined company. Furthermore, acquisitions and mergers are often highly related to the event when a key or contact person changes. Almost all interviewees mention that an important news event is if a company's key person or contact person changes or leaves. This is because business happens between the salespeople and the key or contact people. Most often a sales professional has worked consistently on building and nurturing the relationship with a key or contact person. Thus, if that key or contact person leaves or is replaced by someone else, then the salesperson has to start building a new relationship with a new contact person. This can highly affect the sales volume.

Case company-specific buying signals

Generally, news on growth, investments and acquisitions and mergers are perceived as buying signals or important market information. However, in terms of critical case company-specific buying signals, case companies emphasize different news events. Company A is willing to hear about news events that are related to companies' growth. These news events may be about, for example, that a company is recruiting, growing or a company gets funding. Whereas company B highlights

that news events about information systems development in the public sector, such as renewing child benefit system or building an intelligent prison, are critical buying signals. Company C, on the other hand, is eager to hear about news events about restaurants' new locations or whether a new restaurant has entered the market. Company D perceives different turning points in customers' businesses as buying signals. Company E actively seeks information about upcoming construction projects and whether a new constructor has been selected to a construction project or a site supervisor is changing or leaving. Company F considers that new construction projects, mergers and acquisitions or announcements related business development in the construction industry are important news events to company F. Thus, it can be argued, that the case companies value different news events above others in terms of B2B sales, even though some types of news events are generally perceived as buying signals among all the case companies.

Case companies that perceive similar news events as buying signals

Based on the findings, particularly case companies that operate in the same industry, offer similar products/services/solutions or sell their services and products to similar customer segments perceive also similar news events as buying signals. Companies B and D operate in the same industry and perceive upgrades or different turning points in customer's business which entail IT systems development as buying signals. News events, such as developing a new service, changing technologies or systems, cost savings, acquisitions and mergers, business growth and employee cooperation negotiations are perceived as important news events in both case companies. In addition, both companies B and D are curious to hear about news events on their competitors.

Companies E and F also had many similar buying signals as they sell their services and products to similar customer segments. Particularly news about upcoming construction projects or if a construction company has won a construction project are perceived as buying signals. However, there are some differences in buying signals between the case companies E and F as their service and product portfolios are quite different from each other. Company E mainly rents construction equipment

and provides construction site services whereas company F sells and develops a wide variety of construction hand tools and various types of accessories and software. Hence, case company E mainly values news events about construction projects and is eager to hear about events occurring in construction sites whereas case company F is willing to hear about a broader range of construction-related news, such as if a company is developing some business area related to construction business.

Negative news events

Another key observation is that negative news is not necessarily perceived as a negative signal. Companies A, B and D consider that particular negative news, such as news about employee cooperation negotiations, can indicate that the buying organization may actually need their services or products. Companies B and D view news on cost savings as a buying signal. Consequently, some negative news events are also perceived as buying signals. However, some negative news events are still regarded purely as negative signals, such as if a company has been caught for its unethical actions or if a company has a strong partnership with a competitor. Some case companies regard these types of news events as a signal to not pursue sales with a company (e.g. case company C does not want to cooperate with restaurants that have been caught for unethical actions). Also, all case companies consider that if a company's business is weakening, it is a negative signal. As such, many negative news events are perceived as buying signals, but some negative news events suggest that it is not wise to cooperate with a company.

Competitor news

Particularly companies A, B and D are curious to hear news events about their competitors. Company A considers that if a competitor is looking for new employees for a client company, it is a buying signal in a long term. Case company B thinks that news about competitors may open up new conversations with clients. Also, if a competitor has failed in some project, it may also be a buying signal. Company D is interested in competitor news in the sense that company D wants to avoid red

oceans and does not want to do the same things as their competitors do. In addition, company D is also willing to hear whether their competitors have done something in wrong way or in which markets competitors operate or do not operate.

The usefulness of market information found on the news articles

Nearly all case companies find news articles and the market information they provide useful in B2B sales. The only exception is case company C that does not use news articles actively in B2B sales and prefers to use the information that other sales automation tools can provide. In terms of following the news events, none of the case companies expect salespeople to follow the news frequently in order to collect relevant information on sales leads and customers. Perhaps this is because finding relevant and useful news articles on sales leads and customers from a vast amount of news sources takes time from valuable sales work which could be used for making sales calls.

Business events that are regarded as buying signals

Overall, it can be stated that news articles provide a variety of different buying signals that are useful for many B2B sales organizations. The most relevant news events to case companies A-F are summarized in the tables 9-12. These news events are the business events that the sales intelligence tool could extract from the news articles. As it can be seen, some of these news events are similar to the business events that Qian et al. (2019) extracted in their study. For example, *acquisitions & mergers* as well as *business expansion* were identified as business events in the study of Qian et al. (2019).

Table 9. The most relevant positive news events about customers or sales leads (case companies A-C)

Company A	Company B	Company C
Recruitment	**IT services and consulting**	**Grocery wholesaling**
• Recruitments • Business Growth / Business Expansion / Company's Order Backlog Grows • Business Funding • Company Has Won a Tender / Acquired a New Customer • Company Is Investing • New Contact Person • Acquisitions & Mergers	• Procurements Incorporating IT Systems Development • Consolidations of Public Offices • Business Growth / Business Expansion / Company's Order Backlog Grows • Business Funding • Acquisitions & Mergers • Company Is Investing • Competitor News	• New Location for Business • New Company Enters the Market • Company's Manager Leaves or Changes • Business Growth / Business Expansion / Company's Order Backlog Grows • Acquisitions & Mergers • Company Is Investing • Company Has Won a Tender / Acquired a New Customer

Table 10. The most relevant positive news events about customers or sales leads (case companies D-F)

Company D	Company E	Company F
IT services and consulting	**Construction equipment rental**	**Machinery and equipment wholesaling**
• Company Develops a New Service • New Location for Business • Company Is Changing Technologies or Systems • Organizational Change • Acquisitions & Mergers • Business Growth / Business Expansion / Company's Order Backlog Grows • Company Is Investing • Company is Going Global • Competitor News	• Upcoming Construction Projects • Constructor Has Been Selected to a Construction Project • Company Has Won a Tender / Acquired a New Customer • Company Is Investing • Acquisitions & Mergers • Business Growth / Business Expansion / Company's Order Backlog Grows	• Company Has Won a Tender / Acquired a New Customer • Business Growth / Business Expansion / Company's Order Backlog Grows • Company Is Investing • Acquisitions & Mergers • Company Is Developing Business Area Related to Construction

Table 11. The most relevant negative news events about customers or sales leads (case companies A-C)

Company A	Company B	Company C
Recruitment	**IT services and consulting**	**Grocery wholesaling**
• Business is Weakening • Employee Cooperation Negotiations • Competitor Is Looking for New Employees for a Company • Company Pulls Out Its Business from Finland • Company Goes Out of Business • Establishment of In-House Recruitment Teams	• Business is Weakening • Employee Cooperation Negotiations • Cost Savings • Company Has a Strong Partnership with a Competitor	• Business is Weakening • Unethical Behaviour or Actions

Table 12. The most relevant negative news events about customers or sales leads (case companies D-F)

Company D	Company E	Company F
IT services and consulting	**Construction equipment rental**	**Machinery and equipment wholesaling**
• Key Person is Leaving or Changing • Cost Savings • Employee Cooperation Negotiations • Business is Weakening • Radical Change in the Business Environment • Company Has a Strong Partnership with a Competitor	• Key Person is Leaving or Changing • Business is Weakening	• Key Person is Leaving or Changing • Company F Has No Good Customer Relationship with a Company that Wins a Tender

R2: What are the key factors that lead to the successful adoption of the sales intelligence tool in B2B sales organizations?

The interviewees came up with some great ideas for developing, adopting and implementing the sales intelligence tool successfully in the sales organizations. First ideas about the sales intelligence tool's key features are described. Then the factors that could lead to the adoption of the sales intelligence tool and the barriers that could prevent salespeople engaging with the sales intelligence tool are disclosed. Thereafter, the key outcomes achieved through the use of the sales intelligence tool are discussed. Finally, an analysis is carried out about the case companies that would likely adopt the sales intelligence tool.

Integration into the existing CRM system

Nearly all case companies point out that the sales intelligence tool should be integrated into their CRM systems. As Thaichon et al. (2018) argue, today sales organizations aim to digitize sales channels in order to increase selling efficiency, customer value and reduce costs. Based on the findings, it can be argued that integration enables a better likelihood to the adoption of the sales intelligence tool. These days sales organizations aim to move towards integrated CRM platforms in order to enable smooth functioning of their sales processes. Many sales organizations already have well-functioning integrated CRM platforms and aim to align their marketing and sales efforts. If the sales intelligence tool cannot be integrated into the existing CRM environment, there is a higher likelihood that sales organizations will not adopt it.

Other suggestions for features of the tool that emerged during the interviews

(1) The sales intelligence tool should send a newsletter or notification which informs the salesperson of all the recent news articles (interviewee 1 2019; interviewee 2 2019)
(2) The salesperson should have access to the news articles from the CRM system (interviewee 1 2019; interviewee 5 2019)

(3) The sales intelligence tool should pick intelligently which news articles it links to the CRM system (interviewee 1 2019; interviewee 2 2019)
(4) The sales intelligence tool should link well summarized information and include only the main points (interviewee 6 2019)
(5) The sales intelligence tool should learn from the data based on the user's preferences and gradually link as relevant news articles as possible to the user (interviewee 4 2019)
(6) The user should have a possibility to make adjustments to the sales intelligence tool (interviewee 4 2019)
(7) The news articles have to come in absolute real time (interviewee 4 2019; interviewee 6 2019)

The adoption of the sales intelligence tool

Many similarities from the theoretical framework can be found in the answers given by the interviewees. Below are described the common similarities, differences and new ideas that interviewees mentioned during the interviews which affect the sales intelligence tool adoption.

Influence of co-workers

Competition plays a significant role in company C and D's sales organizations. In addition, the salaries are also commission-based in both case companies which also strives the salespeople to achieve better results than their co-workers. Similarly, as Avlonitis and Panagopoulos (2005) and Homburg et al. (2009) found, competition and co-workers' adoption have a positive influence on an individual salesperson's ST adoption. The findings and previous research imply that competitive environment in sales organizations increases the likelihood of adopting the sales intelligence tool.

Influence of superiors, training and support

Training salespeople on a sales intelligence tool is necessary in companies C and F. Interviewee 3 (2019) considers that it should be even somewhat compulsory for

their sales team to use the sales intelligence tool. In addition, company C appreciates that the support for using the sales intelligence tool is available. Interviewee 6 (2019) states that superiors can highly influence on salespeople's perception of the sales intelligence tool. On the contrary, interviewee 2 (2019) thinks that the role of superiors and training affect only to some extent, but the sales intelligence tool should be so intuitive that the Client Executive understands the way it works immediately. The findings correspond with the studies of Avlonitis and Panagopoulos (2005), Buehrer et al. (2005) and Homburg et al. (2009) which imply that sales superiors play a major role in adopting sales technology. Based on the findings and previous research, superiors, training and support will likely influence positively on the adoption of the sales intelligence tool. However, the sales intelligence tool is also expected to be easy to use and intuitive so that the user understands how it is used even without training or support.

User participation

Interviewee 1 (2019) suggests that sales organization should have a dedicated team responsible for implementing the tool. The team should also include a project owner who has an understanding of the sales intelligence tool and there should be a person who actively uses the tool (Interviewee 1 2019). Interviewee 3 (2019) also suggests that company C's employees could influence the types of news articles that the sales intelligence tool links to their CRM system. Avlonitis and Panagopoulos (2005) observed that user participation positively influences perceived usefulness which then leads to the ST adoption. The findings support previous research that user participation can positively influence on the sales intelligence tool adoption.

Personal innovativeness

In terms of personal innovativeness, interviewee 3 (2019) thinks that younger salespeople have better knowledge in analytics these days and they can provide new perspectives and methods to sales work. Younger salespeople are more exposed to computing and technology during the educational process and thus tend more likely to adopt new technologies (Hunter & Perreault 2006). Hence, younger

salespeople may also be more likely predisposed toward the use of sales intelligence tool. However, interviewees 2 and 5 (2019) also bring forth that using the sales intelligence tool should not require much IT skills, otherwise salespeople will not be motivated to use it.

Salespeople's perceptions of the sales intelligence tool

Salespeople's perceived ease of use and usefulness came up many times during the interviews. Most interviewees consider that the sales intelligence tool should be perceived as easy to use and/or useful (interviewee 1 2019; interviewee 2 2019; interviewee 3 2019; interviewee 5 2019; interviewee 6 2019). In addition, several interviewees state that the sales intelligence tool should make salespeople's daily work easier so that salespeople would be motivated to use the tool (interviewee 2 2019; interviewee 3 2019; interviewee 5 2019). Interviewee 2 (2019) also states that their Client Executives need to have in-depth insight and understanding of their clients and if the tool helps them to understand their clients better, then Client Executives would be motivated to use the tool. Interviewee 5 (2019) states that systems and tools that helps their salespeople to reach sales targets motivates salespeople to use them. Interviewee 6 (2019) considers that if the information provided by the sales intelligence tool is novel and well-structured, then salespeople have a higher tendency to adopt the tool. Similarly, as Avlonitis and Panagopoulos (2005) found that perceived-ease-of-use leads to perceived-usefulness, interviewee 2 (2019) states that the sales intelligence tool should be intuitive and easy to use so that their Client Executives understand immediately the usefulness of the tool.

Barriers that could prevent salespeople engaging with the sales intelligence tool

(1) A salesperson has to separately log into the sales intelligence software (interviewee 2 2019; interviewee 5 2019)
(2) Salespeople consider the sales intelligence tool useless in sales (interviewee 1 2019; interviewee 2 2019; interviewee 5 2019)

(3) Many different costs have to be taken into account (such as paying to both CRM supplier and sales intelligence tool supplier) (interviewee 5 2019)
(4) Sales intelligence tool is difficult to use (interviewee 5 2019)
(5) Sales intelligence tool does not provide novel information (interviewee 6 2019)
(6) Salespeople with more experience continue doing what has worked before and may avoid using the sales intelligence tool (interviewee 3 2019)

R3: What are the key outcomes achieved through the use of the sales intelligence tool?

In terms of key outcomes that can be achieved through the use of the sales intelligence tool, this study found similar outcomes to those presented in the theoretical framework. As discussed before, Hunter (2019) found that using sales technology to access information positively influences sales planning and using technology for communicating information correlates highly with proposing mutually beneficial ideas. Technology use also improves salesperson's practice of adaptive selling behaviours. Ultimately, the use of ST will lead to improved effectiveness and efficiency. (Hunter 2019) In this study, similar characteristics were identified through the interviews. For instance, interviewees 1, 5 and 6 (2019) consider that through the use of the sales intelligence tool salespeople could be better prepared for the sales meetings which could improve their sales performance during the meetings. Also, interviewee 1 (2019) thinks that the salespeople could make sales more efficiently by using the tool.

In terms of improved market information processing and customer orientation, several interviewees mention that the sales intelligence tool would help salespeople to gather and process important market information on customers and sales leads. For example, interviewee 6 (2019) states the salespeople would most likely use the tool to obtain information of their customers or know what is going on in their sales territory. Interviewee 3 (2019) thinks that automated information would increase salespeople's awareness of the future events which could help them in sales. Interviewee 1 (2019) argues that the salespeople would have better knowledge in

the sales teams and salespeople would receive more hints when they should be in contact with the sales leads. Interviewee 2 (2019) states that the sales intelligence tool could improve Client Executives' knowledge of company B's clients and competitors. Furthermore, interviewee 4 (2019) emphasizes that additional market information that complements the previous customer data is immensely important to company D. Indeed, the sales intelligence tool could help salespeople to identify economic drivers of the customer's business. In particular, the sales intelligence tool could help salespeople to understand better customer's underlying problems or challenges. This way salespeople could be more prepared to identify new and better means to address those challenges.

Based on the findings, the tool is the most useful in two stages of the sales process – in the early stages of the sales process and in customer relationship management. Interviewee 4 (2019) considers that the sales intelligence tool could particularly help company D in the early stages of the sales process as it can provide quality leads. Thus, the sales intelligence tool could provide substantial value particularly in lead qualification. Interviewee 1 (2019), on the other hand, suggests that the tool could be suitable particularly for a company that focuses on inbound sales as it could help nurturing the existing customer relationships. Interviewee 1 (2019) also highlights that the tool is most useful when the sales lead has already been met since then the salesperson can use his existing information on the sales lead and information found on the news article to set up a new meeting and tailor his solutions based on the sales lead's needs.

R4: Based on the findings, which case companies are most likely to adopt the sales intelligence tool?

A clear distinction can be made between the case companies which are strategic partners in customer's business and whose consultants work closely with the customers and the case companies which build long-term customer relationships but are not as closely involved in customer's business. It can be argued that companies B and D belong to the former group and companies A, C, E and F belong to the latter group. Interviewees 2 and 4 point out that comprehending and using

market information is salient for their business in order to build and maintain long-term strategic customer relationships. Interviewee 4 even suggests that buying signals that only company D can comprehend are the most valuable buying signals to company D. Both interviewees 2 and 4 emphasize that profound understanding of their clients is highly important and relevant market information found on the news articles complements the client information that companies B and D already hold. Interviewee 4 also points out that their clients rely on company D because company D is a trustworthy partner and can provide valuable market insights to their clients. Interviewee 4 also states that they challenge their customers in the meetings which also implies that company D has to keep their finger on the pulse in order to provide tailored state-of-art solutions to their customers.

Most importantly, not only keeping up with the market trends is important but also understanding the customer's business and knowing the right contact people in the buying organization is salient. As Verbeke et al. (2011) demonstrate, understanding the roles of particular buying-center members as well as what products or services mean to them improves sales performance. Interviewee 2 highlights that the Client Executives in company B aim to discuss with the right people who actually work in the specific department where the IT systems development occurs. Furthermore, sales professionals in companies B and D aim to understand how their products and services can produce a solution as well as who will adopt it. Therefore, it can be stated that companies like B and D could highly benefit from the sales intelligence tool. As a matter of fact, case companies B and D also showed the strongest interest towards the sales intelligence tool during the interviews. It must be also taken into account that companies B and D operate in the IT services and consulting industry. Thus, they may also find the sales intelligence tool more useful as they deal with a wide variety of different IT systems and tools and therefore also perceive better the sales intelligence tool benefits. These types of companies are also typically early adopters in terms of new technologies. In addition, case companies B and D had highly invested in their CRM platforms which reflects their commitment to their CRM strategy and, as Ko et al. (2008) point out, indicates that the companies are more likely to apply a larger array of technologies. Moreover, interviewee 4 states that about 70-80% of Finland's largest enterprises make up company D's largest

customer segment. Often news is about large companies which is why company D could also benefit from the sales intelligence tool. For these reasons, it can be argued that companies B and D have a higher possibility to adopt and implement the sales intelligence tool.

5. DISCUSSION AND CONCLUSIONS

Online news articles are a valuable source of data for many sales organizations. The information flow could be automated in a way that the sales intelligence tool extracts the most relevant news articles for the use of B2B sales organizations by using data-driven and knowledge-driven methods. Yet, identifying business events from the news articles for the use of B2B sales organizations remains little studied phenomenon. This study examines the development, adoption and implementation process of the sales intelligence tool that extracts specific news events from online news articles for the use of B2B sales organizations. More specifically, this study investigates what news events are perceived as buying signals or relevant market information in different B2B sales organizations and what factors lead to the adoption and implementation of the sales intelligence tool in different B2B sales organizations. Finally, based on the literature review and the empirical study, conclusions are drawn on the case companies that would most likely adopt the sales intelligence tool. The research context considers six different companies operating in five different industries.

This study finds that news on business growth, investments and acquisitions and mergers are important news to all case companies. Based on the findings, the researcher developed tables consisting of relevant business events for each case company. The sales intelligence tool could aim to extract these particular business events on customers and sales leads and link them directly to company's CRM system. When it comes to developing the sales intelligence tool, it must be also taken into account that event extraction from a large amount of data is still viewed as a challenge by many researchers. Thus, it may be challenging to achieve high-precision performance estimates as the sales intelligence tool is developed.

5.1. Theoretical contributions and implications

This study shows that a sales intelligence tool that extracts specific business events for the use of B2B sales organizations could be very useful particularly in lead qualification and customer relationship management. If companies effectively

leverage the sales intelligence tool, they will be able to enhance aspects of the sales process from customer acquisition to customer retention. This study provides novel information on what news events are viewed as important market information from B2B sales perspective.

With regards to the sales intelligence tool adoption, this study verified several findings that Avlonitis and Panagopoulos' (2005), Homburg et al. (2009), Ko et al. (2008), Holloway et al. (2013) and Hunter (2019) also found on ST adoption. Regarding the theoretical framework on ST adoption, the findings confirm the initial theoretical framework to the most part – only user's accurate expectations were not identified. This study strives to broaden the concept of ST adoption by investigating sales intelligence tool adoption. Sales intelligence is a new phenomenon in sales literature and specifically the adoption of sales intelligence tools has barely been studied. Based on the findings, sales intelligence tools can also be viewed as components of ST tools. Therefore, this study brings a novel perspective concerning ST adoption. Additionally, this study also found several interesting issues related to the implementation of the sales intelligence tool – for example, the findings show that today B2B sales organizations value integrated CRM environment and therefore integrating the tool into the CRM system is a must-have feature, among other suggested features.

5.2. Limitations and directions for further research

The findings of this study allow a great deal of opportunities for further research. This study examines business events that could be extracted from online news articles for the use of B2B sales organizations, but it does not focus on developing the actual sales intelligence tool. Thus, this paper serves as a guide for further research and researchers can develop the sales intelligence system for detecting business events from online news articles based on the findings introduced in this study. In addition, researchers can also investigate which news articles are important to B2B sales organizations in other industries.

Several other issues related to this study avenues for further research, such as investigating the role of sales intelligence in digitized sales channels, training salespeople to use the sales intelligence tool advantageously, developing organizational capabilities to leverage sales-related knowledge within the sales organization and using event extraction methods to identify buying signals from social media. In addition, researchers could also examine if the sales intelligence tool could be used for other purposes, such as in marketing automation.

This study has several limitations. The findings show that identifying relevant business events from online news articles for the use of B2B sales organizations is highly potential field for further examination. Thus, a broader documentation of important sales-related business events found on the news articles would shed some evidence to the prevalence of it, as the results of this study cannot be generalized statistically. Additionally, it must be taken into account that the findings are derived from six different companies and five different industries in the Finnish market. Thus, the findings are not certainly applicable to all companies and industries. Yet, the case companies share some similarities and thus the results should be considered based on the similarities found between the case companies.

REFERENCES

Articles and journals

Agarwal, R. & Prasad, J. (1998) A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research* 9, 2, 204-215.

Ahearne, M., Srinivasan, N. & Weinstein, L. (2004) Effect of technology on sales performance: Progressing from technolo- gy acceptance to technology usage and consequence. *Journal of Personal Selling & Sales Management* 24, 4, 297-310.

Ahearne, M., Jones, E., Rapp, A. & Mathieu, J. (2008) High Touch Through High Tech: The Impact of Salesperson Technology Usage on Sales Performance via Mediating Mechanisms. *Management Science* 54, 4, 671-685.

Atefeh, F. & Khreich, W. (2015) A Survey of Techniques for Event Detection in Twitter. *Computational Intelligence* 31, 1, 132-164.

Avlonitis, G. J. & Panagopoulos, N. G. (2005) Antecedents and consequences of CRM technology acceptance in the sales force. *Industrial Marketing Management* 34, 4, 355-368.

Blei, D. M., Ng, A. Y., Jordan, M. I. (2003) Latent Dirichlet Allocation. *Journal of Machine Learning Research* 3, 993-1022.

Borsje, J., Hogenboom, F. & Frasincar, F. (2010) Semi-Automatic Financial Events Discovery Based on Lexico-Semantic Patterns. *International Journal of Web Engineering and Technology* 6, 2, 115-140.

Buehrer, R. E., Senecal, S. & Pullins, E. B. (2005) Sales force technology usage — reasons, barriers, and support: An exploratory investigation. *Industrial Marketing Management* 34, 4, 389-398.

Buttle, F., Ang, L. & Iriana, R. (2006) Sales force automation: review, critique, research agenda. International *Journal of Management Reviews* 8, 4, 213-231.

Chung, W. (2014) BizPro: Extracting and categorizing business intelligence factors from textual news articles. *International Journal of Information Management* 34, 2, 272-284.

Davenport, T. H. & Kirby, J. (2015) Beyond Automation. *Harvard Business Review* 93, 6, 58-65.

Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13, 3, 319-340.

Dickie, J. (2018) 3 Things to Keep in Mind as AI Comes to Sales. *CRM Magazine* 22, 2, 4.

Eisenhardt, K. M. (1989) Building Theories from Case Study Research. *Academy of Management Review* 14, 4, 532-550.

Ginzberg, M. J. (1981) Early Diagnosis of MIS Implementation Failure: Promising Results and Unanswered Questions. *Management Science* 27, 4, 459-478.

Groß-Klußmann, A. & Hautsch, N. (2011) When machines read the news: Using automated text analytics to quantify high frequency news-implied market reactions. *Journal of Empirical Finance* 18, 2, 321-340.

Han, S., Hao, X. & Huang, H. (2018) An event-extraction approach for business analysis from online Chinese news. *Electronic Commerce Research and Applications* 28, 244-260.

Hogenboom, A., Hogenboom, F., Frasincar, F., Schouten, K. & van der Meer, O. (2013) Semantics-based information extraction for detecting economic events. *Multimed Tools Appl* 64, 27-52.

Hogenboom, F., Fransincar, F., Kaymak, U., de Jong, F. & Caron, E. (2016) A Survey of event extraction methods from text for decision support systems. *Decision Support Systems* 85, 12-22.

Homburg, C., Wieseke, J. & Kuehnl, C. (2009) Social influence on salespeople's adoption of sales technology: a multilevel analysis. *Journal of the Academy of Marketing Science* 38, 2, 159-168.

Holloway, B. B., Deitz, G. D., Hansen, J. D. (2013) The Benefits of Sales Force Automation (SFA): An Empirical Examination of SFA Usage on Relationship Quality and Performance. *Journal of Relationship Marketing* 12, 4, 223-242.

Hu, P. J., Clark, T. H. K., Ma, W. W. (2003) Examining technology acceptance by school teachers: a longitudinal study. *Information & Management* 41, 2, 227-241.

Hung, S., Lin, C. & Hong, J. (2010) Web mining for event-based commonsense knowledge using lexico-syntactic pattern matching and semantic role labeling. *Expert Systems with Applications* 37, 1, 341-347.

Hunter, G. K. & Perreault, W. D. Jr. (2006) Sales Technology Orientation, Information Effectiveness and Sales Performance. *Journal of Personal Selling & Sales Management* 26, 2, 95-113.

Hunter, G. K. & Perreault, W. D. Jr. (2007) Making Sales Technology Effective. *Journal of Marketing* 71, 1, 16-34.

Hunter, G. K. (2014) Customer business development: identifying and responding to buyer-implied information preferences. *Industrial Marketing Management* 43, 7, 1204-1215.

Hunter, G. K. & Panagopoulos, N. G. (2015) Commitment to technological change, sales force intelligence norms, and salesperson key outcomes. *Industrial Marketing Management* 50, 162-179.

Hunter, G. K. (2019) On conceptualizing, measuring, and managing augmented technology use in business-to-business sales contexts. *Journal of Business Research* 105, 201-213.

IJntema, W. Sangers, J., Hogenboom, F. & Frasincar, F. (2012) A lexico-semantic pattern language for learning ontology instances from text. *Journal of Web Semantics* 15, 37-50.

Jelinek, R. (2013) All pain, no gain? Why adopting sales force automation SFA systems is insufficient for performance improvement. *Business Horizons* 56, 5, 2013.

Jones, E. Sundaram, S. & Chin, W. (2002) Factors Leading to Sales Force Automation Use: A Longitudinal Analysis. *Journal of Personal Selling & Sales Management* 22, 3, 145-156.

Karimi, M., Jannach, D. & Jugovac, M. (2018) News recommender systems – Survey and roads ahead. *Information Processing and Management* 54, 6, 1203-1227.

Ko, E., Kim, S. H., Kim, M. Woo, J. Y. (2008) Organizational characteristics and the CRM adoption process. *Journal of Business Research* 61, 1, 65-74.

Kraut, R. E., Rice, R. E. Cool, C. & Fish, R. S. (1998) Varieties of Social Influence: The Role of Utility and Norms in the Success of a New Communication Medium. *Organization Science* 9, 4, 437-453.

Leonard-Barton, D. & Deschamps, I. (1988) Managerial influence in the implementation of new technology. *Management Science* 34, 10, 1252-1265.

Mariadoss, B. J., Milevicz, C., Lee, S. & Sahaym, A. (2014) Salesperson competitive intelligence and performance: The role of product knowledge and sales force automation usage. *Industrial Marketing Management* 43, 1, 136-145.

Moorman, C. (1995) Organizational market information processes: Cultural antecedents and new product outcomes. *Journal of Marketing Research*, 32, 3, 318–335.

Moutout, J. & Bascoul, G. (2008) Effects of Sales Force Automation Use on Sales Force Activities and Customer Relationship Management Processes. *Journal of Personal Selling and Sales Management* 28, 2, 167-184.

Nahapiet, J. & Ghoshal, S. (1998) Social Capital, Intellectual Capital and the Organizational Advantage. *Academy of Management Review* 23, 2, 242-266.

Park, J. E., Kim, J. Dubinsky, A. J. & Lee, H. (2010) How does sales force automation influence relationship quality and performance? The mediating roles of learning and selling behaviors. *Industrial Marketing Management* 39, 7, 1128-1138.

Parthasarathy, M. & Sohi, R. S. (1997) Salesforce automation and the adoption of technological innovations by salespeople: theory and implications. *Journal of Business and Industrial Marketing* 12, 3, 196-208.

Qian, Y., Deng, X., Ye, Q., Ma, B. & Yuan, H. (2019) On detecting business event from the headlines and leads of massive online news articles. *Information Processing and Management* 56, 6, 1-15.

Salancik, G. R. & Pfeffer, J. (1978) A social information processing approach to job attitudes and task design. *Administrative Science Quarterly* 23, 2, 224-253.

Saxe, R. & Weitz, B. A. (1982) The SOCO Scale: A Measure of the Customer Orientation of Salespeople. *Journal of Marketing Research* 19, 3, 343-351.

Schrock, W. A., Zhao, Y., Hughes, D. E. & Richards, K. A. JPSSM since the beginning: intellectual cornerstones, knowledge structure, and thematic developments. *Journal of Personal Selling & Sales Management* 36, 4, 321-343.

Singh, J., Flaherty, K., Sohi, R. S., Deeter-Schmelz, D., Habel, J., Le Meunier-FitzHugh, K., Malshe, A., Mullins, R. & Onyemah, V. (2019) Sales profession and professionals in the age of digitization and artificial intelligence technologies: concepts, priorities, and question. *Journal of Personal Selling & Sales Management* 39, 1, 2-22.

Speier, C. & Venkatesh, V. (2002) The Hidden Minefields in the Adoption of Sales Force Automation Technologies**.** *Journal of Marketing* 66, 3, 98-111.

Spender, J. C. (1996) Making Knowledge the Basis of a Dynamic Theory of the Firm. *Strategic Management Journal* 17, Winter Special Issue, 45-62.

Sprugnoli, R. & Tonelli, S. (2016) One, no one and one hundred thousand events: Defining and processing events in an inter-disciplinary perspective. Natural Language Engineering 23, 4, 485-506.

Stremersch, S. & Van Dyck, W. (2009) Marketing of the Life Sciences: A New Framework and Research Agenda for a Nascent Field. *Journal of Marketing* 73, 4, 4-30.

Subramaniam, M. & Youndt, M. A. (2005) The Influence of Intellectual Capital on the Types of Innovative Capabilities. *Academy of Management Journal* 48, 3, 450-463.

Syam, N. & Sharma, A. (2018) Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. *Industrial Marketing Management* 69, 135-146.

Sviokla, J. J. (1996) Knowledge Workers and Radically New Technology. *Sloan Management Review* 37, 4, 25-40.

Thaichon, P., Surachartkumtonkun, J., Quach, S., Weaven, S. & Palmatier, R. W. (2018) Hybrid sales structures in the age of e-commerce. *Journal of Personal Selling & Sales Management* 38, 3, 277-302.

Tuli, K. R., Kohli, A. K. & Bharadwaj, S. G. (2007) Rethinking Customer Solutions: From Product Bundles to Relational Processes. *Journal of Marketing* 71, 3, 1-17.

Venkatesh, V. & Davis, F. D. (2000) A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science* 46, 2, 186-204.

Verbeke, W., Dietz, B. Verwaal, E. (2011) Drivers of sales performance: a contemporary meta-analysis. Have salespeople become knowledge brokers? *Journal of the Academy of Marketing Science* 39, 407-428

Conferences

Keane, N., Yee, C. & Zhou, L. (2015) Using Topic Modeling and Similarity Thresholds to Detect Events. Proceedings of the 3rd workshop on EVENTS: Definition, detection, coreference, and representation, June 4, Denver, Colorado, USA, The Association for Computational Linguistics, 34-42.

Liu, S., Liu, K. He, S. Zhao, J. (2016) A Probabilistic Soft Logic Based Approach to Exploiting Latent and Global Information in Event Classification. The Thirtieth AAAI Conference on Artificial Intelligence, February 12-17, Phoenix, Arizona, USA, AAAI-16, 2993-2999.

Nguyen, T. H., Cho, K. & Grishman, R. (2016) Joint Event Extraction via Recurrent Neural Networks. Proceedings of NAACL-HLT 2016, June 12-17, San Diego, California, USA, Association for Computational Linguistics, 300-309.

Books

Aggarwal, C. C. & Zhai, C. (2012) Mining Text Data. New York, Springer Science+Business Media.

Aggarwal, C. C. (2018) Machine Learning for Text. Cham, Springer International Publishing AG, part of Springer Nature.

Bandura, A. (1971) Social Learning Theory. General Learning Corporation.

Hunter, G. K. (2011). Sales technology, in *Oxford handbook of strategic sales and sales management*. Edited by Cravens, D.W., Le Meunier-FitzHugh, K. & Piercy, N. Oxford, Oxford University Press. pp. 426–457.

Rogers, E. M. (1995) Diffusion of Innovations. 4th edition. New York, The Free Press.

Saunders, M., Lewis, P. & Thornhill, A. (2016) Research Methods for Business Students. 7th edition. Harlow, Pearson Education Limited.

Yin, R. K. (2009a) Case Study Research: Design and Methods 4th edition. Thousand Oaks, CA, Sage Publications.

Yin, R. K. (2009b) How to do Better Case Studies: (With Illustrations from 20 Exemplary Case Studies), in *The Sage Handbook of Applied Social Research Methods*. 2nd edition. Thousand Oaks, CA, SAGE Publications, Inc. pp. 254-282.

Websites

Alma Talent Tietopalvelut (2019) [web page] [Accessed 5 November 2019] Available at: https://tietopalvelut.almatalent.fi

FaktaNet Live (2019) [web page] [Accessed 11 December 2019] Available at: https://faktanetlive.fi

Gartner (2019a) Data Intelligence Solutions for Sales Market [web page] [Accessed 10 December 2019] Available at: https://www.gartner.com/reviews/market/data-intelligence-solutions-for-sales

Gartner (2019b) Gartner Says Worldwide Customer Experience and Relationship Management Software Market Grew 15.6% in 2018 [web page] [Accessed 21 October 2019] Available at: https://www.gartner.com/en/newsroom/press-releases/2019-06-17-gartner-says-worldwide-customer-experience-and-relati

Gartner (2019c) Magic Quadrant for Sales Force Automation [web page] [Accessed 21 October 2019] Available at: https://www.gartner.com/en/documents/3941973/magic-quadrant-for-sales-force-automation

Gartner (2019d) Reviews for Sales Force Automation [web page] [Accessed 21 October 2019] Available at: https://www.gartner.com/reviews/market/sales-force-automation

HILMA (2019) [web page] [Accessed 21 November 2019] Available at: https://www.hankintailmoitukset.fi/fi/

Omale, G. (2019) 4 Key Insights From the Gartner Hype Cycle for CRM Sales Technology, 2019 [web page] [Accessed 01 December 2019] Available at: https://www.gartner.com/smarterwithgartner/4-key-insights-gartner-hype-cycle-crm-sales-technology-2019/

Leiki (2019) [web page] [Accessed 8 November 2019] Available at: https://www.leiki.com

LinkedIn State of Sales Report Pocket Guide (2019) [web page and pdf] [Accessed 02 Janurary 2020] Available at: https://business.linkedin.com/content/dam/me/business/en-us/sales-solutions/cx/2019/pdfs/stateofsales-pocketguide-r2.pdf

Rakennuslehti (2019) [web page] [Accessed 11 December 2019] Available at: https://www.rakennuslehti.fi

Roe, D. (2017) Forrester Wave Finds 3 Trends Reshaping Sales Force Automation [web page] [Accessed 12 December 2019] Available at: https://www.cmswire.com/digital-marketing/forrester-wave-finds-3-trends-reshaping-sales-force-automation/

Salesforce (2019a) Sales Cloud Features [web page] [Accessed 15 December] Available at: https://www.salesforce.com/eu/products/sales-cloud/features/

Salesforce (2019b) Contact Management [web page] [Accessed 15 December 2019] Available at: https://www.salesforce.com/eu/products/sales-cloud/features/contact-management-software/?d=70130000000lwAO&internal=true

Salesforce (2019c) Opportunity Management [web page] [Accessed 15 December 2019] Available at: https://www.salesforce.com/eu/products/sales-cloud/features/opportunity-pipeline-management/?d=70130000000lwAQ

Salesforce (2019d) Sales Forecasting [web page] [Accessed 15 December 2019] Available at: https://www.salesforce.com/products/sales-cloud/features/quota-forecasting-software/?d=70130000000lwAm

Salesforce (2019e) Lead Management [web page] [Accessed 15 December 2019] Available at: https://www.salesforce.com/eu/products/sales-cloud/features/marketing-lead-tracking-solutions/?d=70130000000lwAT

Vainu (2019) [web page] [Accessed 18 November 2019] Available at: https://www.vainu.com/product/

Valdivieso de Uster, M. (2019) The 7 Biggest Trends Upending Sales Today [web page] [Accessed 12 December 2019] Available at: https://www.salesforce.com/quotable/articles/biggest-sales-trends/#

APPENDICES

Appendix 1. Interview questions

Background questions

- Introduce yourself shortly (name, what is your role in the company)
- Describe your company's business and what products and services do you sell
- Describe your company's B2B sales process and the companies you sell your products and services to
- How many B2B customers do you have?
- What CRM do you use?
- Do you use any sales automation tools? If so, what sales automation tools do you use?
- How big is your sales team?

News articles and buying signals

- How does your sales organization generate sales leads?
- From what sources does your sales organization receive buying signals?
- Do you use news sources to generate sales leads and discover buying signals?
- How much do your salespeople follow news articles on customers and sales leads?
- What types of news events on your customers or sales leads are useful for your company? In other words, what types of news events are perceived as buying signals in your sales organization?
- What types of negative news events are useful for your sales organization? What types of negative news events suggest that your sales professionals should not be in contact with a sales lead or a customer?

- Is competitor news relevant for your company?

The adoption and implementation of the sales intelligence tool

- In terms of sales intelligence tool's features and usability, how should salespeople perceive the sales intelligence tool so that they would use it on a daily basis in their sales work?
- What internal factors within your company or the personal characteristics of the salesperson could contribute the implementation and active use of the tool?
- Why would salespeople use this tool in their daily sales work?
- How the utilization of the news articles and understanding the meaning of buying signals could improve your B2B sales?
- What barriers could prevent salespeople engaging with the sales intelligence tool?
- What other actions should be taken in order to implement the sales intelligence tool successfully in your company?

Appendix 2. The categories of news events presented in the interviews

Positive News
• Company is recruiting • Company is growing, expanding or their order backlog grows • Company gets funding • Company has won a tender or acquired a new customer • Company is investing • Company is going global • Company acquisition or a merger
Negative news
• Company’s business is weakening • Company starts employee cooperation negotiations • Company’s key person is leaving or changing