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Marketing managers in the age of AI

A multiple-case study of B2C firms

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Abstract

The growing capacity of artificial intelligence (AI) has been compared to how electricity transformed our world and industries a hundred years ago. AI is changing the rules, roles and tools of marketing, as marketing is one of the most prosperous areas to implement AI in. Accordingly, the role of marketing manager is expected to transform to a large extent. This calls for further research, since the area appears underexplored in relation to its weight of importance. Thus, the main purpose of this thesis is to contribute to the literature in marketing and management by exploring the ongoing transformation of the role of marketing managers. In order to fulfill this purpose, the following research question was formulated:

How is the role of marketing managers in B2C-firms affected by increased levels of AI-capacity?

In order to answer this question, a qualitative multiple-case study was conducted through semi-structured interviews with three marketing managers with experience of AI-usage in their field, as well as three experts at the intersection of AI and marketing. This triangulation was conducted to attain a nuanced and complementary view of the investigated area.

The findings of this study suggest that increased levels of AI-capacity affect the role of marketing managers in B2C-firms both externally and internally. First, the increased usage of AI-technologies allows for better financial accountability of marketing managers, thus marketing managers can avert a greater influence in top management. Increased AI-capacity further implicates marketing in the way that marketing becomes more relevant, as well as opening new possibilities to build stronger relationships with customers. Further implicating the role of marketing managers are the evolving AI-assistants, in which the findings of this study suggest that they will increasingly become a crucial distribution channel and consequently, brands will increase in importance. This stands in contrast to previous research, which suggests as the AI-assistant solely base their decision on facts; focus should be shifted towards optimizing value propositions towards the AI-assistants, instead of the consumer. The findings of this study suggest that optimization towards the AI-assistants will indeed be crucial. But as more firms do so, the competitive advantage will be reduced to a hygiene factor, since all actors optimize in the same way, as was the case when search engine optimization grew and saturated. Thus, brand building will once again become a highly important decision-criterion among consumers.

Further, as customer data collection is a major component in the usage of AI-technologies in marketing, the findings of this study suggest marketing managers will increasingly work with establishing transparent policies that benefit the customers. Moreover, increased usage of AI-technologies further demands marketing managers to be sufficiently knowledgeable in technology. As the responding experts believe AI-technologies are unlikely to replicate human EQ, intuition and creativity for a foreseeable future, marketing managers will still be vital to firms. This because the responding marketing managers reported these capabilities to be highly crucial in their role.

Keywords: artificial intelligence, machine learning, decision-making, marketing, marketing manager, MarTech

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1. Introduction

This chapter begins with the choice of subject as well as background information regarding the study, which shows the actuality of the subject as well as its theoretical and practical relevance within the field of business administration in general, and marketing in particular. A brief overview is then given of the existing research in the relevant areas and in connection to AI, which is followed by the identified research gap. The chapter concludes with an account of the purpose of the study, the research question and the delimitations of the study.

1.1 Choice of subject

As we are business students specialized in marketing and business development, with a common interest in how technological development disrupts businesses and market dynamics, the choice of studying the phenomenon of artificial intelligence (AI) and its implications for businesses came naturally at an early stage. By chance, one of us came in contact with the Swedish start-up Infobaleen that develops AI-solutions for marketing purposes. More precisely, Infobaleen works with predictive analytics through the modeling of recommendation engines to their clients (Infobaleen, n.d. a). The recommendation engines transform customer transactional data into predictions, subsequently turning into product recommendations according to the settings decided by the client (Infobaleen, n.d. a). In this way, their clients can find causal relationships in the data, which would be a very complex and cumbersome process for a human, if not impossible, and push personalized recommendations automatically. However, during the initial phase of the research process, the CEO of Infobaleen, Jakob Sjölander, expressed to us that they encounter divergent views regarding the future potential of AI in the domain of marketing. Many of their clients believe AI will be able to manage most of their marketing endeavors, whereas others, including Sjölander himself, envisions humans still to be essential in carrying out strategic shifts. Infobaleen later became an important building block in this study, as five out of six interviewees were found through Infobaleen.

However, as a result of this ambivalence in the community, our interest grew further, and we started browsing through research at the intersection of marketing and AI. Moreover, as marketing managers have a central function in incorporating AI in the marketing departments, we naturally grew an interest in this role. Consequently, we decided to include the area of decision-making, as this constitutes a major part of the role of marketing managers as well as it has been fundamentally disrupted by AI. As such, we reviewed several areas in the literature review process, mainly marketing, computer- and data science and decision-making. Thus, we found that while this intersection was largely renowned within non-academically literature, it appeared to be rather unexplored in academia. Consequently, we decided to investigate this area from an academic point of view, centered around how increased levels of AI-capacity affect the role of marketing managers.

1.2 Problem background

The concept of Artificial Intelligence, or AI, was first established at a conference held at Dartmouth College in 1956 (Pan, 2016, p. 410). Their definition of AI referred to the ability of machines to understand, think, and learn in a similar way to human beings, indicating the possibility of using computers to simulate human intelligence. Today, the vision of AI stretches far outside the domain of human capabilities and is often referred to as a major component in the fourth industrial revolution of mankind (Syam and

Sharma, 2018, p. 135; Schwab, 2016). Andrew Ng, one of the leading experts within the field of AI, compares the rise of AI with how electricity transformed our world and industries a hundred years ago (Ng, 2016). The effect of AI on corporations is enormous already as of today, and will be even more so (Syam and Sharma, 2018, p. 135; Schwab, 2016). Executives around the world are increasingly investing in AI to help them create new sources of business value, and corporations pioneering in adopting AI have already seen impressive results (Ransbotham et al., 2018). Furthermore, Bughin et al. (2018) estimated AI to have created $13 trillion additional output by 2030, boosting global GDP by about 1.2 percent a year.

Many are of the opinion that marketing is one of the functions in firms that has great potential of reaping benefits through using AI-technology (Fagella, 2019; Kardon, 2019; Ng, 2017), with various techniques within the subset area of machine learning having received the most attention as of today (Schrage & Kiron, 2018a, b). According to Fagella (2019), founder and CEO of Emerj Artificial Intelligence Research, marketing is one of the most prosperous areas to implement AI in, due to the access of great volumes of data and its direct connection to revenue growth. A recent survey consisting of 50 marketing managers of firms working actively with AI, made by the same organization (Fagella, 2019), found the applications in which machine learning has the highest current profit potential to be, in order: search, customer segmentation and targeting, recommendation engines, programmatic advertising and market forecasting. Indeed, the capacity to convert novel technological opportunities and firm IT investment into customer demand growth is of absolute importance across industries (Bus, Ti and Rt, n.d.). Thus, analysts in the marketing departments must possess skill-sets both consisting of technical skills to manage machine learning and other methods within AI, as well as cutting-edge knowledge in marketing (Wedel & Kannan, 2016, p. 116). This also causes managers in the marketing departments to be proficient in business strategy as well as being sufficiently knowledgeable in technology and analytics (Wedel & Kannan, 2016, p. 116). As a result of this ongoing transformation, 79% of the responding CEOs in a global study reported committing to investments in skills or training to boost the effectiveness of machine learning in marketing (Schrage and Kiron, 2018b).

It has been commonly assumed that the increasing adoption of AI-technologies and the resulting automation of tasks performed by humans will cause substantial labor layoffs in the economy. In contrast, the US Bureau of Labor Statistics (2019), reports the number of marketing managers in the US to grow by 10 percent between 2016 and 2026, which is three percentage higher than the average for all occupations, in which marketing managers who can navigate the digital world will have the best prospects. The former CEO of the leading cosmetic MNC L'Oreal, Lindsay Owen-Jones (cited by Sadler-Smith and Shefy, 2011, p. 76), provides some insights to why the role of marketing managers is expected to increase more rapidly than the average position; "It is intuition (when one asks) 'What do these brands have that just might seduce the world?' But also in terms of imagination, (one asks) 'What could they become to seduce the world?'". This statement shed lights on the difficulty in replacing marketing managers with machines, as they seemingly make use of their intuition and imagination in their role as marketing managers. This because AI is believed to not be able to replicate human intuitive and imaginary capabilities for a foreseeable future (Jarrahi, 2018, p. 12). What is rather ambiguous though, is into what the role marketing managers is transforming into, with the rapid rise of tools to automate and augment

marketing decisions, as well as emerging technologies on the demand side (Dawar, 2018).

1.3 Theoretical background

1.3.1 The role of marketing

Fundamental changes in the economy, society and politics force marketing to revise its fundamental purpose, assumptions and models that have defined marketing for the past 50 years (Webster & Lusch, 2013, p. 389). Scholars argue that marketing departments increasingly face complexities such as altering consumer demographics, disrupting technologies and enlarging quantities of data (Bolton et al., 2013; Kumar et al., 2013; Wirtz et al., 2013), changing business models (Ehret et al., 2013) and a constant need to develop powerful value propositions as means of differentiation (Bolton et al., 2014; Payne and Frow, 2014). However, if marketing departments do not possess appropriate market-sensing capabilities, they are less likely to generate profitable growth (Wirtz et al., 2014, p. 175), which is believed to contribute to a lack of trust in marketing departments among CEOs and a reduction in the marketing departments' responsibilities (Wirtz et al., 2014, p.175; Fournaise Group, 2012). A survey found that 80% of the responding CEOs to be "not very impressed" with marketers as well as perceiving them as "poor business performers" (Fournaise Group, 2012). Other research has shown that most employments of Chief Marketing Officer, hereafter referred to as CMO, do not last long (Nath & Mahajan, 2010, p. 66), in fact, they have the highest turnover in top management (Whitler & Morgan, 2017). Hanssens and Pauwels (2016, p. 173) argue this is not only a result of underperformance, but also due to the difficulty in holding CMOs financially accountable. Whitler & Morgan (2017) argue it mainly is a result due to the ambiguity of the CMO-role, which consequently lead to only 22% of job descriptions mentioning how the CMO would be measured or held accountable. due to the ambiguity of the CMO-role, which consequently lead to only 22% of job descriptions mentioning how the CMO would be measured or held accountable.

Hanssens and Pauwels (2016, p. 187) state that due to the multifaceted nature of marketing, top management must rely on a variety of weakly interrelated performance metrics - attitudinal, behavioral and financial. This makes it complex to assess the value of marketing, hence resulting in a distrust and less of a focus on marketing at senior levels of decision-making (Hanssens & Pauwels, 2016, p. 187). Thus, marketing value assessment is essential to marketing having an influence at the level of top management, an influence that shapes its role in the organization, ranging from being responsible of short-term tactical decisions to growth strategizing (Whitler & Morgan, 2017). However, the core responsibility of marketing management has been described by Webster (1992, p. 14) as "... making sure that every aspect of the business is focused on delivering superior value to customers in the competitive marketplace". A recent survey conducted by Christine Moorman (CMO Survey, 2019, p. 49), reported the following activities to be assigned to marketing departments of at least 50% of the responding CMOs; brand management, digital marketing, advertising, social media, public relations, promotion, positioning, marketing research, lead generation, marketing analytics, insight, as well as competitive intelligence.

Moreover Marinchak et al. (2018, p. 22) state that "how, what and to whom to sell, as well as- what, how, and from whom to buy, is increasingly an all-digital, AI-augmented and automated process". Indeed, the role of marketing managers seems to undergo substantial change, with new responsibilities as technology evolves. Promisingly, the rapid development of data quality and quantity along with new analytical methods, have

significantly increased the assessability of marketing performance (Hanssens & Pauwels, 2016, p. 187), thus increased usage of various AI-technologies makes it easier to hold marketing managers accountable.

1.3.2 AI and its implications for marketing

The premise of the participators at the Dartmouth conference was that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it (Epstein, 2015, pp. 36-37). This implies a focus on computing machines to perform tasks otherwise restricted by humans. Since then, the visions of AI have transformed into; enhanced hybrid intelligence by combining machines and humans; new crowd intelligence systems configured by humans, machines and networks; as well as more complex intelligence systems, combining e.g. humans, societies, physics and cyber systems (Pan, 2016, p. 410).

In this study, we are mainly concerned with AI as a rational agent, in other words the ability of AI to do the "right thing" given what it knows (Russell & Norvig, 2014, p. 1). Consequently, AI has been defined by Nilsson (1998, referred in Russell & Norvig, 2014, p. 2) as being "... concerned with intelligent behavior in artifacts". Moreover, throughout this this research we are solely concerned with so called narrow AI, in other words AI that has a narrow expertise in a particular area (Ayoub & Payne, 2016, p. 795). Narrow AI "… can play chess or drive but not both, and lacks common sense" (Hutson, 2017). This in oppose to general AI, which focuses on finding a "universal algorithm for learning and acting in any environment", a focus that originates from the 1956 Darthmouth conference (Russell & Norvig, 2014, p. 27).

Moreover, when AI is treated as a general phenomenon and there is no need for specification of the technologies or methods involved, the term AI will be used in this thesis. Otherwise, the aim is to use a more accurate terminology to avoid misunderstandings resulting from its ambiguity. Or as John McCarthy, the organizer of the Dartmouth conference and coiner of the term Artificial Intelligence put it: "... as soon as it works, no one calls it AI anymore" (Vardi, 2017, p. 5). The area of AI that probably has received the most attention regarding business and marketing (Schrage & Kiron, 2018a, b) is machine learning, which can be explained as "… programming computers to optimize a performance criterion using example data or past experience" (Alpaydin, 2014, p. 3). Machine learning uses statistics to build mathematical models with the core task of making inference from a sample, which are either descriptive - to gain knowledge from historical data, or predictive - to make predictions of the future, or both (Alpaydin, 2014, p. 3). As machine learning is the perhaps most utilized technique in marketing, it is a central theme throughout this research. Research by Kardon (2019) has shown that machine learning is already becoming a practical tool near-term with capability of increasing the productivity and efficiency of the marketing team and its manager, including tasks such as lead scoring and predictive analytics, automated email conversations, customer insights, personalizing with data as well as with content creation to a certain extent.

A concrete example of what AI can do in relation to marketing is one of a Harley Davidson dealership in New York that tripled its sales and increased its leads by 2930% by utilizing predictive analytics in an AI-driven marketing platform (Power, 2017). What the AI did was determining precisely how much and where the business should spend its resources to generate the best results relying on real-time customer data, and thereby increasing digital marketing ROI (Power, 2017). According to Power (2017), the advantage of AI is its ability to gather and analyze vast amounts of data and

optimally leverage the generated insights, rather than relying on marketers' gut feelings and guesses.

Furthermore, the rise of AI is not solely believed to change the role of marketing managers from within, as AI-assistants are expected to radically change the relationship between firm and consumer (Dawar, 2018). According to Dawar (2018), marketing will turn into a battle for the attention of the AI assistants, as they will become the primary channel through which consumers find their goods, services and information. AI-assistants will be, according to the author, able to predict what combination of price, performance and features preferred by the consumer, and eventually able to satisfy the consumer's needs better than themselves. Marinchak et al. (2018, p. 22) are also of the belief that marketers need to understand how their products should be positioned towards the AI assistants, as well as how to target an audience consisting of both humans and AI assistants.

1.3.3 AI in the decision-making process

A major component of the role of marketing managers, and indeed of all managers, is decision-making. Until recently, traditional informational technology helped with processing of communications and data, but the decision-making was still human (Syam and Sharma, 2018, p. 135). However, in this new shift, computers will also be able to make reliably appropriate decisions (Syam & Sharma, 2018, p. 135), and as such, the area of decision-making will be the fundamental driver in the fourth industrial revolution.

To determine what decisions within the domain of marketing that can be automated and/or augmented by AI, we must first outlay the structure of how decisions in organizations are taken. According to Stanowich and West (2000), decision-making is a dual process in which intuitive judgments and deliberate thinking activities stem from two different systems; system 1 and system 2. "System 1 operations" are automatic, involuntary and requires almost no effort, whereas "system 2 operations" are controlled, voluntary and effortful (Kahneman & Klein, 2009, p. 519). System 2 is activated when, for example, solving a mathematical equation or reading a map (Kahneman & Klein, 2009, p. 519); in other words, tasks that require an analytical approach involving the analysis of knowledge through conscious reasoning and logical deliberation (Jarrahi, 2018, p. 4). Therefore, the problem-solving capabilities of various AI-technologies better support analytical decision-making than intuitive, by making calculations of unmanageable amounts of data, analyzing and evaluating a set of alternatives (Jarrahi, 2018, p. 4). In contrast, "... intuition is a capacity for attaining direct knowledge or understanding without the apparent intrusion of rational thought or logical inference" (Sadler-Smith and Shefy, 2011, p. 77), which evidently makes it increasingly difficult to compute a machine with intuitive capabilities. Since businesses are contradictory, ambiguous, increasingly complex and unpredictable (Sadler-Smith and Shefy, 2011, p. 76), and although these challenges can be reduced with the use of sophisticated algorithms, human intuition is unarguably still essential to organizations (Jarrahi, 2018, p. 11). Accordingly, the inability of replicating human intuition is one of several believed barriesr to full-scale implementation of AI in organizational decision-making (Ransbotham, 2016).

Instead of organizations being fully managed by machines, scholars advocate a synergetic model where the advantages of humans and machines are combined (Epstein, 2015; Jarrahi, 2018; Marinchak et al, 2018). This clearly displays the shift in focus from the pioneers at the Dartmouth conference, where the interaction with or impact on

people was never mentioned, and neither were there targets beyond human capabilities (Epstein, 2015, p. 37). Epstein (2015, p. 44) envisions what he calls collaborative intelligence, where a machine partners with a person to achieve the goals of the person. He argues that rather than re-designing our world for machines or obeying to their decisions, we should instead share our tasks with them to achieve higher outcomes as well as to increase the societal support for increased usage of cognitive technologies. Moreover, Jarrahi (2018, p. 11) argue that AI in organizational decision-making should be viewed as a tool for augmentation rather than automation. This because strategizing requires a sense-making capability of the world beyond a specific decision domain that only humans possess, and the likelihood of machines to replicate human sub-conscious thought patterns that drive superior intuitive decision-making is rather small (Jarrahi, 2018, p. 11).

As a consequence of the described disruptions due to the initiated fourth industrial revolution, the responsibilities of marketing managers are shifting (Wedel & Kannan, 2016; Whitler et al, 2017), while marketing managers simultaneously are prognosticated to grow more than the average among occupations over the seven upcoming years (Bureau of Labor Statistics, 2019). In contrast, one might be of the belief that increased levels of AI-adoption in marketing increases the proportion of automated decisions, hence reduces the workforce of marketing managers. The proposition of marketing managers playing a significant role in organizations in the nearest future, speaks in favor of practitioners as well as scholars, whom envision augmentation rather than automation (Jarrahi, 2018; Epstein, 2015).

1.5 Research gap

According to Wedel and Kannan (2016, p. 102), few scholars in the marketing literature have up until 2016 addressed the application of various AI-technologies on marketing. The need for further research is also supported by the Marketing Science Institute (MSI), where many of the research priorities for 2018-2020 regard AI in marketing (MSI, 2018).

When scrutinizing the literature at the intersection of marketing, decision-making and AI, there appears to be few articles which explores how the role of marketing managers is being transformed by the development of AI. Surveys show AI's vast usage in the many areas of application (BrightEdge, 2018; CMO Survey 2019), but due to their deductive character, fails to give a deeper understanding of how decision-making processes in marketing are reshaped. Jarrahi (2018, p. 12) has proposed that managers must be prepared to adapt and readapt in the face of evolving AI. Furthermore, the author is of the opinion that human decision-makers must continuously update their knowledge in how AI can help their business, as well as their own competitive edge in the human-machine symbiosis, for example intuition and EQ. These conclusions bring some insight into how marketing managers should encounter AI, but as the article regards management in a general sense, they are not necessarily valid for the domain of marketing.

Furthermore, Wedel and Kannan (2016, p. 116) critically examines marketing analytics, in which they state that marketing managers in data-rich environments must be both well-immersed in business strategy as well as sufficiently knowledgeable in technology and analytics. The authors further state that businesses must know how to base automated marketing decisions on sufficient knowledge as well as managerial intuition and supervision. Wedel and Kannan (2016) thoroughly demonstrate the requirements of marketing managers as the possibilities of marketing analytics expand, but since the AI-

revolution involves other areas as well, for example AI-assistants, conclusions cannot be drawn regarding the role of marketing manager in its entirety.

Marinchak et al. (2018, p. 22) have in their essay addressed the early expressions of AI's impact on marketing management, in which they state that AI is changing the rules, roles and tools of marketing. Since the conclusions are not grounded in empiricism, but instead drawn from mostly news articles and other non-academic sources, the need to empirically investigate the impact AI has on the role of marketing managers prevails. Dawar (2018) on the other hand, has held interviews with industry experts and managers, in which he states B2C-firms can expect AI-assistants to radically change their relationships with customers. The author further proposes critical success factors for marketing targeting AI-assistants, but as he only examines the role of marketing manager in relation to the AI-assistants, it does not sufficiently consider the mixed audience of machines and humans. Therefore, the author does not conclude in how marketing managers should navigate through this multifaceted business landscape.

Consequently, the emerging field of AI in the context of marketing and decision-making appears to be underexplored in relation to its importance. To our knowledge, previous research has not sufficiently explored the ongoing transformation of the role of marketing managers with a holistic view. By looking through the lens of both marketing managers who actively work with AI, as well as AI-experts in the field of marketing, this study aims at mapping out what value marketing managers contributes with, as well as what AI can and cannot do in the domain of marketing. This study further aims at outlining how AI affects the relationship between firms and consumers as well as investigating barriers to the implementation of AI, in which how AI can and will automate and augment decision-making within marketing departments can be fully understood. In this way, this study aims at attaining a deeper understanding of how increased AI-capacity affects the role of marketing managers. Therefore, we conclude in the following research question.

1.6 Research question

How is the role of marketing managers in B2C-firms affected by increased levels of AI-capacity?

1.7 Thesis purpose

The purpose of this thesis is to contribute to the literature in marketing and management by exploring the ongoing transformation of the role of marketing managers. Exploring the intersection of marketing, decision-making and AI is relevant in several ways. First, this will contribute to an underexplored research field in which previous research in this area does not cover the implications for the role of marketing managers in its entirety. Second, as a consequence of outlining how the role of marketing managers is transforming, this study will also bring insights into what skill-sets are required by marketing managers to possess.

1.8 Delimitation

The responding marketing managers are limited to be working in firms that use various AI-technologies in their marketing endeavors. In this way, AI will not be too much of an abstract phenomenon to them and, consequently, we believe they have a deep understanding of how AI is affecting their role as marketing manager. Furthermore, we restrict the focal firms to be B2C firms, as it is commonly assumed that the characteristics of the marketing practices of B2B- and B2C-firms are fundamentally different. Thus, AI affects the role of B2B-marketing managers and B2C-marketing

managers differently; hence there is a need to differentiate the two. Lastly, the research is further restricted to investigating firms which are connected to the retail-industry, as this appears to be a sector in which AI is more commonly utilized in marketing.

2. Scientific method

This chapter starts with a discussion about our view of the reality and nature of social entities (constructionist) as well as what we consider as acceptable knowledge (interpretivist). This continues with discussions of our pre-understandings and how they have impacted this study, the research approach (inductive), our choice of research strategy (qualitative) and research design (multiple-case study) as well as the chosen research method (semi-structured interviews). The chapter concludes with a description of the literature review as well as a how a source-critical perspective has permeated this process.

2.1 Ontology

According to Bryman and Bell (2011, p. 20), questions of ontology concerns the nature of social entities, and whether their reality should be viewed as objective or subjective. The two main paradigms in ontology are objectivism and constructionism (Bryman & Bell, 2011, p. 20). Researchers who take upon an objectivistic stance, view social phenomena as independent from social entities, thus there exists an absolute truth which is generalizable (Bryman, 2008 p. 35). Alvesson and Deetz (2000, p. 73-73) question objectivism by stating that the world is determined by people's interests and how they relate to them, which is an interpretation of the world called constructionism. Constructionists believe in the existence of multiple realities, that are formed by context, i.e. the world is interpreted subjectively (Alvesson & Deetz, 2000, p. 74). Moreover, the constructionist view truth as something that evolves and alternates with experience (Bryman & Bell, 2011, p. 22). According to Bryman and Bell (2017, p. 53), a constructionistic researcher can never generalize its findings, but instead transfer them into contexts with similar characteristics.

The aim of this study is to attain a deeper understanding of how social actors are affected by AI. Undoubtedly, it is of exploratory nature since the intersection of marketing, decision-making and AI, to our knowledge, has not been thoroughly studied. Furthermore, AI is a multifaceted concept with diverse areas of applications, thus its meaning shifts with the focal social actor. Since this study builds on the knowledge of interviewees, it reflects the view of their social realities. With this subjectivity in mind, we do not strive towards generalizing the findings of this study, but instead bring valid insights in how the role of marketing manager is changing as the capacity of AI increases. All the above taken into consideration, this study takes upon a constructionistic stance.

2.2 Epistemology

Epistemology deals with the question of what is considered as acceptable knowledge in a discipline, in which there are two main paradigms; positivism and interpretivism (Bryman & Bell, 2011, p. 15-16). Positivism advocates social sciences to be studied with the same approach as natural sciences, in which the role of research is to test theories and provide evidence to develop laws (Bryman & Bell, 2011, p. 16). Furthermore, research is expected to be conducted in a way that is value free; thus, to preserve objectivity, the researcher must be independent from the studied phenomenon (Bryman & Bell, 2011, p. 15). In contrast, interpretivism is a term given to oppose positivism, founded by those who do not believe social science research should adopt the methods of natural sciences (Bryman & Bell, 2011, p. 16). This because they believe social science research requires a strategy that respects the distinctiveness of people to the objects of the natural sciences, in which the social scientist must grasp the social meaning of social action (Bryman & Bell, 2011, p. 17).

We believe positivistic assumptions are too narrow for us to explore how the role of marketing managers is affected by increased levels of AI-capacity. Due to the relative absence of previous research, the area lacks theories to test, neither do we strive to provide material for the development of laws. In contrast, the main objective of this study is to bring fruitful insights. These insights with the help of previous empirical findings can then be further translated into theory and subsequently tested quantitively, though outside the scope of this study. Instead, we pursue this study with an interpretivist view. In this way, we believe our preconceptions are of value when navigating through relatively unexplored territory, thus we are not independent from the phenomenon. How AI shapes the role of marketing managers, we believe is not solely grounded in technological development, but also in human's perception of AI, which further translates into ethics and legislation. In this way, we must understand human behavior, in which an interpretivist view is most appropriate to do so (Bryman & Bell, 2011, p. 16).

2.3 Pre-understandings

Pre-understandings are described as presumptions for the concept of understanding to even exist and affects the way humans interpret reality as well as the direction of scientific research (Gadamer, referred in Gilje et al., 2007, s. 179). An important component of pre-understandings are our personal experiences, which are always present in our consciousness and affects our interpretation of the world (Gilje et al., 2007, s. 183). As interpretive research particularly reflects the author's interpretation (Bryman & Bell, 2005, p. 443), this type of research requires pre-understandings to be described (Geanellos, 1998, p. 238). Consequently, we should not strive towards being completely objective in our research, but instead make use of the understandings we hold to our advantage (Geanellos, 1998, p. 238).

In the context of this research, both of us had our own previous experiences of AI, as well as our own interpretations of what it is and how it can be utilized. Furthermore, as this knowledge and experiences was very much limited, we had to immerse ourselves in the field of AI and its applications in marketing before initiating this research. We believe these pre-understandings were advantageous to us throughout this research, as it enabled us to find this research gap, find appropriate previous research to build the theoretical framework upon, as well as to write an interview guide grounded in previous knowledge. Furthermore, our pre-understandings were of much help when collecting the data through interviews, as it allows us to better grasp the answers of the respondents, thus we were able to ask follow-up questions, which we believe contributed to a greater depth of our research. As such, we made our pre-understandings to an advantage, in line with the recommendations of Geanellos (1998, p. 238). Moreover, this aligns with our interpretivist view of knowledge, as the social scientist must understand the social meaning of social action (Bryman & Bell, 2011, p. 17).

2.4 Research approach

The research approach can be described as the researchers chosen approach towards relating theory and empiricism (Patel & Davison, 2011, p. 23). This study follows the inductive approach to research, which also aligns with our philosophical assumptions. The inductive approach can be thought of as the path of discovery (Patel & Davison, 2011, p. 23), where the researcher studies its objects without first having anchored the research in an established theory, and then formulates a theory based on the collected empiricism (Patel & Davison, 2011, p. 23). The biggest reason for why this approach was chosen is due to the researched area being relatively underexplored as of today, and

the purpose of the research was to generate further insights into the field and develop theory. Consequently, this study is of an exploratory nature, in which an inductive approach is the most suitable path.

The deductive approach to research on the other hand can be thought of as the way of evidence (Patel & Davison, 2011, p. 23), where theory is the basis for observations and results (Bryman & Bell, 2017, s. 43, 45; Saunders et al., 2012, s. 48). In this approach, existing theory is used to generate hypotheses, which is then tested empirically in the current case (Patel and Davison, 2011, p. 23). The difference between the approaches thus lies in whether the study aims to test or develop theory (Saunders et al., 2012, s. 12). A deductive approach would have been suitable for this study if there were more research in the focal field, which would allow us to confirm rather than explore possible connections.

Although the deductive and inductive approaches are often opposed to each other, they should advantageously be considered as tendencies instead of mutually exclusive (Bryman & Bell, 2017, s. 45). According to Patel and Davidson (2011, p. 24), the abductive approach can be viewed as a mix of deduction and induction. Abduction starts with induction, where a hypothetical pattern is formulated that can explain a specific case, in other words a suggestion for a theoretical depth structure (Patel & Davidson, 2011, p. 24). After this comes the deductive process where the generated hypotheses are tested on new cases, which may cause the hypotheses to evolve or expand (Patel & Davidson, 2011, p. 24). This may then continue in a back-and-forth manner until the best explanation is found (Bryman & Bell, 2011, p. 27). This approach would likely have been useful in this case, if it was not for the constraints in time and resources, as described in section 7.5. However, the deductive approach was partly used in this research as the theoretical framework was developed simultaneously as the interview guide, and as such before the collection of data. Accordingly, we argue that deductive elements increased our pre-understandings further, which allowed for a more successful and insight-generating data collection.

A risk when conducting research with an inductive approach, is that one does not know how generalizable the theory is, as it is based on empiricism typical to a specific situation, time or group of people (Patel & Davidson, 2011, p. 23). However, due to our constructionistic view of social entities as described in section 2.1, we do not strive towards generalizing the findings of this study, but rather transfer the findings into contexts with similar characteristics, as described by Bryman and Bell (2017, p. 53). Another risk, according to Patel and Davidson (2011, p. 23), is that our pre-understandings of the problem, as well as the information gathering before initiating the research, will color the produced theories. Pre-understandings and information gathering before initiating the research can be viewed as deductive elements, which according to Bryman and Bell (2017, p. 45), are common in inductive research.

2.5 Research strategy

A research strategy can be described as a plan for how the researcher should execute the study to answer the research problem (Saunders et al., 2012, s. 173). In inductive case research, such as this study (the choice of a case study is explained further in section 2.6), theory is normally being developed using qualitative data (Bryman & Bell, 2015, p. 27). Qualitative studies are also promoted when having a constructionist perspective (Bryman & Bell, 2011, p. 27) as well as when attempting to answer a question of explorative character (Saunders et al., 2012, p. 163), as in this case. As such, qualitative data collection is most in line with our philosophical assumptions as well as the research

problem of this study. A qualitative strategy is also appropriate if the purpose of the study is to generate a deeper insight, which has been done through the interpretation of qualitative data. A focus on understanding and interpretation is namely something that characterizes the qualitative research strategy (Bryman & Bell, 2017, s. 372; Wenemark, 2017, s. 54). A problem with qualitative data collection regards the issue of subjectivity, as the findings are affected by what information the researcher believes is of importance, and what that is not (Bryman & Bell, 2012, p. 405). Difficulties of replicating the study due to its subjective nature, as well as in terms of generalization, due to the study being context-specific, are also common criticism towards qualitative research (Bryman & Bell, 2012, p. 406). However, as explained previously, the purpose of this study is not to generalize its findings. Moreover, qualitative research commonly lacks transparency, since it is not always shown exactly what the researcher has done in their study, how the respondents were chosen and how the analysis was conducted (Bryman & Bell, 2012, p. 406). By being aware of these issues, we have been able to decrease their implications. Both the transparency and the replicability of the study have been partly increased, due to detailed explanations of the research process; why and how we have done what we have done.

If this study would had been of a deductive instead of an inductive character, a quantitative approach to data would have been more suitable, as the deductive strategy focuses on gathering quantitative data and analyzing this data using statistical methods (Bryman & Bell, 2017, s. 167; Saunders, 2012, s. 162). Deriving hypotheses based on theory and subsequently testing these can be considered the most important step in quantitative research (Bryman & Bell, 2017, p. 167), which has a high degree of objectivity and generalizability (Saunders et al., 2012, p. 161). However, a quantitative strategy is not suitable for answering questions of an exploratory nature, where the researchers are trying to discover and gain deeper insights of a problem (Saunders et al., 2012, p. 171). If this research area would have been more explored though, a quantitative strategy would have been suitable as it would be of more use to test hypotheses regarding the relationships between different variables. However, if there were no constraints in time when conducting this study, the best strategy would perhaps have been to collect both qualitative and quantitative data, as this is a common method in case study research (Eisenhardt, 1989, p. 534). By using both methods, hypotheses can be generated through the analysis of collected qualitative data, which can then be tested and verified through statistical analysis in order to generalize the results to a population.

2.6 Research design

Choosing the research design can be described as choosing a frame for how to collect and analyze the data (Bryman & Bell, 2017, s. 68). In this study, a multiple-case study research design was used for this purpose. According to Eisenhardt (1989, p. 534), case study research is likely to have important strengths such as novelty, testability and empirical validity due to its linkage with empirical evidence. Therefore, case study research is particularly suitable to new research areas or research areas where the existing theory is insufficient (Eisenhardt, 1989, p. 534), such as the area under study. Moreover, Yin (2009, p. 4) emphasizes that a case study method "… allows the investigators to retain the holistic and meaningful characteristics of real-life events – such as … organizational and managerial processes", which is the purpose of this research. Yin (2009, p. 4) further describes that the more the research question aims to explain present circumstances, such as "how" and "why", some present social phenomenon functions, and the more extensive the description of this social

phenomenon is required to be, the more a case study design increases in relevance. As this study tries to answer the social phenomenon of *how* the role of marketing managers is affected by increased levels of AI-capacity, a case study appeared as the most appropriate research design.

Case studies can contain a single case as well as multiple cases (Yin, 2009, p. 53). This study is a multiple-case study as data has been collected from several marketing managers as well as AI-experts representing different organizations. Having multiple cases instead of a single case increases the strength of the evidence, which makes the study more robust overall (Herriott & Firestone, 1983, referred in Yin, 2009, p. 53). Moreover, multiple-case designs are often preferred over single-case design, since the latter is vulnerable as one has to "... put all your eggs in one basket" (Yin, 2009, p. 60-61). Having multiple-cases increases the replicability of the study and can also result in considerable analytic benefits (Yin, 1989, p. 61). In this way, the

Moreover, according to Eisenhardt (1989, p. 538), it is advantageous to be a team of investigators when conducting case research, as this enhances the creative potential of the study. This as the investigators may have complementary insights as well as different perspectives on matters. According to the Eisenhardt (1989, p. 538), the convergence of observations from multiple investigators also enhances the confidence in the findings, as well as increases the likelihood of surprising findings. As we were two researchers that conducted this case research, this might have resulted in more fruitful insights, than if conducted by a single researcher.

2.7 Research method

The choice of research method involves the choice of technology for collecting data; such as interview forms, surveys and participant observations (Bryman & Bell, 2017, p. 68). Saunders et al. (2012, p. 419) describes that one should choose the method that best suits the study's problem formulation and purpose. Interviews, which are used as research method for this case-study, can be either structured, unstructured or semi-structured. According to Bryman and Bell (2011, p. 479-481), structured interviews are mostly used in quantitative research, whereas unstructured and semi-structured interviews are used for qualitative research, due to their flexibility. This qualitative study was conducted using semi-structured interviews, which is a mix of the structured and the unstructured interview forms. In semi-structured interviews, the researcher uses a list of relatively specific themes that are touched upon, but the interview object has a large degree of freedom when answering the questions (Bryman & Bell, 2017, p. 454; Patel & Davison, 2011, p. 82). Moreover, it allows for the use of exploratory open-ended questions that the interview objects can answer as they like, which leaves space for unusual or unexpected answers (Bryman & Bell, 2011, p. 249; Saunders et al., 2012, p. 379).

The alternative to having a semi-structured interview would have been to have a completely unstructured interview, which is very informal and allows the respondent to talk freely about events (Saunders et al., 2007, p. 312). However, as unstructured interviews usually end up as a set of divided and incomplete conversations (Bryman & Bell, 2017, p. 453), this method was not appropriate for this study as more structure was needed for the interviews. Semi-structured interview is conducted with the help of an interview guide, which is advantageously adapted to the interview objects responses (Bryman & Bell, 2017, p. 454).

2.8 Literature search

A thorough review of existing literature has been carried out during the work on this study, which is an important aspect of all research (Bryman & Bell, 2017, p.116). Bryman and Bell (2017, p. 116) describe that this is of importance because, among other things; seeing what has previously been investigated and what can be considered known in the area; which concepts and theories that are well-established; as well as which research methods that has been used. Theory from several different fields of research has been used and combined in this study: theory from the field of data science regarding various technologies within AI; theory from research in business administration regarding the role and purpose of the marketing departments and marketing managers in todays' corporations; theory from the field of psychology regarding the human decision-making process; and interdisciplinary theory regarding AI and its use in business and marketing, as well as in decision-making. This increases the holistic understanding of AI's implications on marketing through shedding light on many different aspects. Furthermore, theory with different perspectives are used regarding several matters in order to decrease bias and to get a nuanced view of issues. An example of this is section 3.3.3, where different scenarios regarding AI's future in decision-making is explained.

The literature has been found through searching in the database of Umeå University Library, which combines and gives access to several different databases with peer-reviewed scientific articles, such as Business Source Premier (EBSCO), JSTOR, Science Direct, Emerald Journals and Sage Premier. In order to find relevant literature, different keywords were formulated within the respective different field, based on the purpose of the study, which were then combined in different ways when searching for literature. The most used words were *AI/artificial intelligence, machine learning, marketing, CMO, marketing manager* and *decision-making.* After having found our initial literature, we scrutinized the reference lists of these publications in order to find additional relevant and well-cited articles. According to Saunders et al. (2012, p. 91) this is a common method in academia. Johansson-Lindfors (1993, p. 88) describes the difficulty of deciding when enough theory can be considered to have been found in the area. The author describes it is appropriate to interrupt the literature search when further searches lead to such literature or sources that have already been found, which is referred to as the literature search reaching a kind of saturation. Due to the novelty of this interdisciplinary research field and the exploratory nature of this study, saturation was found relatively quickly regarding the intersection of marketing, decision-making and AI.

When choosing literature for the theory section, we have also made sure to verify that all articles are peer-reviewed in order to verify their credibility. Saunders et al. (2012, s. 84) describes that academic peer-reviewed journals is the source of information that has the highest quality, amount of details and usefulness of all sources. Moreover, account has also been taken of which journals the articles have been published in, where the more renowned academic journals in the various fields were used as much as possible. Accordingly, articles published in, for example, *Journal of Marketing* have been given larger space for the more generally oriented theory, supported with articles from narrower journals in more niche areas, such as *Journal Of Service Management*. Bryman & Bell (2017, p. 134) describes that this approach is suitable for achieving quality requirements. Moreover, Johansson-Lindfors (1993, p. 89) describes that it is usually considered desirable to use recently published literature to as high extent as possible, which has been the aim throughout this research.

However, as the intersection of marketing, decision-making and AI is a novel field of research at the present, we had trouble finding enough relevant literature from the mentioned databases. Furthermore, some of the literature that seemed relevant to this study was not accessible through the university library database, as the papers were too recent. As a complement to the articles found through the University Library, we therefore looked for relevant theory in the peer-reviewed management journals MIT Sloan Management Review and Harvard Business Review. As AI in business and marketing is an important topic as of today, we found several relevant articles in those journals.

By analyzing the found literature, we identified the research gap investigated through this study. The literature in the area further helped us to design the interview guide, described in detail in section 4.2.1, which was used to derive fruitful insights from our qualitative data collection.

2.9 Source criticism

Thurén (2013, p. 7-8) describes that source criticism is made up of four criteria, namely (1) Authenticity, (2) Independence, (3) the Time Relationship Criterion and (4) Freedom of Tendencies. The first criterion, authenticity, is that a source should be what it says it is (Thurén, 2013, p. 7). We argue that this criterion is met as we have only used peer-reviewed scientific articles when choosing theory for this study, except for a few reliable marketing surveys. The second criterion, independence, is that the source should not depend on other sources, but should be an independent first source (Thurén, 2013, p. 7). Throughout this study, we aimed at avoiding secondary sources as much as possible, as there is always a risk that the original source has been distorted (Bryman & Bell, 2017, p. 134; Johansson-Lindfors, 1993, p. 89). However, due to constraints in time and resources, this has not always been possible. We have in those cases made sure that the secondary source is not used as a single source when building central arguments, in line with recommendations of Bryman and Bell (2017, p. 134). We therefore argue that the independence-criterion is met.

Moreover, the third criterion, time relationship, refers to the more time that has passed between the source's story about an event and the actual happening of the event, the more reason to doubt the source (Thurén, 2013, p. 8). As the cited articles often do not describe the time sequence between the collection of data and when the results have been written, whether this criterion is met is difficult to answer. However, as the use of AI in marketing is a rather new phenomenon, and even more so the research about it, we argue that this is not likely to be a major problem is this case. The fourth criterion, freedom of tendencies, is that the source should not give a distorted or incorrect picture of reality because of someone's interest of this (Thurén, 2013, p. 8). To decrease the risk of this happening, we have aimed to use theory from several different authors as well as from different fields of research, mainly from data science as well as business administration and organizational theory. We have also strived towards using well-cited articles from well-established journals, to the highest extent possible. However, at the intersection of AI, marketing and decision-making, some articles are frequently cited due to their relevance to this exploratory study, as the amount of previous research is limited. In the case of books, it was made sure that the publishing's are renowned and applied in many universities all over the world. The latter regards mainly section 3.1 in the theoretical framework, where the concept of AI and various techniques are explained, as articles in the field of data science rarely discuss the basics of these techniques.

3.Theoretical framework

This chapter begins with a brief description of AI, machine learning, which is the most commonly applied technique within AI in marketing, as well as a few central techniques within machine learning. This part also exemplifies and describes what these techniques can do in relation to marketing as of today. Moreover, some ethical issues regarding the use of AI in business and marketing is also discussed in this chapter, as well as how the competition regarding development of AI looks like and how this impacts the market. The chapter continues with outlaying the ambiguous role of marketing managers as of today, which is a necessity before describing how the role is impacted by AI. Thereafter, an introduction to the decision-making process is given, as well as how decision-making is affected by AI. Lastly, a visualized overview of the theoretical framework is given in section 3.4, which describes the various factors of AI we believe shapes the role of marketing managers, with the aim to make the theoretical framework more apprehensible to the reader.

3.1 AI in marketing

For thousands of years, us humans have tried to understand how we think: how we perceive, understand, predict and manipulate the world (Russell & Norvig, 2014, p. 1). With the rise of AI, we do not strive towards understanding intelligence, but attempt to build intelligent entities (Russell & Norvig, 2014, p. 1). AI is growing at exponential speed, and hit a landmark in 2017 when Google's DeepMind AlphaGo defeated the world's number one Go player Ke Jie (BBC, 2017). The game of Go is viewed as the most challenging classical game for AI to master, due to its vast search space and the difficulty in evaluating board positions and moves (Silver et al., 2016, p. 484), while also being a very intuitive game (Muoio, 2016). Demis Hassabis, the founder and CEO of DeepMind, puts it this way: "It's a very intuitive game. If you ask a great Go player how it is they decided on a move, they'll often tell you it felt right. So these things generally computers are not great at" (Muoio, 2016). AlphaGo used deep neural networks trained by both supervised learning from human experts' games, in addition to reinforcement learning from games of self-play (both learning techniques are described in section 3.1.1) (Silver et al., 2016, p. 484). If AI can already beat the world champion in one of the most advanced board games there is, one does not need the wildest imagination to realize that AI has a vast potential in the areas of business and marketing as well.

There seems to exist endlessly definitions of AI. In Figure 1 below, a few different popular definitions are provided which have been chosen by Russell & Norvig (2014, p. 2) in one of the most popular books within the subject of AI, used at over 1400 universities in more than 125 countries (AIMA, 2019). The definitions fit into four categories, where the top one's address thought process and reasoning, and the bottom one's address behavior. The definitions to the left measure success in terms of fidelity to human performance, whereas the ones to the right measure success in terms of rationality – the ability to do the "right thing" given what it knows (Russell & Norvig, 2014, p. 1).

Thinking Humanly	**Thinking Rationally**
"The exciting new effort to make computers think … machines with minds, in the full and literal sense." (Haugeland, 1985) "[The automation of] activities that we associate with human thinking, activities such as decision-making, problem solving, learning …" (Bellman, 1978)	"The study of mental faculties through the use of computational models." (Charniak & McDermott, 1985) "The study of the computations that make it possible to perceive, reason, and act." (Winston, 1992)
Acting Humanly	**Acting Rationally**
"The art of creating machines that perform functions that require intelligence when performed by people." (Kurzweil, 1990) "The study of how to make computers do things at which, at the moment, people are better." (Rich and Knight, 1991)	"Computational Intelligence is the study of the design of intelligent agents." (Poole et al., 1998) "AI … is concerned with intelligent behavior in artifacts." (Nilsson, 1998)

Table 1 - A choice of definitions of AI. Adapted from Russell and Norvig (2014, p. 2)

As people approach AI with different goals in mind, we need to ask if one is concerned with thinking or with behavior, and if one wants to model humans or work from an ideal standard (Russell & Norvig, 2014, p. 29). Russell & Norvig (2014, p. 30) are mainly concerned with intelligence as rational action, and as AI as a rational agent. As such, this approach towards AI will be the focus of this paper as well. A rational agent is, according to Russell and Norvig (2014, p. 4), an agent (from the Latin word *agere*, to do) that "… acts so as to achieve the best outcome or, when there is uncertainty, the best expected outcome". The act of making correct inferences, explained further in section 3.2.1, is included in this approach of AI. This as one way of acting rationally is to use logical reason to derive the action that will achieve one's goals, and then act upon that conclusion (Russell & Norvig, 2014, p. 4). However, according to the authors, correct inference does not cover for all rationality, as sometimes there is no provably correct action, even though an action needs to be taken. There can also be situations where inference cannot be used at all, such as reflex actions that prevent one from getting hurt – which can be more successful than a slower action taken after careful deliberation (Russell & Norvig, 2014, p. 4).

Ng (2016) is of the opinion that every corporation needs to fully understand what AI is and what it can do in relation to their strategy, as AI is already transforming advertising, e-commerce, web search, finance, media, logistics, and many other areas. A recent survey of marketers identified AI as the technology they are most likely to implement by 2020 (Kardon, 2019), whereas another survey showed that eighty percent of marketing executives believe AI will revolutionize their field in the next five years (Kardon, 2019). Accordingly, research has shown that AI is already becoming a practical tool near-term with capability of increasing the productivity and efficiency of the marketing team and its manager, including tasks such as lead scoring and predictive analytics, automated email conversations, customer insights, personalizing with data as well as content creation to a certain extent (Kardon, 2019). Syam and Sharma (2018, p. 140) stresses that machine learning and AI tools place greater statistical power in the hands of marketers and can significantly increase the efficiency in tasks such as

segmentation, targeting, demand estimation and sales forecasting. Accordingly, a small but growing number of firms are investing in machine learning in order to augment strategic decision-making (Schrage & Kiron, 2018a).

As of today, however, there is a big gap between ambition and execution of AI strategies in most companies (Ng, 2016). Even though 85% of executives believe that AI will help them obtain or sustain a competitive advantage, only about 20% has incorporated AI in their offerings of processes and only 39% of companies have a strategy for it (Ransbotham et al., 2017).

Below is a model of the relationships between the various techniques within AI described in the coming sections of chapter 3.

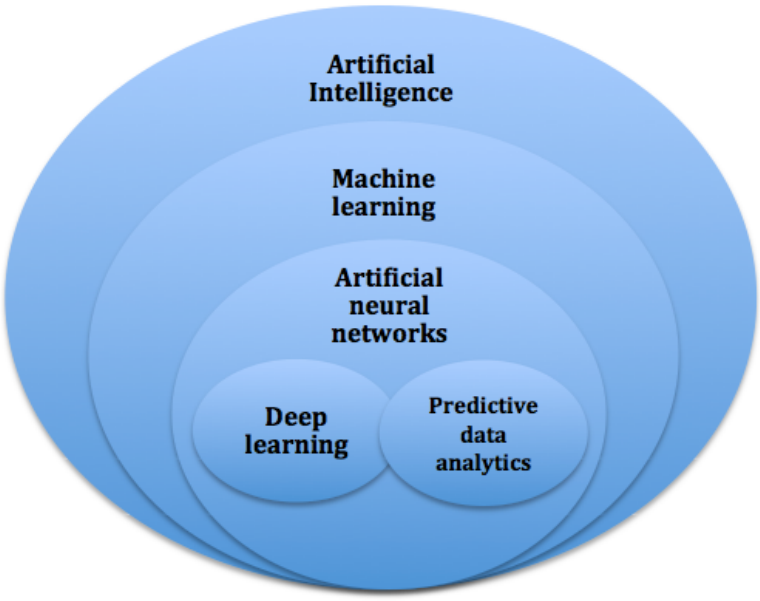

Figure 1 - Techniques within AI

3.1.1 Machine learning

With the arrival of personal computers and wireless communications, everybody is now a producer as well as consumer of data (Alpaydin, 2014, p. 2). This data is commonly utilized by firms with a technique called machine learning, which is a major subcategory within AI (Alpaydin, 2014, p. 3) and the area of AI that probably has received the most attention in business and marketing (Schrage & Kiron, 2018a, b). According to Alpaydin (2014, p. 3), machine learning can be defined as "… programming computers to optimize a performance criterion using example data or past experience." Machine learning uses statistics to build mathematical models with the core task of making inference from a sample, which are either descriptive - to gain knowledge from historical data, or predictive - to make predictions of the future, or both (Alpaydin, 2014, p. 3). The model is defined by a set of parameters and learns to optimize these parameters by using either training data or past experiences (Alpaydin, 2014, p. 3-4). In training those models, efficient algorithms are needed for optimizing the performance criterion in addition to storing and processing the vast amounts of data that we typically have (Alpaydin, 2014, p. 3-4). An algorithm is a "sequence of instructions that should be carried out to transform the input to output", e.g. for sorting data where the input would be a dataset of numbers, and the output would be their ordered list (Alpaydin, 2014, p. 2). There may be several algorithms available for this task, in which one wants the most efficient one that requires the least number of

instructions, memory, or both. The efficiency of the inference or learning algorithm with regards to its space and time complexity can be just as important as its accuracy in prediction. Based on the mathematical models learned by algorithms, we can find patterns or regularities in the data, which is the niche of machine learning (Alpaydin, 2014, p. 3). According to the author, those patterns can help us to understand the process, or can be used to make predictions of the future.

Machine learning models can learn in several ways, such as supervised learning, unsupervised learning and reinforcement learning (Attaran and Deb, 2018, p. 288). In supervised machine learning techniques, the aim is to learn a mapping from an input, X, to an output, Y, whose correct values are provided by a supervisor (Alpaydin, 2014, p. 11). Some practical applications of supervised learning include risk assessment, fraud detection, customer segmentation as well as text, image and speech recognition (Day, 2011). In unsupervised learning, however, there is no supervisor, and as such there is only input data in which we want to find regularities. Certain patterns will occur more frequently than others, and the aim is to see what happens and what does not – a technique called density estimation in statistics (Alpaydin, 2014, p. 11). One method involving density estimation is clustering, which is used to find clusters or groupings of input (Alpaydin, 2014, p. 11). If for instance data of past customer's demographic information and past transactions with a specific firm is inserted as an input, a clustering model can perform customer segmentation based on similarities in their attributes. Another relevant application for unsupervised learning in marketing is basket analysis – which implies finding associations between products bought by consumers (Alpaydin, 2014, p. 4). If people who buy product X frequently also buy product Y, and there is one customer who only buys X, that person is a possible Y customer whom we can target for so called cross selling.

In reinforcement learning, the algorithms learn which actions that yield the greatest rewards through a trial and error process including rewards or penalties for its actions, in trying to solve a problem (Alpaydin, 2014, p. 518). After doing this repeatedly, it learns the best policy – which is the sequence of actions that maximizes the total reward (Alpaydin, 2014, p. 517). This includes feedback provided from dynamic environments, such as playing a game or driving a vehicle (Alpaydin, 2014, p. 518-519; Attaran and Deb, 2018, p. 288). Examples of practical applications are within robotics, navigation and gaming (Nevala, 2017, p. 18). As mentioned in section 3.1, Google's AlphaGo used reinforced learning as well as supervised learning in order to master the game of Go (Silver et al., 2016, p. 484).

3.1.2 Artificial neural networks

A common technique used in machine learning and in its applications within marketing is artificial neural networks (Huston, 2017; Syam & Sharma, 2018, p. 137). Artificial neural networks take their inspiration from the brain and were originally used in neuroscience and cognitive science, to understand the functioning of the brain by constructing models of the natural neural networks in it (Alpaydin, 2014, p. 267). Accordingly, artificial neural networks are used for areas such as speech recognition, learning and vision, to name a few (Alpaydin, 2014, p. 267). Deep neural networks, a more advanced version of this technique, was one of two techniques used in building AlphaGo (Silver et al., 2016, p. 488). Moreover, deep learning as well as predictive data analytics are techniques utilizing artificial neural networks.

3.1.3 Deep learning

Progress in research regarding machine learning in combination with great increases in computing power and available data, has led the machine leaning technique of deep learning to evolve much lately (Nevala, 2017, p. 19). Deep learning is an advanced machine learning technique that utilizes sophisticated neural networks, and has its name as the models generated are much more complex and ingest vastly larger amounts of data, than traditional neural networks (Nevala, 2017, p. 19). The thought behind deep learning is to acquire feature levels of increasing abstraction, with minimum human contribution (Bengio, 2009, referred in Alpaydin, 2014, p. 308; Hutson, 2017). According to Nevala (2017, p. 19) deep learning is the foundation of numerous advanced machine-learning systems as of today.

3.1.4 Predictive data analytics

One of the areas where machine learning is frequently used is within predictive data analytics, which at the present is a technique used for customer insights, content personalization as well as targeting decisions (CMO Survey 2019, p. 55). In all predictive data analytics, a model is trained with machine learning, more precisely supervised machine learning, using historical examples in order to make future predictions (Kelleher et al, 2015, pp. 1-2). These predictions are used to help people or organizations make well-informed decisions. Predictive data analytics is the focal field of Infobaleen as they work with modeling product recommendation engines (Infobaleen, n.d. a). This implies that this is likely to be the machine learning technology that their customers, in which some are interview objects for this study, probably has the most experience with.

Except for the above-mentioned usage areas for predictive analytics, it can also be used for price prediction, risk assessment, propensity modeling and document classification, amongst many other tasks (Kelleher et al., 2015, p. 1-2) relevant to marketing. Propensity modeling is the construction of models, which predict future customer actions based on historical behavior; for example, how they would respond to a marketing effort or their propensity to purchase a certain product (Kelleher et al., 2015, p. 2).

3.1.5 Black boxes

A major problem in machine learning concerns the interpretability of the model's predictions (Kelleher et al., 2015, p. 522). For some techniques within machine and deep learning, the results they give is almost entirely un-interpretable, a problem referred to as *black box* (Hutson, 2017; Kelleher et al., 2015, p. 522). Others however are easily interpreted. Kelleher et al., 2015 (p. 522) describes that this issue often cause businesses to not accept and incorporate the predictions made by a model into their decision-making, as they need the predictions to be explained and justified. Furthermore, Davenport and Kirby (2016) state for humans to interact more effectively with AI-technologies, it is essential to know how the outcome is derived.

3.1.6 Ethics and AI

Despite the positive outlook of AI in creating value to firms and consumers, ethical aspects shall not be overseen. This because ethical barriers could inhibit the implementation of new technologies and methods, thus restricting the possibilities of marketing managers. To begin with, Borah et al. (2017, p. 51) has shown that a feeling of vulnerability among consumers generates negative outcomes for firms such as negative abnormal stock returns and damaging customer behaviors. This feeling of vulnerability arises with increased levels of firms' collection and usage of their data.

The authors further argue that data transparency and customer control practices can mitigate these negative effects. Furthermore, Martin and Murphy (2017, p. 152) conclude that firm performance is enhanced by prioritizing data privacy in an authentic way, with effects such as favorable market response, customer loyalty and engagement benefits. Given the awareness among today's consumers, firms lacking authenticity in their privacy efforts will be easily identified. The authors further argue that for privacy as a strategy to be successful in the long term, open and transparent communication is necessary, both with customers and regulators. According to Martin and Murphy (2017, p. 152), the firms that commit to privacy as strategy in the long term, will also benefit from laxed regulatory oversight, as well as enhanced consumer trust. The authors further write that trust is a fundamental building block to positive performance as well as other firm relational benefits, but as building trust is a slow process, it can rapidly collapse. Moreover, further restrictions on the storage and usage of consumer data could be a game changer, by shifting the power balance back to the consumer, as with the General Data Protection Regulation (GDPR) in the EU (Marinchak et al., 2018, p. 20).

According to Brundage (2014), various scholars have proposed to compute machines with ethics, to ensure positive social outcomes in a future with general AI. Brundage (2014), argues that as this increases the probability of ethical behavior in some situations, the nature of ethics, the computational limitations of computational agents and the complexity of the world, inhibit this possibility. Therefore, bases upon this theory, one can draw the conclusion that human intervention will be a necessity in marketing departments for a foreseeable future, as unethical behavior is usually considered as a non-successful strategy.

3.1.7 Implications for competition

According to Power (2017), Amazon, Facebook and Google are currently in the lead in the AI revolution, which has given them a huge market advantage over most consumer goods firms and retailers. This by providing services that achieve highly personalized, targeted advertising and marketing, to attract customers. However, firms such as IBM, Salesforce and a multitude of startups are now offering AI marketing tools which are easy to use, meaning they do not need to hire expensive data scientists to understand how to operate the tool and analyze its outputs (Power, 2017). Furthermore, with software-as-a-service (SaaS) and pay-as-you-go pricing, these tools are now accessible to firms with less resources as well (Power, 2017). Moreover, these new tools can manage the integrated process over all channels, instead of working within individual marketing channels or optimizing specific marketing tasks (Power, 2017).

Furthermore, according to Ng (2016), the subsequent step for executives after understanding what AI can and cannot do, is to integrate it into their strategies - meaning to understand where value is created, and what is difficult to imitate. The AI community is exceptionally transparent, where most top researchers publish and share their ideas, as well as open-source code. Therefore, data and human resources are scarce, rather than the technology. According to Ng (2016), leading AI teams can replicate others' software in, at most, 1-2 years, whereas it is increasingly difficult to access others' data. Hence, the defensible barrier for many businesses is data, rather than software. Ng (2016) further states that open-source software usually must be highly customized to the business context and data, why simply downloading and applying the software to the data will not work. Therefore, there is a huge demand for the scarce AI talent that can perform this work.

3.2 Marketing

3.2.1 The role of marketing and marketing managers

Fundamental shifts in society, economy and politics puts a pressure on marketing to rethink its purpose, premise and models that have defined marketing for the past 50 years (Webster & Lusch, 2013, p. 389). Scholars argue that the increasing complexities marketing faces are mainly consumer demographics, emerging technologies and increasing quantities of data (Bolton et al., 2013; Kumar et al., 2013; Wirtz et al., 2013), changing business models (Ehret et al., 2013) and a continuous necessity to develop powerful value propositions (Bolton et al., 2014; Payne & Frow, 2014). The marketing departments that do not possess relevant market-sensing capabilities, struggle to drive profitable (Wirtz et al., 2014, p. 175).

Scholars are of different opinions regarding the marketing functions contribution to firm performance. Wirtz et al. (2014, p. 188) as well as Moorman and Rust (1999, p. 189) have identified a strong direct connection between the influence of the marketing department and firm performance, where Wirtz et al. (2014, p. 188), argue that marketing departments are essential to meet the needs of the customers on an increasingly complex market place. In contrast, findings by Verhoef and Leeflang (2009) suggest that the market orientation of the firm, instead of the marketing department itself, is the antecedent to firm performance. In this way, the authors support the notion of marketing losing ground within firms (Ganesan et al., 2005), in which Nath and Mahajan (2008, p. 65) claim that "... over the past three decades, marketing academics have raised their concern with marketing's decreasing influence at the level of corporate strategy."

However, according to Webster (1992, p. 14) the core responsibility of marketing management is "... making sure that every aspect of the business is focused on delivering superior value to customers in the competitive marketplace." At management level, marketing is part of the firms strategic planning as well as responsible for information management, environmental scanning and coordination of network activities (Webster, 1992, p. 14). Tasks involved are customer focus, market segmentation as well as targeting and positioning; everything assisted by information technology (Webster, 1992, p. 15). More recent research also suggest that the influence of marketing departments is limited to advertising, relationship management and segmentation, targeting and positioning (Verhoef & Leeflang, 2009, p. 26). Moreover, Verhoef and Leeflang (2009, p. 26) state that decision domains that historically has been assigned to marketing, such as pricing and distribution, are now dominated by other departments.

It is evident that marketing in firms can function in many ways, where a recent survey conducted by Christine Moorman (CMO Survey, 2019, p. 49), reported each of the following activities to be performed by at least 50% of the responding CMOs; brand management, digital marketing, advertising, social media, public relations, promotion, positioning, marketing research, lead generation, marketing analytics, insight, as well as competitive intelligence. Furthermore, only a third of all CMOs in the survey viewed their role as well-defined. Whitler and Morgan (2017) identify three generic roles a CMO can take upon. The Commercialization role, which they estimate to accord for 46% of all CMOs, is focused on spurring sales through marketing communications, in which the influence in strategical matters is limited. The Strategy role on the other hand, accords for 34% of all CMOs, and has more of a focus on designs for growth strategy and is more involved in innovating and designing products through customer insight

and analysis. Lastly, the Enterprise-wide Profit & Loss constitutes the remaining 23% of CMOs, which is a combination of the previous two roles; focusing on delivering profitable growth by designing strategy and overseeing commercialization.

A survey found 80% of the responding CEOs to be "not very impressed" with their marketers, and they perceived them as "poor business performers" (Fournaise Group, 2012), and other research has found most CMOs to experience short tenure (Nath and Mahajan, 2010, p. 66). This distrust towards marketers and marketing managers can be the result of a lack of market-sensing capabilities that are necessary to navigate through a fast-changing landscape (Wirtz et al., 2014, p. 175). Moreover, a poorly-defined role is also suggested to contribute to this distrust, where it has been suggested CMOs are not given enough authority to perform what is expected from them (Whitler & Morgan, 2017). Hanssens and Pauwels (2016, p. 187) argue that it can also be due to the difficulty with holding CMOs and the marketing department financially accountable for their actions. The authors state that due to the varied nature of marketing, top management must rely on a collection of weakly interrelated performance metrics; attitudinal, behavioral and financial. As a result, it is difficult to assess what the marketing department truly contributes with, thus results in a distrust and marketing becomes less involved at senior levels of decision-making (Hanssens & Pauwels, 2016, p. 187). Therefore, marketing value assessment is vital for marketing to overt influence in top management, ranging from short-term tactical decisions, to be a fundamental driver of growth (Hanssens & Pauwels, 2016, p. 187).

Promisingly, Hanssens and Pauwels (2016, p. 187) conclude that the significant advances in data quality and quantity together with new analytical methods have increased the assessability of marketing´s value. Due to digitization, soft metrics (attitudinal) are now becoming increasingly quantifiable (Hanssens & Pauwels, 2016, p. 187), but much are yet to be done, since only 36% of the responding CMOs in the CMO Survey (2019, p. 61) reported to possess tools to quantify marketing's effect on firm performance.

3.2.2 Marketing and technology

The effects of an ongoing technological transformation can already be seen elsewhere. As of 2014, it was predicted that CMOs would spend more on IT than their CIO counterpart (Gartner, n.d., referred in Whitler & Morgan 2017). Furthermore, research suggests that firms that better can utilize technology to create superior customer experiences, reach higher levels of revenue growth (Bus, Ti, & Rt, n.d.). The results from the CMO Survey (2019, p. 55) indicate money spent on marketing analytics is expected to grow from 6.6% of marketing budget to 11.3%.

According to Marinchak et al. (2018, p. 22), AI alternates the roles, rules and tools of the marketing game. The authors states that" ... how, what and to whom to sell, as well as- what, how and from whom to buy, is increasingly an all-digital, AI-augmented and automated process." This notion is supported by responding managers in a global study (Schrage & Kiron, 2018b), where 79% reported to commit to investments in skills or training to boost the effectiveness of machine learning in marketing. Accordingly, being able to convert novel technological opportunities and firm IT investment into customer demand growth is of utter importance across industries (Bus, Ti and Rt, n.d.). In this way, according to Wedel and Kannan (2016, p. 116), analysts in the marketing department must possess both broad and deep knowledge. First, they need to be sufficiently knowledgeable in marketing modeling techniques for predicting marketing response, marketing-mix optimization and personalization using various estimation

techniques, as well as machine learning methods (Wedel & Kannan, 2016, p. 116). Simultaneously, they must possess soft skills and state-of-the-art knowledge in marketing, to ensure that the capabilities and limitations of analytical models for unique marketing purposes can be communicated to decision-makers (Wedel & Kannan, 2016, p. 116). Furthermore, Wedel and Kannan (2016, p. 117) argue that routine marketing processes and decisions are becoming increasingly automated, in which the challenge of finding methods to ground these automated decisions in substantive knowledge, managerial intuition as well as supervision arises. The authors further state that marketing departments need managers with skills and knowledge of business strategy as well as being sufficiently familiar with technology and analytics.

When the marketing function of firms invest heavily in technology and technological skills, the lines of responsibility between the CMO and CIO become ambiguous (Whitler et al., 2017, p. 314). Accordingly, this imposes a challenge on firms, where a high degree of coordination and cooperation is required between the two roles, if to succeed in utilizing firms' IT investments full potential to enhance customer demand (Whitler et al., 2017, p. 314). Whitler et al. (2017) have conducted research on the relationship between the CMO and CIO, where they outlay the sources of conflict between the two as well as the managerial implications in mediating them. The authors break it down to four mechanisms to promote alignment; perspective alignment, accountability alignment, goal alignment and structural alignment.

3.2.3 AI-assistants

The role of marketing managers is not solely believed to reshape from within, as AI assistants are expected to radically change the relationship between firm and customer (Dawar, 2018; Marinchak et al., 2018). According to Dawar (2018) and Marinchak et al. (2018), AI-assistants, such as Amazon Alexa and Google Assistant, will be able to predict what combination of price, performance and features the consumer prefers, and eventually be able to satisfy consumer's needs better than themselves. Therefore, this will impact the way firms acquire, satisfy and retain customers (Dawar, 2018).

In this era, Dawar (2018) argues that the main target of marketing will shift from forgetful, biased consumers to AI-assistants, that preserve all possible information. The AI-assistant will consider pricing, characteristics, past performance, reviews, weighted by authenticity and relevance, and the preferences and past behavior of the consumer (Dawar, 2018). Therefore, influencing the algorithms will be the focus of firms, in which purchasing information from the AI-platform to understand the customized criterion that the AI applies – and to be "listed" on them, will be crucial (Dawar, 2018). In this way, Dawar (2018) believes brands will design their offers and innovation strategies around getting AI-assistants to display their products. Moreover, AI assistants will reevaluate purchases on a regular basis, in contrast to the consumer of today who often stays with the same brand out of convenience (Dawar, 2018). This will intensify competition since incumbent brands must constantly justify their position, though information that will help inhibit brand switching will be available to purchase (Dawar, 2018). If a consumer indicates brand switching by telling the AI-assistant that he or she desires to try a new one, the AI-platform can compute whether the consumer is worth keeping. If yes, the incumbent brand can customize an offer which reflects exactly what is needed to make the customer stay. If the above explained scenario becomes true, the value of brands is uncertain. According to Dawar (2018), some categories for some consumers, brands will still be of more importance than price, which the AI-assistant will take into consideration. Moreover, since brick-and-mortar stores will still be the

main-retail channel for a foreseeable future, brands will continue to be influential. As consumers shift to AI-platforms, brands must evaluate the importance of physical retail, and design strategies accordingly (Dawar, 2018). Furthermore, Marinchak et al., (2018, p. 22) stress the importance for firms to understand how to market their products to an audience consisting both of consumers and AI-assistants. However, for the AI-platforms to earn the confidence of the consumer, Dawar (2018) argues they must ensure accuracy, alignment and privacy.

First, the consumers will prefer the platform that most accurately learns its desires and requirements (Dawar 2018). Second, the platforms must manage the conflict of interest between consumer and brands carefully (Dawar, 2018). On one hand, they must focus on meeting the needs of the consumer, but if not, the trust will erode. On the other hand, there will be contractual arrangements to provide preferred placements and consumer data to brands. If consumers sense an AI-assistant pushes a paying brand which doesn't align with their needs, that will also undermine trust (Dawar, 2018). Therefore, Dawar (2018) suggests platforms to be fully transparent about their relationships with brands, as well as giving paid and unpaid recommendations equal weight. Lastly, AI-platforms and marketers, will need to balance the use of personal information and AI-performance; the more data gathered, the better the recommendations – but the more vulnerable consumers may feel (Dawar, 2018). Dawar (2018) suggests solutions to be offering customized privacy settings, as well as arguing, that privacy is protected since the data is managed by machines without human intervention.

3.3 AI and decision-making

3.3.1 Fundamentals of decision-making

Syam and Sharma (2018, p. 135), argue that the area of decision-making will be the fundamental driver in the fourth industrial revolution. Traditional informational technology helped with processing of communications and data, but the decision-making was still human, whereas in this new shift, computers will also be able to make reliably appropriate decisions (Syam & Sharma, 2018, p. 135).

According to Kahneman (2003, p. 698), there is substantial agreement among scholars to differentiate between two types of cognitive processes, which Stanowich and West (2000) characterized as System 1 and System 2. System 1 operations are typically fast, automatic, requires almost no effort, associative, implicit and is often influenced by emotions as well as governed by habit, hence induces a difficulty to control or modify. System 1 is what produces intuitive judgements (Kahneman, 2003, p. 698), where intuitive intelligence is what phycologists such as Carl Jung define as "... the human capacity to analyze alternatives with a deeper perception, transcending ordinary-level functioning based on simple rational thinking (Bishop, 2000). In a decision-making context, superior intuition can be viewed as a "gut feeling" or "business instinct" when predicting the outcome of a new product or the positioning of a product (Jarrahi, 2018, p. 4). In contrast, system 2 operations are slower, serial, effortful, are more often monitored consciously and deliberately controlled; as well as relatively flexible and potentially rule governed (Kahneman, 2003, p. 698). These two should not be viewed as two separate processes, but instead as a dual-process in which they are complementary (Kahneman, 2003, p. 699). In this way, one of the functions of System 2 is to monitor the quality of both operations, and subsequently to initiate behavior (Kahneman, 2003, p. 699). According to Kahneman (2003, p. 699), the monitoring function is lax, resulting in intuitive judgments to be frequently manifested, including erroneous ones.

Accordingly, Kahneman and Klein (2009, p. 525) are of the opinion that intuitive judgments can be the result of genuine skill, but can also arise due to human biases, which are inappropriate applications of heuristics. Instead, for correct intuitive judgments to arise, two conditions must be fulfilled; a high-validity environment as well as an adequate opportunity to learn in that environment (Kahneman & Klein, 2009, p. 524). High-validity implies that the relationships between objectively identifiable cues and the subsequent events are stable, in which medicine and firefighting are two good examples of practices in environments of moderately high-validity (Kahneman & Klein, 2009, p. 520). On the other hand, outcomes are unpredictable in zero-validity environments, where the long-term forecast of political events is an appropriate example of an environment with close to zero-validity (Kahneman & Klein, 2009, p. 524). Furthermore, an adequate opportunity to learn simply translates to rapid and unambiguous feedback (Kahneman & Klein, 2009, p. 524).

Moreover, Kahneman and Klein (2009, pp. 523-524) suggest that algorithms outperform human judgment in two types of situations. First, when validity is very high in environments with high predictability, where there exists a performance maximum, and where humans can fail due to occasional lapses of attention (Kahneman & Klein, 2009, p. 523). To this category counts most of the applications in which machine learning automates human-decision making as of today, where an algorithm outperforms humans due to their ability in analyzing vast amounts of data, and never makes an erroneous calculation (Kahneman & Klein, 2009, p. 523). Second, in low-validity environments where humans struggle with detecting regularities, and where the consistency of judgment is critical (Kahneman & Klein, 2009, p. 523). Predicting loan default is one such task, due to the often small samples of the critical outcome, where algorithms outperform human judges by using objective demographic and personal data as inputs, rather than subjective impressions of reliability (Kahneman & Klein, 2009, p. 523). In this way, although the accuracy of the algorithm is limited, they still outperform humans due to their advantage of consistency (Kahneman & Klein, 2009, p. 523).

3.3.2 Human-machine symbiosis

Furthermore, Jarrahi (2018) draws upon the work of psychologists when identifying areas where machines can fill a function in decision-making. The author suggests that machines can perform tasks that are operated by System 2 (Jarrahi, 2018, p. 5), which is activated in humans when for example solving a mathematical equation or reading a map (Kahneman and Klein, 2009, p. 519). In other words, tasks where an analytical approach is necessary, involving the analysis of knowledge through conscious reasoning and logical deliberation (Jarrahi, 2018, p. 4). Indeed, the process of rational decision-making in System 2 can be replicated by algorithms, since rationality is a rule-governed, controlled and neutral process (Kahneman, 2003, p. 698). Further, AI can handle System 2 operations, since rationality is a slow and effortful process, but done quickly and effortless by algorithms (Kahneman, 2003, p. 698; Jarrahi, 2018, p. 5). In contrast, System 1 operations produce intuitive judgments, in which "intuition is a capacity for attaining direct knowledge or understanding without the apparent intrusion of rational thought or logical inference" (Sadler-Smith and Shefy, 2011, p. 77), thus better assigned to humans due to the difficulty in computing intuitive capabilities. This because intuition is implicit, associative, often influenced by emotions and governed by habit (Kahneman, 2003, p. 698), hence relies on experience and knowledge acquired outside the decision-making domain.

We return to the former CEO of Loreal (cited in Sadler-Smith and Shefy, 2011, p. 76) who is of the opinion that the challenges for managers are a matter of imagination and intuition; "It is intuition (when one asks) 'What do these brands have that just might seduce the world?' But also in terms of imagination, (one asks) 'What could they become to seduce the world?'. This way of viewing the process of formulating a branding strategy is consistent with what Mintzberg (1994) propose being the foundations of strategic thinking; synthesis, creativity and intuition. Therefore, strategic thinking predominately results in an "integrated perspective of [the organization]" rather than a "too-precisely articulated vision of direction" (Mintzberg, 1994, p. 108). Considering that strategic thinking requires a level of sense making and understanding outside the specific decision-making domain (Jarrahi, 2018, p. 11), human actors are unarguably still vital to organizations.

Due to humans and machines complementary strengths, Jarrahi (2018) is of the opinion that machines should augment human decision making, rather than automate, which aligns with what other scholars have proposed (Epstein, 2015; Marinchak et al., 2018). This symbiosis can be manifested through a combination of the speed of AI in collecting and analyzing information, and humans' superior intuitive judgment and insight (Jarrahi, 2018, p. 7). This is in line with a statement by Reid Hoffman, executive chairman of LinkedIn; "AI can sift through vast amounts of data to highlight the most interesting things, at which point managers can drill down, using human intelligence, to reach conclusions and take actions" (Hoffman, 2016). In this way, human insight can ascertain what variables may more strongly influence outcomes (out of infinite number of variables), which can then tell the machine what factors must be well-grounded in data collection and analysis (Jarrahi, 2018, p. 7). The conclusion of this analysis might be equivocal where there can exist multiple alternate routes, in which human intelligence can choose the alternative that seems to be more intuitively sensible (Jarrahi, 2018, p. 7).

Due to this equivocality, Jarrahi (2018, p. 8) suggest that human actors will further be responsible for handling, in which they decipher the internal and external political landscape, and build the foundation required to successfully make, negotiate and implement decisions. In this way, emotional intelligence is essential to the understanding of the political dynamics that underly equivocal decision-making situations (Jarrahi, 2018, p. 8), an intelligence that will be restricted to humans for a foreseeable future (Jarrahi, 2018, p. 8; Beck & Libert, 2017). Moreover, an emotional and social understanding is vital to the development of visions, and subsequently to persuade and motivate others to move in that direction (Jarrahi, 2018, p. 8). This aligns with the view of Beck and Libert (2017), who advocate for human actors still being best suited to spur a leadership team to action, avoid political disputes and identify skilled individuals to lead change.

3.3.3 Barriers

Insofar in this chapter, the elements of decision-making that are believed to be supported by AI been discussed, as well as why humans still are essential to organizational decision-making. However, Ransbotham (2016) has pointed to other barriers to full-scale implementation of AI in organizational decision-making, that are of more practical nature. To begin with, for an algorithm to perform well, it needs large data sets, and organizations do seldom have enough examples to understand the causality between everything in the world that impacts an organization (Ransbotham, 2016). Furthermore, Ransbotham (2016) state that even with ever-growing data sets, it

can still be difficult to capture known explanatory variables. The more information that is known, structured and available, the better the algorithms will perform, in which it is especially complicated to incorporate information about events where no data was collected, or that did not happen but could have (Ransbotham, 2016). Lastly, there is no possibility to perform randomized A/B tests, since every organization and its environment is unique, hence making it difficult to learn from decisions (Ransbotham, 2016). Instead, a successful manager imagines counterfactuals based on limited information.

The scholars presented in this chapter hitherto have all advocated for a human/machine symbiosis, but others view it differently. Parry et al. (2016, pp. 571-572) embrace machines to substitute human decision-making, since humans are subject to cognitive biases and irrationality. Furthermore, they suggest that agency problems which mainly arise due to non-aligning interests of principals and agents, could be reduced by having an AI decision-making system (Parry et al., 2016, p. 590). Lastly, an AI decision-making system would de-individualize the leadership, thus mitigating the trust issues that might arise due to the far distance between the decision-making leader, and those at lower hierarchical levels in the organization (Parry et al., 2016, p. 590). However, a complete de-individualization is not achievable when humans hold veto, which is a necessity to avoid ethical issues if implementing a fully-autonomous AI decision-making system (Parry et al., 2016, p. 590). Therefore, they posit a model where humans can veto a decision generated by an AI decision system, a veto that is also logged (Parry et al., 2016, p. 590). In this way, the human leader can be held accountable for the execution of the veto, as well as the event log would function as additional data, to train the AI-system a revised optimal solution to the original decision (Parry et al., 2016, p. 590).

3.4 Visualization of theoretical framework

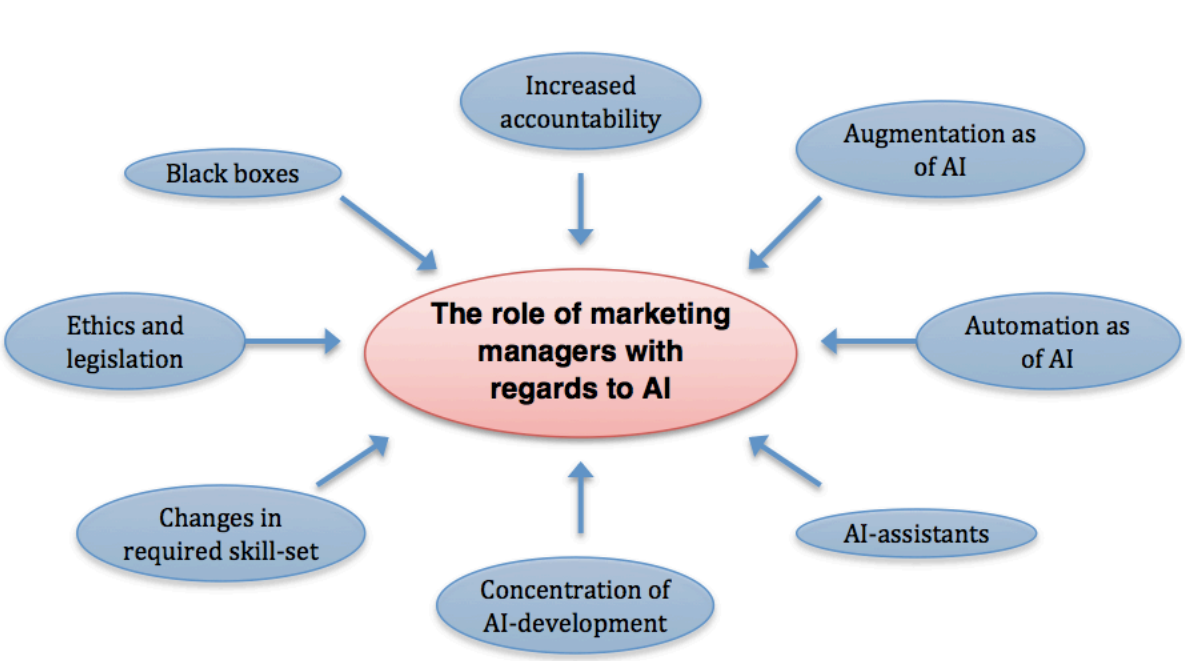

Figure 2 - Visualization of theoretical framework

Figure 2 above describes the various factors that affect the role of marketing managers in relation to AI, as described throughout the theoretical framework. The figure has the sole purpose of making the theoretical framework more apprehensible for the reader. Accordingly, Increased accountability implicates that AI allows for increased financial accountability within marketing; Augmentation as of AI and Automation as of AI refers to both marketing tasks and marketing decision-making which are either augmented or automated by AI; AI-assistants refers to the prognosticated impacts AI-assistants will have on marketing, the relationship between firms and consumers as well as for competition; Concentration of AI-development refers to what the concentration of AI-development will mean for B2C-firms within the consumer goods and tech industries, as a few tech-giants are believed to lead the development of AI due to their vast resources and access to data; Changes in required skill-set refers to the implications AI will have on the skill-set which is necessary for marketing managers to possess; Ethics and legislation refers to how the increased collection and usage of consumer data impacts legislation and direct or indirect demand on firms to act and communicate good ethics; lastly, Black boxes refers to the sometimes poor explainability of the conclusions provided by algorithms, and how this affects usage of AI in marketing.

4. Practical method

The practical method, which was used when conducting this study, is described throughout this chapter. The chapter begins with a description about the choice of interview objects, the sampling technique and access to the interview objects. This is followed by a description of how the interviews were conducted, the transcribing process, and qualitative analysis of the gathered data, the ethical considerations regarding the data collection as well as the truth criteria regarding the validity and reliability of the study.

4.1 Choice of interview objects, sampling technique and access

The qualitative data collection for this study included a total of six interviews, of which three interviews were held with managers in marketing - one CMO, one CRM Manager and one Brand Manager – all with experience of usage of AI in their respective marketing departments. Moreover, three interviews were held with experts at the intersection of AI and marketing, of which one is a consultant and the two others being co-founders of Infobaleen. One of the co-founders of Infobaleen, Martin Rosvall, is a professor in physics at Umeå University with high technical expertise in the area of AI, and as such helped to bring deeper insights into questions of more technical nature. The other two AI-experts work with both the technical and the strategic aspect of AI in marketing.

Accordingly, the purpose of this configuration of interview objects was to attain a holistic view of the focal area with insights from both marketing managers with experience of AI-usage in their field, as well as experts at the intersection of AI and marketing. Thus, the marketing managers shared what they are intended to contribute with, what skills they use to fulfill their purpose as well as how their role is being affected by increased levels of AI-capacity. Further, by asking the AI-experts how AI is transforming marketing, as well as regarding the present and future believed capabilities of AI, we were able to bring insight into how AI can and will automate and/or augment decision-making within marketing departments. Moreover, by interviewing AI-experts in addition to marketing managers, we were able to avoid eventual bias of the marketing managers due to their possible emotional connections to their future work role.

For this study, the sampling technique of purposive sampling has been used, which is described by Palinkas et al. (2015, p. 533) as a technique that is "widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of resources." As described by Cresswell and Plano Clark (2011, referred in Palinkas et al., 2015, p. 534), this involves "identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest". This sampling technique was chosen for its efficiency and due to our limited resources of time and funding. Moreover, as people working in business are often busy, it might be difficult to gain access to appropriate interview objects (Bryman & Bell, 2011, p. 473). As a solution to this problem, Saunders et al. (2012, p. 2017) suggest that the investigators use their existing contacts. With this recommendation in mind, we got in touch with our contact at Infobaleen, Jakob Sjölander, to see if he wanted to participate in an interview, as we saw him as "especially knowledgeable" and experienced at intersection of AI and marketing. Martin Rosvall, theoretical physician and co-founder of Infobaleen also participated as interviewee, due to his technical expertise. Infobaleen further assisted giving access to three other qualified interview objects for this research, which gave further insights into the research problem. This is an example of the snowball sampling technique within

purposive sampling (Palinkas et al., 2015, p. 535). Moreover, we also identified and reached out to some other relevant existing contacts that would fit the interviewee criterion, and were able to recruit one further participant. After these six interviews, we experienced empirical saturation to answer the research question, which according to (Roulston and Choi, 2018, p. 244) is when you know that sufficient data has been collected.

As many of the interviewees have a connection to Infobaleen, is it possible that some of their experience with AI is colored by what they have experienced and learned through Infobaleen and their work with predictive analytics. However, by thoroughly investigating the literature in the area as well as including one other case in the study that has no connection to Infobaleen, we believe this problem is limited. Furthermore, by ensuring the interviewed managers had different management positions, as well as the interviewed experts had different areas of expertise, although all at the intersection of marketing and AI, we believe to have decreased the possible bias that arises from having a small number of interview objects.

4.2 Conduction of interviews

4.2.1 Interview guide

As mentioned in section 2.5, semi-structured interviews are conducted with the help of an interview guide (Bryman & Bell, 2017, p. 454). Bryman and Bell (2011, p. 486) suggest that when writing the guide, we should ask ourselves the question "what do we need to know in order to answer each of the research questions?" As such, this was considered when the interview guides were designed. Moreover, as it is of importance to reflect upon what the respondents consider being important among the explored topics (Bryman & Bell, 2011, p. 488), it was decided that two different interview guides would be used. One of the guides was intended for the three marketing managers, and the other one for the three AI-experts. Marketing managers were asked questions such as "Are you primarily concerned with AI as an opportunity or a threat in relation to your role as a marketing manager?" and "How do you leverage intuition in your role as a marketing manager?", whereas asking questions such as "What do you think of AIs possibility in mastering capabilities such as intuition, creativity, persuasion and social understanding, at the same level as humans?" and "How will AI change organizations, businesses and marketing?" to the AI-experts. Accordingly, we were able to take advantage of the interviewees' respective experiences and expertise in a more effective manner, as well as gaining views from different angles. However, many of the questions considered the same topics, but formulated differently to be more accurate. The two interview guides are to be found in appendix 1 and 2.

Furthermore, Kvale and Brinkman (2009, p. 166) stress the importance of being knowledgeable as an interviewer, for an interview to be successful. The authors' address that the interviewer needs to be properly prepared for the interview, and that a good way to prepare is to perform a pilot interview. Bryman and Bell (2017, p. 266) also emphasize the importance of a pilot study in order to correct any eventual problems with the interview questions. For this research, a pilot interview with Jakob Sjölander, CEO of Infobaleen, was done conducted. We received some feedback as well as noticed some questions that needed to be reformulated. Moreover, this also made us more familiar with the semi-structure of the interview as well as it improved our flexibility regarding the interview guide. Later, an additional official interview was done with Sjölander as a part of the data collection for this study. Furthermore, during the first couple of interviews we continued to clarify the guide, to increase the interpretability of

the questions. We did not, however, add any new questions or chose to explore any new phenomenon during the data collection process.

4.2.2 Interviews through videoconference

According to Bogner et al., (2018, p. 663), face-to-face interviews are always the best alternative when conducting interviews. However, conducting the interview via videoconference software such as Skype is a good alternative if having time or budgetary restrictions, as well as reaching respondents who are geographically dispersed (Bogner et al., 2018, p. 663; Bryman & Bell, 2011, p. 206), as was the case in this study. Due to such restrictions, all but two interviews were conducted via Skype. The remaining two was managed face-to-face with one of the authors of this study being physically present and the other one present through Skype.

Interviews through videoconference software are often compared to telephone interviews, that have some clear disadvantages in comparison to face-to-face interviews, such as less control over the interview situation as well as lack of important non-verbal communication (Bogner et al., 2018, p. 663). Moreover, telephone interviews tend to be shorter than face-to-face interviews, which can lead to a decrease in the richness of gained information (Bogner et al., 2018, p. 663). However, according to Bogner et al. (2018, p. 663) the shortcomings of telephone interviews can partly be avoided by having a clearly structured interview strategy, which was the case for these interviews. Moreover, by using videoconference software such as Skype, all participants have a virtual presence which has the benefit of giving the interviewers better control over the interview situation (Bogner et al., 2018, p. 663). By using Skype, we were also able to communicate non-verbally and therefore increase the quality of the communication. Furthermore, we did not experience any decrease in the richness of our collected data despite conducting the interviews via Skype. The time of the interviews ranged from 31 minutes to 76 minutes with an average of 52 minutes, which is far more than the usual length of no more than 25 minutes for telephone interviews, as suggested by Bryman and Bell (2011, p. 207). We believe we were able to gain as much information as we could have from each respondent, which we ensured by asking at the end of the interviews, if we had overlooked any areas of importance.

Moreover, few technological issues were experienced throughout the interviews, which according to Bogner et al. (2018, p. 663) might otherwise be an issue with videoconferences. A helpful factor was certainly that most respondents were relatively young as well as actively works with technology in their everyday life. One problem we did experience was bad Internet connection as well as some background noises. However, this did not affect the quality of the interviews, as in such cases the other interviewer could precede with the interview meanwhile.

4.2.3 Conducting the interviews

Table 1 below shows an overview of the conducted interviews. As we had the possibility to meet two of the interviewees in person, these were conducted physically, although following the same structure as for the others. Both interviewers were present during each interview, but it was decided to have one first interviewer for each interview. The second interviewer could then take upon a more reflective role and come up with questions regarding clarification on answers and other spontaneous questions.

Interviewee	Duration	First interviewer
Jakob Sjölander, Infobaleen	31 minutes	Johannes
Robert Kviby, The Growth	68 minutes	Alex
CMO of Refunder	50 minutes	Johannes
Martin Rosvall, Infobaleen	48 minutes	Johannes
Marketing manager of Rusta	40 minutes	Johannes
Respondent 6	76 minutes	Alex

Table 2 - Overview of the respondents

In line with recommendations of Bryman and Bell (2017, p. 461), we always settled for having a quite setting when conducting the interviews, as well as having a stable Wi-Fi connection. Upon scheduled time we called the interview objects on Skype and started with some small talk to get to know each other and create a good environment for the interview. The interviewees were further asked how much time they had set aside for the interview, to adapt the pace of the interview. If we were not finished with the interview by the end of that time, we informed the respondent of the time situation and kindly asked if we could borrow some more of their time, which was not a problem. Accordingly, time was not an issue in all cases. After this, we took a few minutes to present ourselves and our research topic, as well as asking if the respondent had any questions regarding the study or the interview process. Having done this, we proceeded with explaining the ethical guidelines of the interview and the handling and usage of the collected data. The ethical considerations are described in greater detail in section 4.5.

The interview began with some initial questions where we asked the respondents about the firm they are employed by, what their role at this firm is as well as to briefly describe their backgrounds. This was done for two purposes, partly for the respondent to ease up and become comfortable through answering easier questions, and partly for us to gain a better understanding of the respondent and the firms they represent. After this, we moved on to ask more specific questions regarding the topics investigated through this research. We ended every interview by asking a broader question regarding the future of either marketing or AI depending on the interview object, where the respondent was allowed to be more hypothetical and general. The purpose of this was for the respondent to finish the interview with confidence and a good feeling. After this, we asked the respondents if they had anything they wanted to add regarding what we had been speaking about, or if they were of the opinion that something vital had been overlooked. This was never the case, however. After this, we thanked them for their participation and promised to send them a copy of the paper once it was finished and graded.

As the interviewer and the interview object are co-creators of the conversations in qualitative interviews, the former need to help the latter build up a meaningful and coherent reasoning (Patel & Davison, 2011, p. 82). As such, when we conducted our interviews, we focused on being flexible and adapting the interview guides so that the conversations would have a more natural flow and reach higher levels of insight. Thus, the guides functioned as a tool we used to make sure that all topics explored in this research was covered, but was not followed strictly. Furthermore, as five of the interviews were held in Swedish and the last one was held in English, the interviews held in Swedish had to be translated after transcription. As of this, the interview guides also had to be translated into Swedish, so that we would be able to use them free of friction in the Swedish interviews as well. Bryman and Bell (2011, p. 488) suggests that this translation could impose problems in the analysis of the material. However, as both

of us investigators are native Swedish speakers while also having studied in English at university level, as well as having spent time living in English-speaking countries, we experienced no problems when translating.

Prior to the interviews by Skype, there was also correspondence with the interview objects by email where we introduced ourselves, the theme of our research, formalities regarding the conduction of the interview as well as the ethics of the data collection. We believe this was helped to create enough trust, to get good and honest answers from the interview objects.

4.3 Transcribing

In qualitative research using interviews as data, Bryman and Bell (2011, p. 481) recommend recording the interviews. This is found to be an advantageous aspect, to avoid bias in quickly written notes and in the memory of the authors (Bryman & Bell, 2011, p. 481). It also has the advantages of allowing the researchers to focus on the interview and its questioning and listening (Saunders et al., 2012, p. 396). Furthermore, in all qualitative research, researchers are usually not only interested in *what* the interviewees say, but also *how* they say it, thus recording is necessary to catch the tonality (Bryman & Bell, 2011, p. 482). Taking notes on the other hand, has the benefit of making the respondents feel that their answers are of importance, as well as maintaining the focus of the interviewer. Saunders et al. (2012, p. 394) recommend using recording and taking notes simultaneously, to reap the benefits from both methods. However, we agreed to only use recording since the interviews were conducted through videoconference, thus no positive visual aspects from taking notes. Instead, we could listen carefully to better think of valuable follow-up questions. After the interviews were recorded, we transcribed the recordings to text, which indeed was a time-consuming process, as stated by (Bryman & Bell, 2011, p. 481). However, it has the advantage of thoroughly processing the material (Bryman & Bell, 2011, p. 481), which we found to be beneficial to us when entering the analysis stage of the research process. We both listened through all of the interviews, but transcribed three each. To ensure that important findings align with what was being said, we listened through the parts of the recordings where they were stated.

4.4 Qualitative analysis

According to Bryman and Bell (2011, p. 571), one of the major difficulties in qualitative research is that it rapidly produces a large, often unstructured, dataset, in which it might be complex to find analytical paths. Therefore, it is important to avoid becoming too captivated by the richness of the data collected (Bryman & Bell, 2011, p. 571). In comparison with quantitative analysis, there are few acknowledged methods for the analysis of qualitative data, but some generic approaches exist (Bryman & Bell, 2011, p. 571). In this study, a thematic analysis has been conducted, to which there are many subcategories, but they all involve identifying themes and apply the collected data to those (Bryman & Bell, 2011, p. 571).

For this thesis, we followed the general analytical procedure involving three steps; data condensation, data display and drawing and verifying conclusions, as explained by Miles et al. (2014, pp. 31-32). First, the data in terms of interview transcriptions was condensed by fragmentizing the text and assigning it with labels, in which we departed from predetermined labels derived from the theoretical framework, and subsequently tuned to achieve a better structure as well as to avoid overlapping. Second, the data was displayed by synthesizing the respondents' answers under different themes, depending on the label as well as whether the respondent was an AI-expert or a marketing

manager. In this way, chapter 5 Empirical findings were created. Third, we compared the opinions of the marketing managers with each other, as well as with those of the AI-experts. Patterns and contrasts arose as the data was compared, in which we arrived at conclusions. These conclusions were verified by scrutinizing the interview transcriptions once again, and further weaved together with the theoretical framework. As a result, chapter 6 Qualitative analysis was created.

4.5 Ethical considerations

Ethical guidelines from ESOMAR (European Society for Opinion and Marketing Research) & GRBN (Global Research Business Network) (2015) has been followed when collecting data for this study. As the guidelines in the report from ESOMAR & GRBN (2015, p. 5) are specifically targeted at research within market, opinion and social science performed online, this study's ethical guidelines have largely been based on these recommendations. This was considered the most appropriate as the Internet has been used for several research processes in this study, including collection of data, in line with the definition of online research by ESOMAR & GRBN (2015, p. 8). In the beginning of every interview, the respondent was informed in a clear and precise manner about the kind of information that would be collected through the interview, the purpose of the interview and that the collected data as well as the identities of the respondents and their firms would be handled with confidentiality upon request. All of the above is in line with the recommendations from ESOMAR & GRBN (2015, s. 9-10). However, we also communicated that it would be appreciated if we could use their titles- and firm names in the study, due to the increased credibility it results in, which most respondents said was not an issue. Chapter 5 *Empirical findings* was further sent to the interview objects that allowed this, where it was again asked if they agreed upon the information being published, or if they preferred to be treated with complete confidentiality instead. However, none of the respondents had any problems with the information being published.

Moreover, the respondents were informed that the interview was completely voluntary, and that the respondent could choose to interrupt the interview at any point if they wished to do so, as well as to skip any question they did not want to answer. It was also explained that they could choose if they wanted to answer questions regarding themselves and their organization in a specific or in a more general way, to not disclose any sensitive information. Moreover, the respondents were informed that the collected data would solely be used and handled by us two investigators and solely for research within the area of marketing, in line with recommendations (ESOMAR & GRBN, 2015, s. 9) As such, the collected data has not been shared with anyone unauthorized. Before each interview, the respondents were asked if it was okay that the interview was recorded, which every respondent agreed upon. To be sure that the respondents understood this and to avoid lack of informed consent, we also presented ourselves, our topic and our ethical guidelines as written above in a written text e-mailed to the respondents before the interview.

4.6 Truth criteria

According to Yin (2009, p. 40), there are four common criteria that should be used to assess the quality of studies in social sciences, in which case studies are included. These criteria are (1) Construct validity, (2) Internal validity, (3) External validity, and (4) Reliability. These different criteria should be considered through different tactics throughout the course of the study. The second criteria, internal validity, is however illogical to consider in exploratory studies (Yin, 2009, p. 40). This because exploratory

studies are not concerned with describing how and why event x led to event y, which instead is the case for explanatory studies (Yin, 2009, p. 40). Consequently, as this study is exploratory, we do not account for internal validity.

4.6.1 Construct validity

According to Yin (2009, p. 40) construct validity is the identification of correct operational measures for the concepts being studied. According to the author, this is especially challenging in case study research (Yin, 2009, p. 41). A common mistake among case studies is that the researchers who perform the study fail to operationalize the measures for the concepts they intend to measure, and that subjective assessments are instead used in data collection. Construct validity can be ensured by: (1) using multiple sources of evidence, (2) establishing a chain of evidence, and (3) by having key informants review a draft of the case study (Yin, 2009, p. 41).

Yin stresses that results and conclusions are likely to be more accurate if they are based upon different types of information sources, and that this is especially important in case studies (Yin, 2009, p. 115-116). Accordingly, to ensure the quality of this study and its results, multiple sources of evidence have been used, so called triangulation (Yin, 2009, p. 114). These sources are both previous empirical research in the respective fields, as well as collection of new qualitative empirical data through interviews from both marketing managers as well as AI-experts, to attain a nuanced perspective of the research problem. This was also done to exclude potential emotional bias from the marketing managers, as the research problem regards their own future. The second criteria, establishing a chain of evidence, means that an external observer must be able to derive the evidence presented from the initial research question to the conclusions drawn in the study. This principle has been followed according to methods recommended by Yin (2009, pp. 122-124). To begin with, accurate references from original sources, where page numbers have been included, have been used to the greatest extent. The research in which the theoretical framework is based upon is also well referenced in other studies. and confirmed in each area, and to a large extent published in prestigious academic journals (see section 2.9). Moreover, a careful description of the collection of empirical data has been written, as can be seen in sections 4.1-4.5. The third criteria, having key informants review a draft of the case study, has been met, as the *Empirical findings* chapter was sent to each interview object to be read through and accepted before publishing the study. The pilot study can also be considered to support this criterion, where Jakob Sjölander gave his opinions about the interview guide (see section 4.2.1).

4.6.2 External validity

External validity deals with the problem of knowing whether a study's findings are generalizable beyond the immediate case study (Yin, 2009, p. 43). Due to the nature of case studies, external validity has been a major source of criticism for case study research (Yin, 2009, p. 43). However, Yin (2009, p. 43) describes that such criticism is incorrect when dealing with case studies, as case studies rely on analytic generalization as opposed to statistical generalization. The authors further describe that, in analytical generalization, the investigator strives to generalize a certain set of results to some broader theory. In this case, this would be the transforming role of marketing managers. Furthermore, Yin (2009, p. 44) describes that generalization of a theory is greatly improved if replicating the findings in several cases. The author exemplifies this with the replication logic use of experiments, which allows scientists to cumulate knowledge across several experiments. Using this logic, the more similar results over time, the

higher generalizability. Thus, multiple cases have been investigated in this study, to increase the generalizability of the results of the role of marketing managers in similar conditions as the investigated cases. However, as this is a qualitative study with a constructionist view of reality, the purpose is not to generalize the findings, but rather to attain a deeper understanding of how marketing managers are affected by increased levels of AI-capacity, and bring valid insights in which direction the role of marketing managers is progressing. However, a multiple-case study still gave stronger and more robust evidence regarding the issue, than a single-case study would have given, particularly as similar data were attained from many different cases – in line with the replication logic.

4.6.3 Reliability

The objective of reliability is to ensure that another researcher should be able to carry out the same study again by following the same procedures as described by the previous researchers, and then arrive at the same findings and conclusions (Yin, 2009, p. 45). Accordingly, the purpose of reliability is to minimize errors and bias in a study (Yin, 2009, p. 45). One method for overcoming this is to create a database for the case study where all collected data and evidence used for the study is organized and documented, as well as the paper itself (Yin, 2009, p. 118-119). By using this database, it should be possible to conduct a separate second analysis, independent from the first study, and arrive at the same results (Yin, 2009, p. 119). Accordingly, all the collected data have been saved through the usage of cloud storage on Google Drive. Articles have been further stored and managed through the usage of the Mendeley software. As described in section 2.8, references have also been used extensively and carefully throughout the essay, including page numbers for easier access to the referenced material. Copies of the e-mail communication with respondents as well as with Infobaleen have also been saved. All this is in accordance with the recommendations of Yin (2009, pp. 120-122) for a study to achieve high reliability. However, no notes have been taken and saved over the research process nor has any protocol on the case study been conducted, which according to Yin (2009, p. 120; 2009, p. 45) are important components of a database in order to achieve high reliability.

However, due to the nature of qualitative studies and the constructionist view of reality, the findings depend very much on the people and the context of the study (Bryman & Bell, 2011, p. 38). Therefore, according to LeCompte and Goetz (1982, p. 33), reliability is difficult to fulfill for qualitative research. The authors further argue that perfect replicability of a qualitative study is nearly impossible, as it is based in a specific setting. As such, the event cannot be reproduced and nor can the human behavior due to its dynamics (LeCompte & Goetz, 1982, pp. 34-35). Accordingly, a perfect replicability of this study would not be possible, but several actions have been taken to increase the study's reliability. Another important aspect that affects the reliability of this study is the rapid development of various AI-technologies that is taking place as of today (see chapter 1). This causes difficulties in replicating a study of this nature, since both the AI-technology as well as marketing managers relationship to AI-technology is likely to have changed at the time of an eventual replication. Thus, the reliability of the results from this study is further limited, the more time that passes from the data collection, which took place during May 2019.

5. Empirical findings

The empirical findings of this study are described throughout this chapter, which has been gathered through interviews with three marketing managers, presented in section 5.1, and three AI-experts, presented in section 5.2. Each section begins with a brief description of the different cases, as explained by the respondents, which is then followed by questions in relation to the areas described in the theoretical framework.

5.1 Interview overview

Below is a summarizing table of the conducted interviews; including the names of some respondents who agreed upon their names not being confidential, the firm in which they are employed, their position in the firm as well as an indicator of the size of the firm.

Name	Position	Firm	Size
-	CRM Manager	Rusta	Large
-	CMO/Co-founder	Refunder	SME
-	Marketing Manager	Multinational corporation within FMCG	Large
Jacob Sjölander	CEO/Co-founder	Infobaleen	SME
Martin Rosvall	Co-founder	Infobaleen	SME
Robert Kviby	Founder	The Growth	SME

5.2 Marketing managers

5.2.1 Description of case firms

Through this section, the responding marketing managers view of the firms of which they are employed by are explained. This to understand the context of the investigated cases.

Rusta

Rusta is a retail firm niched towards broad low-price commerce with a turnover of seven billion SEK and about 25 million customers yearly, operating solely through brick and mortar stores in Sweden, Norway, Finland and Germany. Rusta has several different categories of commerce, including, amongst others; home decoration, consumables as well as season based sales, such as Christmas decoration for the winter and outdoor furniture for the summer - which accumulates to around 8 000 articles. Rusta has been using AI-technology actively for six months in their marketing efforts, insofar mostly for personalized marketing in terms of products recommendations and customer insight.

Refunder

Refunder is a Swedish so called cashback website which started in 2014. Cashback websites are member sites which are connected to several e-commerce firms, from which the cashback site receives provision when their members purchase through their website. The cashback website then pays their members a percentage of the provision they have earned through these purchases. Accordingly, the consumers receive money from their purchases and the cashback site keeps some of their provision - which in the case of Refunder is the only source of revenue as of today. This is a volume based business model with small margins, which demands great order volumes to be

profitable. Refunder currently has about 500 000 members in Sweden, a number which is steadily increasing.

The CMO and co-founder of Refunder describes that the two most important key performance indicators are the Member Acquisition Cost and the Customer Acquisition Cost, as the affair is not profitable if it costs too much to acquire a member, nor if this member does not make ongoing purchases via Refunder. Moreover, Refunder has several channels for their members in order to receive their cashback; their website, their smartphone application or via a plug-in function for the browser. Furthermore, Refunder does not gain any provision if the product is returned for any reason, which implies that joining Refunder as an e-commerce firm is risk free - there is no cost for them until a purchase has been made. Moreover, Refunder is constantly running different campaigns in collaboration with different e-commerce firms which generates higher amount of provision. Refunder generates sales for about 1 000 e-commerce firms in Sweden for around 1.2 billion SEK annually, and has historically generated significantly higher average order values as well as lower return degrees of the purchases compared to other channels. Refunder has so far mostly utilized AI for personalization of their marketing efforts.

Multinational corporation within FMCG, operating in Central America

The third case with a marketing manager as interview object is a multinational corporation within Fast-Moving Consumer Goods (FMCG) which has operations in Central America, where the respondent work. However, for reasons of confidentiality, it is not disclaimed which corporation this is. The respondent explains that his corporation has so far used machine learning for automation of operative areas but also for information processing, decision-making regarding budgeting and innovation, sales and for consumer insight

5.2.2 The value of the marketing manager role

The responding marketing managers were asked what they are intended to contribute with to their respective firm. This is mainly to draw conclusions, grounded in the answers of the experts as well as the theoretical framework, regarding the possibility of AI to automate decisions assigned to marketing managers.

Rusta

The interview object for the case of Rusta was originally employed as CRM Manager, but describes that this role has evolved into a position as Head of Customer Experience and Customer Insight, which is directly subordinate to the firms CMO. The respondent describes that his responsibility is to enrich the organization and the affair with a possibility to streamline advertisement as well as product development primarily through customer insight.

Refunder

The interview object for the case of Refunder is employed as CMO for the firm, as well as being one of its co-founders. He describes that the main responsibilities for his role is to build the brand and create attention to acquire customers, as well as to establish loyalty for Refunder versus other channels in order to drive repeat purchase. In order to fulfill these responsibilities, the respondent describes that he has worked with marketing through TV advertisements, Google AdWords, social media as well as influencers. A core responsibility has been to find the combination of media channels that lift each other so that “1+1=3”.

The multinational FMCG concern

The interview object for the case of the multinational FMCG corporation works as a Brand Manager with the core responsibility of building and developing brands for six different countries in Central America. The brand development includes being responsible for the construction and the innovation process of a brand, while the brand building involves more tactical decisions to customize the brand for a specific market. The respondent further describes that problem solving as well as "thinking outside the box" are central elements of his role, and that his performance is measured by sales as well as brand engagement. He also explains that he works with consumer insight, which he believes to be valuable when aiming to attach the consumer to their brands.

5.2.3 Artificial intelligence and its impact on marketing

To begin with, this theme incorporates answers related to those stated by the marketing managers, when they were asked about their view of AI, and how it has impacted their marketing efforts. All marketing managers were of the opinion that AI is a great opportunity for marketing as well as for their roles as marketing managers. Only one respondent mentioned that he saw AI partly as a threat, as it might be damaging if competitors exploit these relatively new technologies faster and better than themselves.

Moreover, all three respondents were of the opinion that AI, more specifically machine learning, provides completely new dimensions and opportunities for analyzing large amounts of data. All three respondents further stressed that the analysis that machine learning algorithms do, would otherwise require several data scientists, while the results would probably not be as good. At Rusta for instance, the machine learning algorithms map about 400 million of transactions and data from two million individuals, which the respondent believes would require about five-six data scientists. The marketing manager at Rusta further describes that machine and deep learning means that they can work data driven for real. He explains that it enables them to look at their loyalty-club members' propensity to purchase different products, i.e. the likelihood of buying some product in a certain amount of time, as well as the affinity for all their product categories. Through this, they have been able to find finding connections that does not seem logical at all. However, recommending products based on these connections, it has led to an incredible effect in increased sales as they become more relevant, as well as can achieve a better timing, which together can boost parts of their assortment. Before implementing machine learning, they were using classic segmentation methods such as RFM (Recency, Frequency and Monetary) analysis, together with sociodemographic data. Insofar Rusta has only used machine learning in their marketing efforts, but they look at the possibility of implementing it in their purchasing organization for forecasting demand and optimize their logistics.

For Refunder, machine learning has enabled personalization of their marketing efforts towards their members, as the algorithms learns over time what each member is interested in as well as what each member could be interested in ahead. This has led to an increase in the open-rates of their email communication from about 20% to 30-50%. Moreover, it has enabled Refunder to push personalized campaigns specifically targeted towards certain segments, instead of having mass-campaigns, which are the same for everybody. This means that Refunder now runs about 60 personalized campaigns a week instead of 10 mass-campaigns, as they did before implementing machine learning, which has resulted in a significant growth of sales through their site. Eventually, according to the respondent, AI will further enable Refunder to have a personalized frontpage on their website. The CMO of Refunder further explains that AI enables

marketing managers to handle a lot more processes simultaneously compared to what is possible with human efforts, and that Refunder could never have achieved its turnover as of today with its current number of employees, without using machine learning. Eventually, Refunder hopes to be able to let the machine learning algorithms support their decision-making process regarding what campaigns to launch with which e-commerce firms. Based on parameters such as the provision to Refunder, return degrees of products and the average order value of the products, the machine learning algorithms could provide information regarding which selection of campaigns that would be the most profitable. The respondent explains that these decisions are still to a great extent based on gut-feeling.

The marketing manager at the FMCG-corporation explains that his firm works a lot with machine learning globally, but less so in Central America as of economical reasons and poor technological infrastructure. He describes that in general, they use the technology that was available to the offices in Europe five years earlier. Nonetheless, they do apply certain techniques within machine learning in Central America as well. The respondent explains that machine learning has led to a lot of automation, especially for the more operative areas but also for information processing, decision-making regarding budgeting and innovation, sales and consumer insight. Moreover, as mentioned, the respondent believes that machine learning will be positive as well as negative for marketing managers. As consumers gets increasingly digital and can choose which messages they want to display, it will be more difficult for firms to get to the consumer with the right message, in the right time. As such, it will be more difficult to attach a consumer to a brand, as well as to differentiate a brand. As a consequence, he believes that the marketing manager has to focus on the long-term development of a brand in order to get consumers attached to it, which makes consumer insight even more important.

The marketing manager of Refunder believes marketing managers should now focus more on brand campaign building based on the information provided by the machine learning algorithms, such as which products and categories that needs to be boosted, or the products that already have a good momentum but the firm wants to scale up further. Moreover, the respondent explains that as machine learning helps you with providing information for how the marketing communication should be governed, the role of the marketing manager will shift into drawing conclusions based on this information in order to create good campaigns, as AI cannot yet master the creative process. As such, the marketing manager of tomorrow must be able to act more on data and less on gut-feeling, which implies that you need marketing managers that are more technical, in addition to being creative.

5.2.4 Intuition in decision-making

When the marketing managers were asked about the importance of intuitive capabilities in their role, the marketing manager of the FMCG-corporation explains that he uses intuition in the approval process of art work, digital material and videos, i.e. creative brand communication. He further explains that the innovation process used to be highly intuitive a few years ago, but as of today, is more fact based due to various machine learning technologies. The marketing manager of Rusta, on the other hand, describes that he mostly uses his intuition for driving hypotheses regarding marketing activities. He explains that every hypothesis comes from an intuitive feeling, based on experience, that it should be the right decision to take. Moreover, he explains that he believes AI

will be able to master intuition in the future as well, but that a human always needs to be in charge for running a corporation like Rusta.

The respondent from Refunder believes that intuition is highly valuable for marketing managers, due to the necessity of continuously thinking "outside the box" and reflect upon what the firm should be doing, which might not necessarily be what the firm is doing at the present. He believes that we can trust AI regarding data and information for decision-making and as such adjust and optimize the current processes, but not for making major strategic shifts. He exemplifies by stating that AI can boost your firm by 5 percentage by improving what you do in the present, whereas a major strategic shift could lead to a boost of 40 percentage, although it also constitutes a risk. For those strategic shifts, the respondent is of the opinion that human intuition based on experience is necessary, as well as a strong leader that can decide not to act on data, but instead on intuition. The respondent believes that if the marketing manager gets too data driven, they might become too risk-averse. The respondent is of the belief that this is negative, in which explains that an important aspect in the role as a marketing manager is to "blow boundaries and do things that no one else has done before".

5.2.5 Change in relationship between firm and consumer as of AI

When the respondents were asked questions about how the relationship between firm and consumer is affected by AI, the marketing managers of Rusta and Refunder both believe the increased usage of AI and machine learning in marketing to be positive for both consumers and firms, as long as firms use AI in an ethical manner, to create value for both parties. They both belief consumers will receive much more relevant and personalized information. The marketing manager of Rusta believes that this will hopefully strengthen the relationship between the firm and the consumer, as relevance is very important regardless of communication channel.

The marketing manager of Rusta further believes AI-assistants will be an important channel in the future, and accordingly should be an important focus for marketing managers, regardless if they sell online or through brick and mortar. Accordingly, even though Rusta does not sell through e-commerce as of today, he believes they can utilize AI-assistants for other purposes than direct online sells. This involves assisting the consumer in finding the right product in their assortment, advices regarding the usage of their products as well as enriching the customer experience in other ways. He further explains that it can also help to attract customers to their stores. The marketing manager of Refunder is concerned with which parameters AI-assistants will use when deciding upon which products to present to the customer, as well as from where to buy the product. In this way, the role of marketing managers will still be to build brands that people prefer over others. As a retailer selling other brands though, it will become more difficult as the AI-assistant searches for the best price, and can therefore go directly to the brands themselves. The marketing manager of the FMCG-corporation believes that AI-assistants will greatly increase the competition amongst firms and make it increasingly difficult for marketers to attract consumers, as the assistant will base its decisions solely on facts and not emotions - which decreases the number of tools marketing can use to build brand loyalty with regards to emotional dimensions. Moreover, he is of the belief that brands will be equally important as they are today for the consumer, but less so for the AI-assistant due to their rational decision-making. As consumers will trust their AI-assistants and make many purchases through them, he believes that brands as such will be of less importance in general, at least in the FMCG-industry.

5.2.6 Change in required skill-set of marketing managers

The respondents were further asked how they make use of various capabilities that are believed to be restricted to humans for a foreseeable future, as well as how the required skill-sets of their role is altering. All of the interviewed marketing managers are of the belief that different capabilities related to emotional intelligence, such as empathy, social understanding and persuasion, is, and will become even more important to their current role as a marketing manager. The respondent from Refunder believes that viewing things from the consumers' perspective always is a central objective for marketing. This to understand what creates friction and irritation in their everyday life, how they reason as well as which product factors they are triggered by. For this purpose, he describes that it is necessary to use data and empathy.

The marketing managers of Rusta and the FMCG-corporation also emphasize the need for marketing managers to be empathic. This for their relationship with colleagues and other firms, as well as to motivate people and drive the business forward. Moreover, they also emphasize the necessity of understanding their customers, as the emotional aspect constitutes a major part of consumers' purchasing decision. The respondent from the FMCG-corporation also stresses the importance of understanding the customer through emotional intelligence in order to find the right insights for the innovation process, which he believes cannot be fully replaced by data and computers. The respondent from Refunder further believes that marketing managers will always have to follow the process of interpreting a problem, beginning to grasp it, collecting data and subsequently employing the machine learning algorithms to structure this data and find patterns, to be used to find solutions. The solutions can further be communicated in an empathic and pleasurable way. As such, the respondent describes the importance for marketing managers to be able to act upon data, which he thinks is a problem for many marketing managers as of today, since they collect a lot of data but do not create routines and processes for how to take action upon it.

Moreover, the marketing managers of Rusta and the FMCG-concern also describe that creativity is a fundamental aspect of their roles. The marketing manager of Rusta stresses the need for creativity not only when deciding upon product characteristics to appeal to the consumers, but also that creativity is always present when driving strategies forward. The respondent from the FMCG-concern expresses that creativity is much used in the development of a brand as well as in the innovation process, where he as a marketing manager must figure out how to make a brand last and evolve alongside the consumers. He believes that creativity is highly needed to make a strategic shift in marketing. This is an opinion shared by the marketing manager of Refunder, who believes that too much use and trust in data can kill creativity, which is important for building brands. As such, using the right amount of creativity and data is an act of balance for marketing managers, and will be even more so ahead. However, he also describes that an advantage with machine learning is that one can test scenarios on a smaller scale to see if it works or not. Therefore, marketing managers must have sufficient technical skills to understand and interpret the outcome of the co.

Furthermore, all three interviewed marketing managers believe that their role will become increasingly technical, and accordingly they all believe that being well immersed in using technology will be even more important ahead. As the marketing manager of Rusta expresses, technology is now a crucial part of the customer experience in every dimension - whether this is through the website, the loyalty program, the checkout system - there is always a technical dimension to it.

5.2.7 Problems with AI usage in marketing

The respondents were further asked questions considering potential barriers to the implementation of AI-technologies. Regarding the problem with the explainability of some models within the domain of AI, so-called black boxes as described in section 3.1.5, none of the respondents expressed that it was a major problem to them. They were also of the belief that marketing managers must let go of some control, to be successful when using machine learning.

The marketing manager of Rusta describes that they have several examples of when it has not been entirely obvious how the machine learning algorithms has reached a certain conclusion, but that it is nonetheless important to try and see if it works. However, he is also of the belief that one should never trust such a conclusion blindly without testing and validating that the conclusion is in fact correct. The respondent further describes that the same would not be applicable for decisions of more strategic nature, decisions which cannot be tested before they are implemented on a full scale. In this way, he thinks that AI-technologies can be a good complement to human decision-making, but should not be responsible for a major part of the decision. The respondent further states that explaining and motivating a major decision is something fundamental to humans, thus it is difficult to completely trust an AI-technology blindly. Moreover, he describes that as there is no data describing events that has not happened yet, the machine learning algorithms cannot incorporate products that has not been offered yet, as well as other future happenings in the world. As such, he views machine learning more as a complement in decision-making processes of strategic nature. The respondent of the FMCG-corporation expresses that he as of today do not know, how more than half of the information he uses is produced. Though, he has learned to trust the machine learning algorithms. He further expresses as machine learning techniques develops, he is not concerned with black boxes as a major problem.

Regarding ethical issues in collection and usage of customer data, the marketing manager of Rusta expresses that it is always difficult to know how far one can go without trespassing on personal integrity. Consequently, he describes that ethics is always present when working with marketing analysis, and increasingly so as the possibilities in analyzing customer data expands. Moreover, there is also the legal aspect of it - as a European firm they need to follow the legislation of GDPR to the very least. However, he also believes that it can be beneficial to firms to not maximize the usage of customer data, and instead aim to stay under the legal limit, and to only collect and use the data they really need. Moreover, the respondent is of the belief that being transparent and explaining what and what not the firm use the data for is solely advantageous to firms. The marketing manager of the FMCG-corporation, however, believes being transparent with the collection and usage of customer data can also be disadvantageous, since the impact of advertisement is greater when the consumer is unaware of it being personalized.

5.2.8 The future of marketing with regards to AI

Regarding the future of marketing and the role of marketing managers, the respondents believe that the development will continue in the same direction. The marketing manager of Rusta expresses that AI will increasingly enable marketing to work more data- and insight driven, and that the media landscape will continue to change with less use of conventional marketing channels, in favor of new channels and AI-assistant functions. Moreover, he is of the belief that many roles as of today will change or disappear - as can already be seen with operational but also analytical roles being

replaced AI. However, the respondent does not believe the role of marketing managers will disappear, as the role of marketing managers is multifaceted.

The marketing manager of the FMCG-corporation also believes there will be less people in the marketing departments as of AI, but also express that new careers will appear - as when social media grew as a marketing channel - as well as more specialist marketers with technological skills. He is also of the belief that it will become more difficult to run big corporations due to the technological development, as it will be easier to operate with economical efficiency on a smaller scale. This suits well with the ongoing consumer trend of preferring niched brands and local products over multinational corporations. Accordingly, the respondent is of the belief that large corporations will need to change in order to stay relevant, and that the technology will further increase competition. Moreover, the respondent is of the belief that brands must focus on specific segments, and not target everyone which often has been the case historically. The marketing manager of Refunder, however, believes that brand building will be even more important in the future, especially considering AI assistants as it will further increase the need for brands to stay 'top of mind' among consumers, as the purchasing decisions are done through voice. Furthermore, he is of the belief that building a strong brand is one of the core responsibilities of marketing managers, since a strong brand has numerous of positive implications for a firm. He further describes that this is something that will continue to be a job for the marketing manager, as AI will not be able to do this.

5.3 AI-experts

5.3.1 Description of case firms

Infobaleen

Infobaleen is a Swedish B2B start-up that develops predictive models based on their clients 'customer transaction data. This to make decisions regarding what products should be marketed to which people, thus to optimize results. Two co-founders of Infobaleen, Martin Rosvall and Jakob Sjölander, were interviewed for this thesis. Rosvall is a professor in physics at Umeå University, with a recent academical focus on analyzing big networks to understand connections and discover patterns in data. The models that he and his team developed received great publicity in academics, and subsequently they seeked areas of application to solve practical problems. The novelty of these models is that they combine mathematics, algorithms and visualizations to go from raw data to understanding. As a result, they caught the attention of Sjölander, who now is the CEO of Infobaleen. He has a background as manager for various media and internet-based firms for the past 15 years, in which his business knowledge helped to transform the predictive models into value propositions.

The growth

Robert Kviby, founder of The Growth, has a background as a programmer and more recently as an employee in media firms. In the beginning, his technical knowledge was to no help, but more so as the industry became more subscription based and data driven. After gaining more knowledge in the field of AI and successfully implementing ML in the marketing endeavors of the firms he worked in, he founded The Growth. Through The Growth, Kviby consults subscription-based firms to develop and implement machine learning and deep learning models as means to acquire customers. In this way, products are marketed automatically based on relationships in the customer transaction data. He became an interviewee through Infobaleen as he got to know Sjölander from

the media industry, in which The Growth and Infobaleen later has worked commonly in projects.

5.3.2 Definition of AI

The AI-experts were asked what AI mean to them, in which Rosvall responded it can mean many things. In his research, it is centered around the understanding of various systems, but in a more practical sense he explains that it is about prediction. He further describes that machine learning has received significant attention in the AI-community in later years, and that prediction within marketing has a great potential, that is not being leveraged enough. Moreover, the view of AI being an umbrella term is shared with Kviby and Sjölander, but that it is also synonymous to machine learning and deep learning models in their respective domains.

Kviby views AI as an opportunity to consistently manage firms, grounded in the same datasets, in which the value chain can be tied together. He uses an example of a video streaming service he previously worked with, that through machine learning can forecast the number of subscriptions and thus revenue streams, perform personalized recommendations and other targeted marketing efforts, as well as to give insights in what content should be brought in given that people are interested in x and z. A "data lake" in the center of the firm that help to automate all areas of the value chain.

5.3.3 Decision-making in marketing

The AI-experts were further questioned how AI can automate and augment marketing decisions. Rosvall is of the opinion that the comprehension capabilities of humans are limited, but instead we can build systems to achieve greater comprehension. Every individual component of such a system does not need to be cleverer than a human, but they can work much faster, nonstop. Furthermore, Sjölander believes that machines can substitute some relatively uncomplicated decisions, in the sense that they are easily formulated and computed. An example would be for product recommendations, to find complex connections when there is an opportunity to perform calculations based on available data. In contrast, Sjölander find it to be unlikely that an algorithm can find relationships between data from different sources that it does not have access to. He draws upon an example with a book about "chia seeds" that becomes popular, and as a manager of a grocery store, you can then speculate that there will be a great demand for this seed, thus you should offer it in the store. An algorithm on the other hand, would not be able to make that prediction, since it cannot internalize and compute reality as a whole. In this way, making strategic shifts entering new territory, decisions that cannot be grounded in historical data, are better assigned to humans, whereas algorithms only can optimize based upon what has been previously successful.

For a human to make a decision as the one explained above, intuition is required, in which Sjölander believes machines can support in interpreting data, but that a human is still needed to make the final call based on his gut feeling. This is in line with the opinion of Kviby, who believes a machine is the best possible colleague one can have, which one can ask "what do you think?", and then assess if it is something to move forward with.

5.3.4 Development of AI

When the respondents were asked about the possibilities of AI to replicate human intuition, they all agreed upon that the technology as of today is not able to make intuitive decisions in parity with humans, but they were further asked to give their opinion regarding AI's future prospect within this domain. Rosvall views intuitive

judgements to be a process in which the mechanisms cannot be explained, but there is something there.

Accordingly, he believes that AI will be able to make some kinds of intuitive judgements further on. Furthermore, Kviby is of the opinion that AI is closing in to humans' intuitive capabilities, since the input humans' base their decisions on can be translated into data points. According to him, intuition is some sort of perception, thus just a matter of great amounts of unstructured data. Sjölander believes that AI might in the future be able to make intuitive decisions on the same level as humans, but if so, it will take more time than people currently think.

Furthermore, they were questioned regarding the possibility of future AI to master capabilities such as creativity, social understanding, empathy and persuasion. To begin with, Kviby is of the opinion that creativity is somewhat close, in which he envisions parts of the creative process to be automated. Before machine learning can create the concept itself, one can assign instructions as style, tonality and the elements to work with. Then, one can use reinforcement learning based on number of clicks, in which the algorithm learns what is considered as "good" and "bad" content, thus improves the creative content. Moreover, Kviby states that regarding negotiation, AI is already approaching. He draws upon an example of that it is already some kind of AI that negotiates when one looks for hotels on the internet, hence this skill is no longer needed in some domains. Furthermore, Rosvall believes it is difficult to replicate these capabilities related to emotional intelligence, thus he is of the opinion that algorithms will not replace us, but rather strengthen our capabilities. However, Rosvall do believe that AI will be able to understand social rules that are completely natural, in other words possess some amount of emotional intelligence, but that this will take time.

5.3.5 Change in relationship between firm and consumer as of AI

The responding experts were asked to give their view on how AI will affect the relationship between firms and consumers. They all believe firms must create value in some sense, to stay relevant to the consumer. Sjölander envisions the relationship will become better as a result of firms being more relevant, thus consumers will be more loyal. Further, he believes firms that are transparent about what they do with the data and in what way the consumer profits from it, will be able to build a stronger relationship with the consumers, than the firms that do not. This will affect marketing managers in the way that they will need to establish good policies, where the consumer will profit from their data they share, and to subsequently communicate it in a clear and coherent manner. Rosvall is of the opinion that the risk with new tools in general is over usage as well as misusage, which will be negative and cause the consumer to block irrelevant advertisement. The focus for marketing management will be to create value for the consumer by providing accurate recommendations in which the consumer discovers new interesting things, which over time will build trust.

Kviby stresses the importance of an opportunity for advertisement to become more relevant to the consumer, and if the relationship between consumer and firms develops for the better, perhaps there will not be the same need for advertisement, as advertisement can be considered to be a tax on the product in order to sell it. If a firm has a good product, it might not need to spend money on advertisement all the time. Besides stressing the opportunity for advertisement to become more relevant, Kviby also believes that consumers will want to know whether they interact with a human or a machine, as with the case of customer service. Otherwise it might be unpleasant to them. But in a general sense, one as a customer only wants the problem to be solved,

and if firms with the help of AI can solve the problem before it even arises, firms can strengthen their relationship with their customers.

After the experts elaborated on the future relationship between firms and consumers in a general sense, we asked them about the specific impact of AI-assistants. All three share the view of a market power concentration to the AI platforms. Both Kviby and Rosvall state that marketing management will need to relate to the AI assistants in the same way as when search engine optimization became big - a necessity to understand how to optimize and be relevant to the platform, in which Kviby estimates it will become an industry of its own. As in the case of search engine optimization, Kviby believes the first firms that understand this will gain a huge advantage, but eventually it will become more of a hygiene factor than a competitive advantage, since firms will optimize their offers in the same way. Then it will once again boil down to the brand being the most important decision criteria for consumers. Furthermore, Kviby believes it will increase the polarization among brands, since the brands that are not listed on these platforms will not be able to acquire information about their consumers and how they consume the products, in the same way as the ones listed. The AI-assistants will function as a filter, making fewer brands available for selection. Thus, the ones that have a good brand will be able to have a dialog and build a tight relation with the consumers through this platform, whereas the weaker brands will be reduced to a commodity product, and instead substituted with product lines such as "Amazon basic". Further, the brands which in an empathic way can understand what problem they solve for the consumer, and which are able to catch the consumer in the right context and in the right mood, but without being intrusive, will have an advantage.

5.3.6 Problems with AI usage in marketing

The responding experts were asked what ethical issues they see with the advances in AI implementation. They all mentioned the collection and usage of data as being the main concern, and not the various AI-tools applied to marketing themselves. Rosvall states that the technology always opens new opportunities, making it possible to test new things that crosses the ethical line. When people become aware of the practices the firms use, it hits them back, thus the firms need to find a balance. Regarding how legislation will advance, all agree upon the fact that it will become stricter, as has been the case with GDPR. Rosvall further states that it depends on how the big firms will behave, but that it certainly will become stricter - the question is at what pace. Sjölander is of the belief that people will become more restrictive in terms of sharing their data, which will pressure firms to develop models that can deliver good results with less data. Kviby mentions how Apple differs in the way they collect and use data, in comparison with Google and Facebook. They do not profit on the data as the two others, and can therefore claim that "we do not collect data on you in that kind of way".

Further, the respondents were asked about the potential problems with so called black box algorithms when used in marketing. Sjölander is of the opinion that it is a problem if you strictly trust the algorithms without knowing how they work, in which it is important to at least measure the results to know how they develop. He further states that when it regards decisions of great importance, the algorithm can provide decision support, but as previously stated, the final call is made by a human. This is in line with the view of Rosvall who believes that in some cases, maximum prediction generates such a great value that minor errors are not so dangerous, but that in other cases it might not be worth it. As in the case with marketing managers that adhere to a strategy, they

want to know why this strategy is the most appropriate. Otherwise, it can be the case that the strategy is successful in the short-term, but useless in the long-term.

Sjölander further states that in their business environment, most firms do not demand explainability of algorithms, they only want to see results. This he believes to be due to the industry being relatively immature, but as time passes, there will be a greater demand on understanding what it is that happens, to ensure the machine learning algorithms align with their objectives. As a result, this will cause a pressure to develop methods for better explanations of the outcomes of the algorithms. Rosvall mentions that there is active research in the field of understanding neural networks, called explainable AI. Rosvall further tells us that Infobaleen take their simple causal models and make them more flexible and adaptive, so that big difficult systems can be explained. Also, it is possible to analyze deep neural networks to understand how they are constructed, and that the goal of Infobaleen is to explain all outcomes of their algorithms. In contrast, Kviby is of the opinion that there are few people who can explain how a deep neural network functions, which one must accept.

In relation to black box algorithms, Kviby mentions the problems with implementing AI in firms where there can exist great resistance to implement a technology that other employees do not fully understand. He believes this uncertainty stems from a resistance to change, and exemplifies with a case in which they did a blind test, where content created by a human was compared with that created by a machine learning algorithm. It turned out to be impossible for people to know who created what, but that the algorithm was not necessarily better, because they both followed nearly the same logic. This solution was never implemented though, since it caused significant consequences in the firm. The management estimated people would lose their jobs, which would cause other employees to worry about their employments as well. He further states that he has been involved in at least 2-3 cases where the reasoning has been the same.

5.3.7 Change in required skill-set of marketing managers

When questioned about what skills of the marketing managers that will be important as AI advances, they all shared the view of emotional intelligence being highly valuable. According to Rosvall, a good salesman has a high social understanding, a capability the AI assistants do not currently possess. Further ahead in time, the implicit mechanisms of emotional intelligence will have to be concretized and implemented in AI by engineers, in which the marketing manager with a high emotional intelligence can communicate to them what works, and what does not work. Though, he also emphasizes that it will take a long time before AI will have a social understanding.

Kviby is of the opinion that empathy will be of highest importance for marketing managers, as building a brand involves understanding what people are interested in and what they need help with. Moreover, Kviby believes the increased implementation of AI will turn the contributed value of marketers more transparent and concrete. Furthermore, Sjölander believes the required skills of marketing managers will be what machines are not good at, as emotional intelligence, but also imagination. The ones with machine-like capabilities will have it more difficult, in which he exemplifies with stock brokers who were good with numbers and well paid, but do not really exist anymore as machine learning algorithms now can do this work much better and cheaper.

Lastly, Rosvall states that there will be a need for marketing managers to understand the various AI-applications, as well as to understand the AI assistants, since these will have to be internalized in their marketing strategies. In the same way that armies use AI to

simulate war, one can imagine that marketing strategies can be simulated as well. Thus, technical skills are required.

5.3.8 Implications for competition

The experts were asked how firms will be able to compete with the tech giants that train their algorithms with massive amounts of data. The aim of this question was to gain a deeper understanding of how marketing managers should relate to these firms. Sjölander is of the opinion that if you are a product firm, you will have to create good products as "no algorithm can substitute a good product", but if one has a lot of data, one can better understand the demand and as such make better products. Many mono brands experience significant growth, in which these tech giants can be used as distribution channels. In contrast, e-commerce firms with a wide selection of other brands will have it more difficult. He further states that if you are a tech firm, the giants are both an opportunity as well as a threat. The giants make their technology available, in which others can ground their solutions in this technology and build something on top. In this way, tech firms can find their niche.

The above aligns with the view of Rosvall, who believes the giants with their "one fits all" solutions cannot provide customized solutions to solve a specific problem very well, which opens opportunities for specialized firms, as in the case of Infobaleen. Kviby states that one cannot compete with an algorithm that is trained with huge datasets, but that it is not a major problem since the best algorithm is usually only slightly better than the second best. Furthermore, he believes synthetic datasets can be of help to firms that do not own sufficient amounts of data to train their algorithms.

5.3.9 The future of marketing with regards to AI

Lastly, we wanted to find out how AI in marketing will change society. Furthermore, whether marketing will be kept in inhouse or if there will be a trend of outsourcing marketing functions. We summed these questions under the common theme of "future". As previously touched upon, Sjölander believes firms will be better in predicting what consumers are interested in, which will result in more relevance. Thus, there will be less overproduction, less overstocking and less waste. This aligns with the view of Rosvall, who is of the opinion that AI will help consumers to do better purchases, maximizing the value of what you buy. This will result in less frequent purchases, but the purchases will be more valuable to the consumer, thus hopefully moving away from mass consumption.

Moreover, Sjölander believes the marketing function of firms will stay inhouse, but that firms will buy the new tools available. Big firms with sufficient resources might focus on developing own customized solutions on top of the solutions from the tech giants, whereas smaller firms might hire a firm to do it for you. None or at least few firms will build their own solutions, where a few giants will drive the development of technology. Rosvall is of the opinion that the AI-solutions become more advanced with time, and as a result it will be something you want to buy instead of developing yourself. A firm must be relatively big to have its own team of data scientists. The focus of firms will be centered around their core capabilities and to develop good products, and not with the sales of those products. As in the case of Infobaleen, their clients' data is not worth anything if it is not combined with their algorithms. Furthermore, Kviby is of the opinion that firms might not outsource all marketing to agencies, but that more people will become specialized consultants that will constitute a greater part of the marketing function of firms than today. This because it is difficult to acquire the appropriate skill-set if everyone is employed full-time.

6. Analysis and discussion

Through this chapter, the empirical findings presented in chapter 5 are weaved together with previous research, described in chapter 3, in order to answer our research question – how marketing managers in B2C-firms affected by increasing levels of AI-capacity. For analyzing the collected empiricism, we have followed a thematic analysis approach and consequently derived six different themes: The value of the marketing manager role; AI and its use in marketing; AI and decision-making; Change in required skill-set of marketing managers; Problems with AI usage in marketing; as well as The future of AI in marketing.

6.1 The value of the marketing manager role

The purpose of this theme is to bring insight into what core values the marketing manager role provides to the firm and what responsibilities this translates into, a baseline necessary to determine the effect of increased levels of AI-capacity. The findings used in this theme are derived from section 5.2.2 The value of the marketing manager role.

Although all responding marketing managers had different roles, the logic of their employments were centered around enriching their firms with consumer insights, which are subsequently either acted upon through marketing or as used as input for developing new value propositions. In the case of the marketing manager of Refunder, his main objectives are brand building as well as acquiring and retaining customers through marketing, whereas the marketing managers of Rusta and the FMCG-corporation, due to their less senior positions, have a more narrow focus. All respondents' responsibilities align with those proposed by Verhoef and Leeflang (2009, p. 26); advertising, relationship management and segmentation, targeting and positioning.

Furthermore, the interviewed marketing managers did not appear to be deeply involved in pricing and distribution, which supports the notion of Verhoef and Leeflang (2009, p. 26), who states that marketing previously averted a greater influence in these domains. Furthermore, the role of the marketing manager of Refunder appears to align with what Whitler and Morgan (2017) describes as the Enterprise-wide Profit & Loss CMO role; delivering profitable growth by designing strategy and overseeing commercialization. Moreover, the marketing manager of the FMCG-corporation, states his performance is measured through several metrics, one being brand engagement. This supports the notion of soft-metrics becoming increasingly quantifiable due to digitization (Hanssens & Pauwels, 2016, p. 187), as well as the one of Kviby, who believes the increased implementation of AI turns the value of marketers more transparent and concrete.

6.2 AI and its usage in marketing

Through this theme, the aim is to provide insight into how AI is viewed by professionals and how it is leveraged in marketing as of today, as well what consequences this brings. The findings used in this theme are derived from section 5.2.3 AI and its impact on marketing and section 5.3.2 Definition of AI.

In general, all respondents were positive towards AI and its implications for marketing. The marketing managers are mostly familiar with AI through various techniques within machine learning as of today. This is in accordance with Schrage & Kiron (2018a, b), who has found that machine learning is the area within AI that probably has received the most attention regarding business and marketing. Moreover, it was found that the respondents use machine learning as a tool, with the objective of increasing efficiency and productivity in marketing, which is also what research by Kardon (2019) has

shown. Moreover, Rosvall describes that machine learning has during the last years been subject to significant attention in the AI community, and that prediction within marketing has a great potential that is not being sufficiently leveraged in businesses. Overall, the respondents view machine learning as a method that provides completely new dimensions and opportunities for analyzing large amounts of data, and that this consequently has led to increased sales due to increased relevance and better timing. As such, the respondents also see it as a way of working more data-driven and less driven on marketers' gut-feeling. This is in line with what Power (2017) describes, namely that the advantage of AI is its ability to gather and analyze vast amounts of data and optimally leverage the generated insights, rather than relying on marketers' gut feelings and guesses.

Furthermore, the respondents describe that this has resulted in significant automation which replaces operational as well as analytical processes. The marketing manager of Rusta further believes that machine and deep learning enables the marketing department to be able to work data driven "for real". Accordingly, the respondents view of AI were mainly concerned with AI as a rational agent in line with the description by Russell & Norvig (2014, p. 4), in which AI as an agent that "… acts so as to achieve the best outcome or, when there is uncertainty, the best expected outcome". All three AI experts are also mainly concerned with AI as various machine learning models, such as predictive analytics and deep learning which utilizes deep artificial neural networks. Rosvall describes that in his research, AI is mostly about the understanding of various systems, but that it mainly regards prediction in a practical sense. However, Rosvall also explains that AI is a very wide concept that means many things, and as such it is difficult to define in one way. Further, Kviby has a complementary view of AI. He views AI as an opportunity to consistently manage firms which are grounded in the same datasets, a "data lake" in the center of the firm, that connects and automates all areas of the firm's value chain. This was also touched upon by one of the responding marketing managers, in which his firm strives towards incorporating other areas of the value chain, to base their decisions on transactional data as well.

Marinchak et al. (2018, p. 22) is of the belief that AI alternates the roles, rules and tools of the marketing game, as well as that "... how, what and to whom to sell, as well as-what, how and from whom to buy, is increasingly an all-digital, AI-augmented and automated process." This belief is confirmed by all respondents, as a result of increased usage of machine learning applications for both marketing departments as well as consumers, though the latter may not always be aware of it. Moreover, the responding marketing managers describe that they currently use machine learning primarily for the following purposes within marketing: predictive analytics models; customer insights; personalization of marketing, content and recommendations; as well as for segmentation and targeting decisions. These areas are in line with research about which areas in marketing that utilizes machine learning as of today (Alpaydin, 2014, p. 3; Attaran and Deb, 2018, pp. 298-299; CMO Survey, 2019, p. 55; Power, 2017; Kardon, 2019; Kelleher et al., 2015, p. 2; Syam and Sharma, 2018, p. 140).

The marketing manager of Rusta, for instance, explains that by using machine learning, they can find connections that seems completely illogical to a human, but when used to recommend products, it has led to an incredible effect in increased sales. For Refunder, machine learning has enabled personalization of their marketing efforts towards their members, which has resulted in personalized advertisement campaigns and email communication, amongst other things. As such, the marketing manager of both Rusta

and Refunder both describes that the use of AI has led to increased sales, while also replacing human analysis - making it possible to run the firm with fewer employees than would otherwise be the case. Another respondent, Kviby, gives an example of a video streaming service he previously worked with, in which the machine learning algorithms now can forecast the number of subscribers, perform personalized recommendations and other targeted marketing efforts, as well as to give insights in what content they should broadcast.

6.3 AI and decision-making

The purpose of this theme is to bring insight into how AI can automate and/or augment decision making within the domain of marketing, and what role the machine and the marketing manager respectively will have in the organization. The findings used in this theme are derived from sections 5.2.4 Intuition in decision-making, 5.3.3 Decision-making in marketing and 5.3.4 Development of AI.

To begin with, all respondents seem to agree that AI will not replace and automate human decision-making, but rather augment the process. Sjölander, for instance, believes that machine learning can automate some relatively uncomplicated decisions, when they are easily formulated and computed and can be based on available data. As such, he is of the belief that algorithms can optimize decision-making based on what has been successful previously. However, he does not believe that an algorithm can find relationships between data from different sources that it does not have access to, such as potentially upcoming consumer trends, as it cannot internalize and compute reality as a whole. Consequently, he believes that decisions that cannot be grounded in historical data is better assigned to humans, such as strategic shifts into new territory.

The marketing manager of Rusta also describes the problem of incorporating data about events where no data is yet collected - such as events that has not yet occurred or a product that has not yet been offered, which is in parity with the opinion of Sjölander. This missing data, in addition to a lack of data about events that could have happened but did not, is according to Ransbotham (2016) a major barrier for full-scale implementation of AI in organizational decision-making. As such, when making strategic shifts, Sjölander believes that machines can support in interpreting data, but that a human is needed to make the final call based on intuition. This perspective of strategic thinking is shared with Henry Mintzberg (1994), who proposes the foundations of strategic thinking being syntheism, creativity and intuition. Consequently, strategic thinking predominately results in an "integrated perspective of [the organization]" rather than a "too-precisely articulated vision of direction" (Henry Mintzberg, 1994, p. 108). This is also in accordance with the opinion of Jarrahi (2018), who believes strategic thinking requires a level of sense making and understanding outside the specific decision-making domain. As such, the inability of AI to internalize and compute reality in its entirety as of today, as described by Sjölander, makes holistic strategic thinking difficult for AI to master.

Furthermore, Kviby describes that one cannot trust a conclusion made by a machine regarding decisions of more strategic nature, as these decisions cannot be tested before they are implemented on a full scale. In parity, Ransbotham (2016) describes that it is not possible to perform randomized A/B tests as every organization is unique, which he believes to be another barrier towards full-scale implementation of AI in organizational decision-making. Moreover, this view of intuition and strategic thinking is shared by the marketing managers of Rusta and Refunder as well, who argue that intuition as such is of great importance when making decisions in their role as marketing managers.

Accordingly, the respondent of Refunder stresses the importance of intuition in order to be able to ”think outside the box” regarding marketing activities and strategic shifts. Consequently, the respondent describes that an important aspect of his role as a marketing manager is to take risks and “blow boundaries and do things that no one else has done before”. The ability to think outside the box is also highlighted as a crucial part in the role as a marketing manager in the FMCG-corporation.

Based on the above theory and empiricism, it is suggested that AI does not yet master intuitive thinking to the same extent as humans, despite Google’s AlphaGo being the world champion in the intuitive game of Go (BBC, 2017). As intuitive judgements are products of System 1 operations (Kahneman, 2003, p. 698), one can draw the conclusion that humans still outperform AI in System 1 operations of the decision-making process. Rosvall, however, do believe that AI will be able to make some kinds of intuitive judgements in the future, which is an opinion shared by Kviby who believes that AI is approaching humans’ intuitive capability. Kviby argues that the input humans base their decisions on can be translated into data points, as he believes intuition simply being a matter of great amounts of unstructured data. However, Ransbotham (2016) has described that a further barrier towards full-scale implementation of AI in organizational decision-making is the need of very large data sets. Consequently, even if AI will at some point be able to master intuition, it will require very large amounts of data. Sjölander describes that if AI at some point will master intuition, it will take longer time than we think before this becomes reality. One reason for this could be the very large amounts of data this would require, which we are no way near having today. Moreover, intuition is implicit, associative, often influenced by emotions and governed by habit, and as such relies on experiences and knowledge acquired outside the decision-making domain (Kahneman, 2003, p. 698). Consequently, it can be argued that intuition is a human capability in its nature, and as such might be outside the limited capabilities of narrow AI.

In contrast to System 1 operations, Jarrahi (2018, p. 5) suggests that AI as of today to a large extent already outperforms humans regarding System 2 operations; which according to Kahneman (2003, p. 698) are slow, serial, effortful, consciously monitored and deliberately controlled, in addition to being relatively flexible and potentially rule governed. Kahneman (2009, p. 523) further describes that AI outperforms humans in situations where the validity is very high, in environments with high predictability, and there exists a performance maximum, due to their ability to analyze vast amounts of data without making any erroneous calculations. The collected empiricism appears to support this notion, as the decisions they leave to algorithms are indeed operating in the situation and environment such as described by Kahneman (2009, p. 523), as machine learning is largely leveraged for prediction in various forms based on large amounts of transactional data. Consequently, AI outperform humans in tasks where an analytical approach is necessary, involving the analysis of knowledge through conscious reasoning and logical deliberation (Jarrahi, 2018, p. 4). Since rationality is a rule-governed, controlled and neutral process (Kahneman, 2003, p. 698), the process of rational decision-making in System 2 operations is as of today better performed by algorithms than humans.

As described, humans will be better than AI at intuitive System 1 operations in decision-making for a foreseeable future, while already being outperformed by AI in System 2 operations. Consequently, humans and machines should favorably be seen as complementary strengths for organizational decision-making, which is an opinion

shared with scholars such as Jarrahi (2018, p. 8), Epstein (2015) and Marinchak et al. (2018) - who believe that machines should augment human decision-making, but not completely automate it. This symbiosis can be manifested through a combination of the speed of AI in collecting and analyzing information, and humans' superior intuitive judgment and insight (Jarrahi, 2018, p. 7). As such, a human can determine what variables that strongly influence outcomes, in which the machine is told what factors must be well-grounded in data and analysis (Jarrahi, 2018, p. 7). This relationship is exemplified by Kviby, who express that he views the machine as the best colleague to ask "what do you think?", and then choose if this is something one wants to proceed on with. However, the marketing manager of Rusta, Kviby as well as Sjölander expresses that they all believe that humans should always test and validate the conclusions from the algorithms before implementing them, and accordingly not trust AI blindly. This especially regards decisions of more strategic nature.

6.4 Change in required skill-set of marketing managers

This theme aims at exploring the required skill-sets of marketing managers, as AI increases in importance. The findings used in this theme are derived from sections 5.2.6 Change in required skill-set of marketing managers, 5.3.4 Development of AI and 5.3.7 Change in required skill-set of marketing managers.

To begin with, all interviewed marketing managers stressed that capabilities involving emotional intelligence are highly important in their roles as marketing managers. This because empathy and a social understanding is crucial when acquiring valuable consumer insights for the development and innovation of products and brands, as well as to know what tonality to use when communicating with customers and other stakeholders. This view is supported by all interviewed experts, in which Kviby states that building a brand involves understanding what people are interested in and what they need help with. Their views align with those of Jarrahi (2018, p. 8), who states that emotional intelligence is essential to the understanding of the political dynamics that underlie equivocal decision-making, in which the formulation of a brand can have many interpretations, thus is equivocal. Furthermore, two managers mentioned empathy being crucial when motivating subordinates and driving the business forward. This notion also supports the ones of Jarrahi (2018, p. 8) and Beck and Libert (2017), who are of the opinion that emotional and social understanding is vital to the development of visions, and subsequently to persuade and motivate others to move in that direction.

Moreover, according to Rosvall, emotional intelligence is not only important for the sake of the marketing role itself. Also, he believes that marketing managers must have a social understanding, to communicate to the engineers what works and not, so that they can concretize and implement the implicit mechanisms of emotional intelligence. Though, he is of the opinion that it is difficult to fully replicate capabilities related to emotional intelligence, thus he believes algorithms will not replace us, but rather strengthen our capabilities. This notion aligns with what scholars envisions as collaborative intelligence (Epstein, 2015; Jarrahi, 2018; Marinchak et al., 2018). Considering the respondents aligning view with those of scholars, it appears capabilities related to emotional intelligence are, and will be essential to marketing managers.

Creativity was described by all marketing managers as being a fundamental aspect of their role, in which both agreed upon the fact that besides creativity being a necessity when deciding upon product characteristics as well as in the innovation process of a brand, it is also so when making strategic shifts. The notion of creativity being a fundamental element of strategizing is supported by Henry Mintzberg (1994), who

presented strategic thinking to be grounded in synthesis, creativity and intuition. The marketing manager of Refunder also adds that too much trust in data can kill creativity, in which marketing managers must balance this tradeoff. Instead, as machine learning provides information regarding how the communication should be governed, the new role of the marketing manager is to draw conclusions based on the information provided when building campaigns, as AI yet cannot master the creative process. Furthermore, Kviby is of the opinion that parts of the creative process will be automated, and before a machine will be able to create the concept itself, a human configures the space in which the machine moves within. The above taken into consideration, creativity is an essential skill for marketing managers to possess in strategizing as well as for developing the concepts of content, but less so in the creation of the content itself.

Lastly, all interviewed marketing managers experience their role as becoming increasingly technical, and as such they believe the importance of technical skills among marketing managers will increase. As the marketing manager of Rusta describes, nowadays there is always a technological dimension to the customer experience. Rosvall is of the opinion that marketing managers must be able to understand the various AI-tools applied in marketing, as well as to understand the AI-assistants. Furthermore, the marketing manager of Refunder expressed one advantage in machine learning being the fact that one can test campaigns on a smaller scale, before launching it to the rest of the targeted segment. For this, marketing managers must possess the capability of understanding and interpreting the data. A potential possibility closely related to this, that also would require technical skills, is the one mentioned by Rosvall, who imagines AI being able to simulate marketing strategies. The coherent view of technical skills being on the arise among marketing managers supports the proposition made by Wedel and Kannan (2016, p. 117), in which marketing departments still need managers well-immersed in business strategy, but simultaneously sufficiently familiar with technology and analytics.

6.5 Problems with AI usage in marketing

This theme aims at analyzing barriers to the implementation of AI, mainly ethical concerns regarding the collection and usage of data, as well as the lack of explainability of algorithms. The findings used in this theme are derived from sections 5.2.7 Problems with AI usage in marketing as well as 5.3.6 Problems with AI usage in marketing.

To begin with, none of the responding marketing managers view the lack of explainability as a major concern, in relation to how the algorithms are applied as of today. This supports the notion of Sjölander, who believes that explainability is not of importance within their own business environment, as managers often only want to see results. He believes, however, that this demand will increase as the industry matures. Furthermore, Rosvall explains that if maximum prediction generates significant results, minor errors might not be of major concern. Thus, one can draw the conclusion that the predictions made by algorithms generates such a great value that the lack of explainability is of minor concern for the responding marketing managers. However, one responding marketing manager mentioned the cruciality in being able to explain and motivate a decision, hence it is difficult to completely trust an AI-technology. Furthermore, Rosvall is of the opinion that marketing managers want to know why a strategy is the most appropriate one before adhering to it. As described by Kelleher, Mac Namee and D'Arcy (2015, p. 522), it is often the case that business does not accept predictions made by a model, when the predictions cannot be explained and justified. Davenport and Kirby (2016) are of a similar opinion, stating that humans trust and

interact more effectively with AI-technologies if they know how these technologies arrive at their analytical conclusions. Accordingly, whether the lack of explainability is a problem or not highly depends on the decision-making domain, in which strategic-marketing decisions will be assigned to managers as long as the outcome of algorithms cannot be explained.

Furthermore, the respondents expressed a coherent view of data collection and usage being the major ethical concern, and not the usage of AI-technologies itself. One responding marketing manager expressed a need to continuously take ethics into consideration when deciding how to work with customer data, as the possibilities increasingly stretches in which it is beneficial to stay under the legal limit. This is in parity with the view of Rosvall, who states that the technology opens possibilities that are not justified in an ethical sense, and when people become aware, it hits them back. Therefore, firms must find a balance in order to avoid negative publicity. Moreover, Rosvall is of the opinion that it is solely advantageous to firms to be fully transparent with their collection and usage data. This is in accordance with Sjölander, who is of the belief that firms that are transparent about what they do with the customer data and how it benefits the consumer, will build stronger relationships with their consumers than the firms that do not. In this way, a new focus of marketing managers will be to establish appropriate data collection and usage policies, and subsequently communicate these in a clear and coherent manner. This supports the conclusions of Martin and Murphy (2017, p. 152), who state that data transparency can mitigate the customers' sense of vulnerability that is caused by data collection and usage. The authors further argue that the communication of the firms' privacy policies must be authentic, open and transparent, both to consumers and legislators, in order to succeed in the long-term.

Furthermore, Martin & Murphy (2017, p. 152) conclude that firms that adhere to privacy as a strategy will benefit from laxed regulations as well as consumer trust. The latter is further implied by Kviby, who exemplifies that Apple's approach, supposedly less data collection than the giants and local storage of data, allows them to communicate their policy to enhance the perception of their brand. Moreover, regarding regulations, Rosvall is of the opinion that the pace in which regulations advances will depend on how the big firms behave. However, as a consequence of this sense of vulnerability, one can assume consumers to become more restrictive regarding their data sharing, as expressed by Sjölander, in which firms must develop models that can perform well with less data. All of the above taken into consideration, it becomes clear that for marketing managers in firms that collect customer data and act upon this data through utilizing various AI-technologies, a key responsibility is to establish transparent policies and to communicate them in an effective manner.

6.6 The future of marketing with regards to AI

In this theme, aspects of market dynamics as of AI are discussed in a more hypothetical way through elaborating on future scenarios. The findings used in this theme are derived from sections 5.2.8 The future of marketing with regards to AI, 5.3.9 The future of marketing with regards to AI, 5.2.5 Change in relationship between firm and consumer as of AI, 5.3.5 Change in relationship between firm and consumer as of AI as well as 5.3.8 Implications for competition.

To begin with, all three marketing managers believe that the development we have seen in terms of increased technological possibilities and automation will continue in the same direction. The respondent of Rusta is of the belief that marketing managers will be enabled to work increasingly data- and insight driven, as well as that the media

landscape will change with less use of conventional marketing channels, in favor of new digital channels such as AI-assistants.

Moreover, the marketing manager of Rusta believes that more jobs within marketing will be automated, with the marketing manager role as an exception due to the role being very multifaceted. The marketing manager of the FMCG-corporation has the same belief regarding automation, but also believe that there will be many new roles in marketing as was the case in the social media revolution; such as more specialist marketers with technological skills. Kviby is of a similar opinion and points out that specialized consultants will constitute a greater part of the marketing function of firms than as of today. However, Kviby points out he has several times come across resistance to change as a barrier to the implementation of AI in the marketing function of firms, due to the fear of employees losing their jobs. As such, this might slow down the automatization process in the marketing departments of some firms. However, Ng (2016) believes that every firm needs to fully understand what AI is and what it can do for a firm's strategy, and accordingly integrate it into their strategies. Moreover, 85% of executives believe AI will help them obtain or sustain a competitive advantage (Ransbotham et al., 2017) and marketers currently identify AI as the technology they are most likely to implement by 2020 (Kardon, 2019). Thus, based on theory and collected empiricism, one can draw the conclusion that it indeed appears highly important for marketing managers to join the AI-revolution at an early stage. This point of view is also given by the marketing manager of the FMCG-corporation, who explains that he views AI partly as a threat, as it might be damaging if competitors utilize it faster and better than oneself.

Both the responding experts and managers believe the increased usage of AI in marketing has the possibility to create value for both consumers and firms. This because the technology enables a greater personalization of information marketed to the consumers, which results in the marketing being more relevant and consequently that firms can achieve a higher return on marketing. As a consequence of increased relevance in marketing, Rosvall believes that consumers will make better purchases and maximize the value of what they buy – as such reducing the frequency of their purchases which hopefully will move us away from overconsumption. Moreover, Sjölander and Rosvall believe that this will further reduce overproduction, overstocking and waste. Kviby is of the belief that as relevance is improved, the relationship between firm and consumer will develop for the better and transform the view of advertisement to a tax on a product in order to sell it, which might not be needed if the product is good enough. According to Rosvall, however, there is always a risk of new technology being overused and/or misused, in which a customer-centered focus is necessary to keep the marketed information relevant to the consumer. Over time, this will establish a trustful relationship between consumer and firms.

Sjölander and Rosvall are both of the opinion that firms in general, except for major ones, will buy their technical marketing tools from a few giants that will drive the development of technology as the AI-solutions will be advanced. As such, Rosvall believes that firms will focus on their core capabilities to develop competitive products, and less on the sales of these products. Sjölander states that no algorithm can substitute a good product, and that data will help firms to understand demand and consequently be able to meet it better. Accordingly, Sjölander states that niched mono-brands already has and will continue to thrive. This belief is also expressed by the marketing manager of the FMCG-corporation, who points out that there is an ongoing trend amongst

consumers to prefer niched and local brands over more general brands. Further developments in technology also make it easier and cheaper to operate with economic efficiency on a smaller scale. Sjölander as well as the marketing manager of Refunder point out that non-specialized e-commerce businesses will have a difficult time competing with bigger ones such as Amazon, and also describe that this will not be a problem for the niched brands who can utilize these as distribution channels. Consequently, these findings suggest markets will become more niched and specialized with intensified competition, as expressed by the marketing manager of the FMCG-corporation.

Furthermore, the view of AI-assistants becoming an important channel was somewhat coherent among all interviewees. In this way, it will be important to be listed on these platforms, in which Kviby believes they will increase the polarization among brands, since the ones listed will not have the same access to customer data. The marketing manager of Rusta see potential, although Rusta has no e-commerce as of today, to enrich the customer experience in different ways through the AI-assistants. This is partly supported by Kviby, who is of the belief that firms with a good brand can have a dialog and build a tight relation with their customers. Moreover, the marketing manager of the FMCG-corporation believes the AI-assistants will cause fierce competition among firms, as the AI-assistants will base its decisions solely on facts and not emotions, thus less tools available to the marketer to attach consumers to brands. In this way, the AI-assistants will not take the brand into consideration, unless it is an important decision criterion to the consumer. This is in parity with the view of Kviby, Rosvall and Dawar (2018), in which firms must direct focus to optimize their value propositions towards the AI-assistants. What differentiates the view of Dawar (2018), who believes brands will have less significance unless its main channel is brick and mortar or if the brand already is an important decision criterion, with the one of Kviby, is that Kviby believes brands will again become the most important decision criterion when everyone optimizes to the AI-assistants in the same way.

The notion that brand building is of utter importance is also indicated by the marketing manager of Refunder, although based on a different reason, as he believes AI-assistants will face difficulties in presenting the most appropriate alternatives to the consumer. Thus, being “top of mind” among consumers will be even more important when they choose among various alternatives presented by the AI-assistants. However, assuming AI-assistants will reach sufficient predictive performance at different points in time for different segments and products, it will implicate the role of marketing managers further. For commodity products, where price is the only important factor with frequent purchases, the AI-assistant can be assumed to be more accurate in relation to more complex value propositions with infrequent purchases. Thus, marketing managers must be agile and well-prepared to shift the focus of the marketing spending. This aligns with the view of Dawar (2018), who suggests as consumers shift to AI-assistants, brand must evaluate the importance of brick and mortar, and subsequently design appropriate strategies. As suggested by Jarrahi (2018, p. 12), managers must be prepared to adapt and readapt in the face of evolving AI. Moreover, the marketing manager of Refunder is concerned about which parameters the AI-assistants will base their decisions on, in which he touches upon the importance for the AI-platforms to balance the conflict of interest between consumer and firms, as stated by Dawar (2018).

Regarding the competition threat from tech giants, Sjölander describes that he views them as an opportunity rather than a threat, as they enable technology which other tech

firms, such as Infobaleen, can build upon - and as such find a niche. This is also pointed out by Ng (2016), who describes that the AI community is exceptionally transparent, and that in contrast human and data resources are scarce, rather than technology. The same view is given by Rosvall, who points out that these tech giants have very general solutions, "one size fits all", thus smaller tech firms can provide customized solutions. This is in line with Ng (2016), who states what software must be highly customized to the business context and data, in order to be successful. In accordance, Kviby explains that even if these algorithms are trained with huge datasets, the best algorithm is usually only slightly better than the second best one, hence this is not necessarily a major concern. However, Sjölander describes that they despite the opportunities the tech giants provide, they are nonetheless as they have vast resources and data to improve their own technology.

As such, one can draw the conclusion that AI will increase competition due to effectivization of the market, which will lead to more specialized firms, both among B2C-firms as well as in the tech industry. Consequently, marketing managers will need to join the AI-revolution at an early stage to maintain competitive strength.

6.7 Visualization of analysis

Below is a visualization of key findings derived from the analysis. All factors affect the role of marketing managers (MM) directly or indirectly.

Figure 3 - Visualization of analysis

7. Conclusions and recommendations

This chapter begins with a summarized description of the study's results. After this, a description of the study's practical and theoretical contributions is given before possible societal implications are described. The chapter concludes with an account of the study's limitations and proposals for further research.

7.1 General conclusions

The main purpose of this thesis was to investigate how marketing managers are affected by increased levels of AI-capacity. This was done by triangulation through interviewing marketing managers, who explained what their role contribute with and how it has been affected by AI, as well as AI-experts, who demonstrated the capabilities of AI as of today and future prospects, in addition to using previous literature and research in the area. In this way, the aim was to map out the value of marketing managers and through which tasks this value is created, to determine how AI can substitute and support this value creation. The interviewees were further questioned about their opinions on how the market dynamics is changing, as well as problems and ethics in relation to AI. Hence, we could make assumptions and set a baseline, which the role of marketing managers was built upon.

How is the role of marketing managers in B2C-firms affected by increased levels of AI-capacity?

The findings of this study suggest that increased levels of AI-capacity affect the role of marketing managers in B2C-firms both externally and internally. First, the increased usage of AI-technologies allows for better financial accountability of marketing managers, thus marketing managers can avert a greater influence in top management. Furthermore, B2C-firms can sustain their competitiveness by developing relevant value propositions to specific segments, focusing on their core capabilities. In this way, their existence is justified and not threatened by tech giants, but instead the tech giants are leveraged as distribution channels. As one of the respondents expressed; no algorithm can compete with a good product. The tech giants are further utilized as a source of cutting-edge technology, upon which others can build customized solutions. As a result of advancements in AI-technology and due to lack of resources, the evidence from this study suggests that SMEs seek to outsource specialized marketing solutions to a greater extent. Our findings indicate that the marketing function stay in house, though with a greater share of specialized consultants. Thus, marketing managers are still to be employed by B2C-firms, in which they need to put a greater focus on coordinating the involved parties.

Further affecting the role of marketing managers are the evolving AI-assistants, in which the findings of this study suggest that they will increasingly become a crucial distribution channel. Also, the respondents view the AI-assistants as an important element for marketing managers to have dialogues and further strengthen the relationship with customers. However, if the AI-assistants can accurately predict the preferences of the consumer, the evidence from this study suggest that marketing managers must shift focus, to instead optimize their value propositions towards the AI-assistants, thus marketing managers have less emotional tools to work with. Marketing managers must further be agile and well-prepared for a shift in distribution channel, as the AI-assistants can be assumed to reach sufficient prediction at different stages, depending on the complexity of the value proposition. If the AI-assistants fail to present appropriate products to consumers, brand building will become even more important, as

being “top of mind” is essential when consumers purchase products through voice. Assuming though they become proficient in predicting consumer preferences, brand building will still be a crucial part of the marketing manager role, as it becomes the knockout criterion when all firms reach maximum optimization towards the AI-assistants. Parallels can be drawn to when the firms that early began working with SEO gained competitive advantage, but as more firms did so, it instead evolved into a hygiene factor.

As customer data collection is a major component in the usage of AI-technologies in marketing, the findings of this study suggest marketing managers will increasingly work with establishing transparent policies that benefit the customers. Firms that communicate this in an authentic and effective manner will build strong relationships with their customers. The evidence from this study further suggest that consumers will become more restrictive in sharing their data, hence firms must develop accurate prediction models based on less data. Furthermore, the respondents had no major concerns regarding the lack of explainability, but as AI becomes responsible for decisions of more strategic nature, the findings of this study suggest the demand of explaining the outcomes of algorithms will increase.

Moreover, the respondents expect further advancements in AI-capacity, in which certain tasks that are easily computed in marketing departments are to be automated, including parts of content creation. Increased usage of AI-technologies further demands marketing managers to be sufficiently knowledgeable in technology. As the responding experts believe AI-technologies are unlikely to replicate human EQ, intuition and creativity for a foreseeable future, marketing managers will still be vital to firms. This because the responding marketing managers reported these capabilities to be highly crucial in their role.

7.2 Theoretical contributions

Through the conduction of a qualitative multi-case study, we have been able to explore how increasing AI-capacity is affecting the role of marketing managers. As such, this has brought a holistic insight into the intersection of marketing, decision-making and AI - an area underexplored in relation to its importance (Wedel & Kannan, 2016, p. 102). Furthermore, this study has contributed to the literature in several ways.

First, the findings of this study points in the direction of marketing managers being highly dependent on their emotional intelligence, creativity and intuition, which aligns with the conclusion made by Mintzberg (1994), who suggests the fundamentals of strategic thinking to be; synthesis, intuition and creativity. Emotional intelligence is further essential to the role of marketing managers, due to the necessity for managers to understand the dynamics of equivocal decision-making as proposed by (Jarrahi, 2018, p. 8), in which the formulation of a brand is such a decision. Human-emotional intelligence (Jarrahi, 2018, p. 8; Beck & Libert, 2017), intuition (Jarrahi, 2018, p. 11) and creativity are believed to be difficult for AI to replicate for a foreseeable future. Previous scholars have proposed a symbiotic relationship between marketing managers and machines to be the most likely scenario (Jarrahi, 2018; Epstein; Beck & Libert, 2017), in which the findings of this study suggest is the case for marketing managers as well.

Second, the notion of increasing levels of AI-capacity enabling better evaluation of the value of marketing, supports the one as proposed by Hanssens and Pauwels (2016, p.

187), in which they state that rapid development of data quality and quantity along with new analytical methods increases the assessability of marketing.

Third, as proposed by Dawar (2018), the findings of this study also suggest AI-assistants becoming an essential distribution channel for marketing managers to focus on. However, the findings further suggest brand building will once again become the most important criterion in which the consumers base their purchasing decisions upon, either due to the inability of AI-assistants in accurately predicting consumer preferences, or as a result of all brands reaching maximum optimization. This notion contradicts the one of Dawar (2018), who concluded brand building will become less important, unless it already is an important decision criterion, or in the case of selling through brick and mortar. What is rather clear though, is that the findings of this study support the proposition made by Jarrahi (2018, p. 12), who concluded managers must be prepared to adapt and re-adapt in the face of evolving AI. The same appears to be valid for marketing managers, as a rapid development of the AI-assistants predictability of the focal product category, suddenly forces marketing managers to shift focus towards the AI-assistants.

7.3 Practical contributions

As this study investigates how marketing managers in B2C-firms are affected by increased levels of AI-capacity, it inevitable has a practical dimension to it as it helps marketing managers to prepare for a major disruption - the fourth industrial revolution, which has been compared to the way electricity transformed our world and industries a hundred years ago (Ng, 2016). For marketing managers to be sufficiently prepared, this study has outlined which skills that will be increasingly important for marketing managers to possess in the future. To understand how to leverage the capabilities of AI, such as the new dimensions and opportunities for analyzing large amounts of data, it is of key importance for marketing managers to possess technical skills, to be able to understand and interpret this data. Moreover, one of the main findings regarding the value of the marketing manager role was found to be the development of value propositions. As there is always a technical dimension to the customer experience, as mentioned by one respondent, the value of being able to enrich the customer experience through technological solutions are indeed an important aspect in the role of marketing managers. Technological skills are also required as marketing managers will need to understand how AI-assistants work and how this new channel can be leveraged.

Furthermore, softer skills within the domain of emotional intelligence, such as social understanding and empathy, appears to be vital for marketing managers to possess. These skills are important for several reasons: in acquiring valuable consumer insights for the development and innovation of products and brands, as this involves understanding what people are interested in and what they need help with; for motivating subordinates and driving the business forward as well as to know what tonality to use when communicating with customers and other stakeholders.

Moreover, creativity appeared to be a fundamental aspect of the role of marketing managers as it is highly important for strategic decision-making, as well as in the innovation process of a brand and when deciding upon product characteristics. As the importance of brands appears to increase due to the entrance of AI-assistants, the creative dimension will remain as a key aspect of the marketing manager role. Moreover, it is important for marketing managers not to put too much trust in data, as this might kill creativity and lead to risk-averseness. As such, marketing managers will

need to balance data and creativity. However, as AI will likely be able to master parts of the creative process, it might be less important for the creation of content in itself.

Further, this study gives practical contributions to marketing managers regarding why they should utilize machine learning technologies in their marketing efforts and decision-making, as well as through which tools they can do this. A main conclusion of the study is that machine will not replace human organizational decision-making, as human intuition is of high importance for marketing managers while also being difficult for AI to master. Thus, it is envisioned that machines will rather partner with marketing managers in order to achieve the goals of the marketing manager. As of this, the study contributes practically as it stresses the importance for marketing managers to integrate AI in their departments at an early stage in order to augment decision-making and stay relevant to consumers. Furthermore, even though the marketing manager role is not believed to be automated, many other roles within marketing departments will. As such, this is important for marketing managers to be aware of. This study also sheds light on how the competition might look like ahead for firms in the consumer goods industry as well as in the tech industry, with regards to both trends and development. Another practical implication of this study is that it points at potential problems marketing managers need to be aware of with regards to AI; such as problems with explainability (black boxes) as well as ethical and legal aspects, in addition to other barriers to full-scale implementation of AI in organizational decision-making.

7.4 Societal implications

As this research regards a phenomenon that already has begun to change business and consumption, the societal implications should not be overlooked. The perhaps biggest potential impact of increased AI-capacity within business is the fact that marketing is becoming significantly more relevant to the consumer, due to increased personalization and predictability. As a consequence, consumers' overconsumption is likely to decrease, as well as firms' overproduction, overstocking and waste. Consequently, these are positive implications for the environment. Moreover, the increased relevance of marketing in combination with the development and increased use of AI-assistants, who will be able to handle consumers routine-based purchases, will increasingly lead to consumers spending less time purchasing and thus increasing their available spare time.

However, overuse and misuse of AI regarding the collection of personal data is a possible negative implication for society, in which it might lead to an increasing number of firms' trespassing on consumers personal integrity in the search for increased revenue. As such, several respondents are of the opinion that it is the responsibility of firms to act in accordance with ethical guidelines as well as regulations, thus not collect and use more consumer data than they need to, as well as being transparent with their policies and communicate this in an effective manner. Only by doing so can firms improve their relationship with their customers, who are becoming increasingly cautious about what data they share. Moreover, increased automatization as of AI will likely continue to replace and change many roles within marketing as of today. As this enables firms to operate with fewer employees, it has the possibility to cause layoffs, as was mentioned by respondents. While new specialized roles might be created and some current roles may simply change, it appears as the net amount of work in marketing will decrease, which could lead to increased unemployment in society. The amount and importance of marketing managers are however prognosed to increase during the foreseeable future, partly because of the increased accountability as of AI and other technologies.

Lastly, as the role of marketing manager is becoming increasingly technological and data-driven, they need to possess technical skills, to be able to understand and interpret data. As a consequence, education in business and marketing should redirect focus towards a more technological-oriented education.

7.5 Limitations and future research

One limitation with this research is its relative lack of generalizability, as it is a qualitative study with an inductive research approach. A risk with the inductive research approach is that it is difficult to know how generalizable the findings are (Patel and Davidson, 2011, p. 23). Accordingly, the findings of this research can only be viewed as completely valid for the investigated cases, in line with our philosophical standpoint. Thus, the purpose of this study has rather been to attain a deeper understanding of how marketing managers are affected by increased levels of AI-capacity. However, as this is a multiple-case study, the findings can favorably be viewed as stronger and more robust than would be the case for a single-case study (Herriott & Firestone, 1983, referred in Yin, 2009, p. 53). As such, we believe that these findings might be applicable to similar firms as the ones investigated. However, as this study has been limited to only investigating a few cases, of which all except one are Swedish firms, and directly or indirectly involved in the retail-industry, we suggest further qualitative research on more cases and with different characteristics.

Furthermore, as AI has many different implications on the role of marketing managers, as shown through this study, research should focus on each specific area as showed in the visualization in section 6.7. This is necessary in order to attain a deeper understanding in each area, as this exploratory research only touched upon each of them briefly. Many of the findings relate to research areas of their own, such as data privacy, thus there is already active research in the field. But, for other findings, we have not been able to find previous research, such as the indication of a greater degree of outsourcing specialized solutions in marketing departments. We therefore suggest future research to test this trend quantitively. For example. the next CMO Survey could include an instrument that measures to what degree marketing departments outsource solutions as a result of higher technology requirements.

The findings of this study further indicate that brands will be more important in the future, since all firms will eventually optimize towards the AI-assistants in the same way. This partly stands in contrast to the findings of Dawar (2018), which indicate that brands will be less important in the future. This might be a consequence of Dawar (2018) not including this longer-term equilibrium in his research, which has been seen previously in e.g. search engine optimization. However, due to this ambiguity, it would be of high value to further investigate the future importance of brands as AI-assistants become increasingly developed and adopted by consumers. Consequently, as AI-assistants are forecasted to change the market drastically, but appear to be underexplored within business administration research as of today, the disruption and its implications, need to be investigated further. In particular, future research should focus on successful strategies when shifting distribution channel to AI-assistants, and how to conduct marketing towards AI-assistants and consumers simultaneously.

Moreover, research should be conducted regarding the skill-set marketing managers will need to possess to be successful, as the findings of this study indicates there will be a great demand of strong technological skills, emotional intelligence and creative and intuitive capabilities. Further, as the findings of this study points in the direction of major labor layoffs in marketing departments due to increased automation, future

research should investigate this further as it has major consequences for education and society as a whole.

Lastly, the findings of this study indicate that competition will intensify as of increased AI-capacity, which will lead to more niched and specialized products and brands. This implies that firms need to adapt to this at an early stage, in order to continue being an attractive choice for their customers. Thus, we suggest future research to investigate successful strategies when transitioning towards hyper differentiation.

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Appendix 1 – Interviews with marketing managers

1. Tell us about your firm and its business model.
1. What are you employed to contribute with to the firm?
   Follow-up: What tasks do you perform to fulfill that purpose?
2. What does AI mean to you in a general sense?
3. What does AI mean for your tasks as a marketing manager?
   Follow up: How has it affected your organization?
4. How do you think the relationship between firms and consumers will evolve because of AI, and how will it affect your role as a marketing manager?
5. Are you primarily concerned with AI as an opportunity or a threat in relation to your role a marketing manager?
6. The next question regards so called AI-assistants, such as Amazon Alexa and Google Assistant, software agents who can perform tasks and services for an individual based on verbal commands. Assuming they will be able to present product alternatives according to the consumer's preferences, what impact do you think personal AI-assistants will have on the relation between firm and consumer?
7. How would you say the relationship between you as a marketing manager and the CIO is evolving?
8. What decisions do you make today that could already now be automated and/or supported with AI?
   Follow up: How do you think it will look in the coming years?
9. How do you apply intuitive judgments to the decision-making process?
10. How do you make use of your creativity in your role as a marketing manager?
11. How do you make use of skills such as persuasion, social understanding and empathy in your role as a marketing manager?
    Follow up: do you think these skills will be more important to possess as a marketing manager?
12. How do you view the fact that the outcome of some algorithms is difficult to explain? (so called black boxes)
13. Do you see any ethical dilemmas regarding the use of AI in marketing?
    Follow-up: With regards to customer data?
14. How do you think marketing will change in the future?

Appendix 2 – Interviews with AI-experts

1. Tell us about your background and what you do in your work, as well as how it relates to AI?
2. What does AI mean to you?
3. How can AI augment or automate human decision-making within the context of marketing?
4. What do you think of the possibility of AI in mastering capabilities such as intuition, creativity, persuasion and social understanding, at the same level as humans?
5. How do you think the relationship between firms and consumers will evolve because of AI?
   Follow-up: How will this affect the role as marketing manager?
6. The next question regards so called AI-assistants, such as Amazon Alexa and Google Assistant, software agents who can perform tasks and services for an individual based on verbal commands. Assuming they will be able to present product alternatives according to the consumer's preferences, what impact do you think personal AI-assistants will have on the relation between firm and consumer?
7. Given this development, what skills do you think will be most important for future marketing managers?
8. How do you view the fact that the outcome of some algorithms is difficult to explain? (so called black boxes)
   Follow-up: How is this area evolving?
9. Do you see any ethical dilemmas regarding the use of AI in marketing?
10. How do you think the legislation regarding collection and storage of customer data will evolve?
    Follow-up: How will it affect the use of AI in marketing?
11. Do you think we are moving towards a future where firms keep their marketing in-house versus outsourcing?
    Follow-up: What effects will it have on companies and consumers?
12. How can firms compete with algorithms provided by giants such as Amazon and Google, who train their algorithms with massive amounts of data?
13. What do you think AI in marketing will mean for companies, consumers and society in the long term?

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