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Big Data in Practice

An Explorative Study of how Big Data Relates to Market Orientation within the FMCG Industry

Abstract

An enormous amount of data is created, stored and analyzed every day, hour and second. Companies all over the globe are receiving trillions of bytes of information from their customers, spurring the interest for 'Big Data' and the opportunities it provides. But despite this immense enthusiasm, the academic research concerning Big Data's practical implications is limited. This study focuses on the FMCG industry, a historically data driven industry. Recent development on the market is taking the actors into the Big Data age, especially due to the increased use of loyalty card data. This study aims to create knowledge and a deeper understanding of how FMCG suppliers are utilizing Big Data as of today, and how their current practices are affected when the data landscape evolves. We strive to contribute to the limited academic research on Big Data by relating it to the phenomenon of market orientation. This research is conducted through a qualitative case study, where we carried out in-depth interviews with 11 Swedish FMCG suppliers. Our findings show that Big Data has implications for the studied firms' market orientation, since it is affecting how market intelligence is generated, disseminated and consequently affecting the responsiveness to that market intelligence. Additionally, we have highlighted the importance of the relationship between suppliers and retailers in the FMCG industry. The relationship with the retailers we argue, is partly determining how much value the suppliers can extract from Big Data, as it affects the way in which the data is used.

Keywords Big Data, Loyalty card data, Market orientation, Market intelligence, FMCG suppliers

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Table of Contents

1. Introduction

The digitalization of our society is moving fast, and as a consequence an enormous amount of data is created, stored and analyzed every day, hour and second. Companies all over the globe are receiving trillions of bytes of information about their customers, suppliers, as well as their own operations in a never ending stream, and networked sensors are being embedded in devices such as mobile phones, automobiles and industrial machines, capturing actionable information in real time (Manyika et al., 2011). Some even speak of a new industrial revolution, in which digital data drives the creation of completely new opportunities for both business and society at large (Bloem et al., 2013). Accordingly, 'Big Data' has become the new it-word on everybody's lips, and is said to improve decision making, increase innovativeness, productivity and value creation, or even to disrupt markets. While there still exists confusion regarding what the concept entails, Manyika et al. (2011) define it as "Datasets whose size is beyond the ability of typical database software tools to capture, store, manage and analyze", while the term 'Big Data Analytics' captures the aspect of value creation the data is supposed to generate (e.g. Kwon, Namyeon and Bongsik, 2014).

The Fast Moving Consumer Goods (FMCG) industry has long had an extensive amount of data to track their business, not the least since the emergence of bar codes in the 1970's, enabling them to track every item leaving a retailer's store (Manyika et al., 2011). Recent development has led the industry towards the Big Data age, for example by the increasing use of loyalty card programs, which collect detailed information about the shopping behavior of the users in real time. Tesco is an example of a grocery retailer sharing this data with FMCG suppliers, who in turn analyze the data to help Tesco develop its categories in a mutually beneficial way (Platt, Souza, Checa and Chabaldas, 2014). This development has now reached Sweden, as Sweden's market leading grocery store chain ICA is rolling out a system through which they will sell loyalty card data[*] to its suppliers. But despite the extensive access to various types of data and increasingly sophisticated tools to make use of it, the suppliers within FMCG are facing challenges to reach the insights and efficiency gains the Big Data is said to provide. In December 2015, we conducted a study on behalf of the Swedish Customer Relationship Management (CRM) company Lentus, now part of IRi, based on interviews with 18 different FMCG suppliers on the Swedish market. Our findings showed that these respondents generally perceived the drawbacks of the data at hand similarly: there is too much data spread out on too many platforms, and the data is too complex and non intuitive for them to get the most out of it. This summed up in a general view of data being very time consuming to handle and

[*] For definition, see Appendix 1

also very costly. The IRi study spurred our interest in the topic of Big Data and the practical implications it has provided. In an industry with a long history of data usage and already deeply ingrained analytical tools and methods, what happens when the data gets even bigger?

The extent to which opportunities related to Big Data can be captured and employed by firms is undoubtedly dependent on how well related issues are resolved. Literature on the topic has already stated various obstacles that needs to be overcome in order to succeed with Big Data Analytics, such as policy concerns, technological, and organizational issues (Manyika et al., 2011). But there are still few studies that have studied the implications in practice. In the FMCG industry, the retailers are inevitable middlemen in order for the suppliers to reach their end consumers, but also the main source of market data. Does this relational complexity affect the way Big Data is employed within the organization? As data is getting bigger, does it make them any smarter, considering the industry specific conditions?

The idea that companies must learn to leverage information about their surrounding world is nothing new, but rather considered a prerequisite in order to stay competitive. To learn about market developments, share the information with appropriate personnel, and adapt offerings to a changing market are in fact the general philosophy behind the concept of 'market orientation' (Jaworski, Kohli and Sahay, 2000), a cornerstone in the field of marketing and strategic management (Gebhardt, Carpenter and Sherry, 2006). Its positive impact on business performance is widely acknowledged and has been established in various studies (Gotteland, Haon and Gauthier, 2007). One of the aims of using Big Data, providing extensive and detailed information about the surrounding world, should thus arguably be to become more market oriented. Hence, we find it interesting to look into the current state of Big Data usage by employing a market orientation perspective, in order to capture both its internal and external implications for a company.

1.1 Purpose and Research Questions

In order to bridge the identified gap in existing literature concerning how Big Data relates to market orientation, the purpose of our research is split into two parts: one theoretical purpose and one empirical purpose.

The theoretical purpose of our research is to investigate how Big Data exploitation relates to and affects the extent of market orientation in organizations. To fulfill this theoretical purpose, the empirical area chosen is the FMCG suppliers' usage of Big Data in Sweden. Due to few studies

conducted in this area there is a lack of knowledge, and in order to cover the empirical gap, our empirical purpose is to create knowledge and deeper understanding of how suppliers in the FMCG industry are utilizing Big Data as of today and how their current practices will be affected as the data landscape evolves.

The reason to why we chose to study this specific empirical area is because the FMCG suppliers are as of today working with many various data sources and has a rather standardized way of exploiting it. During the spring of 2016, a new Big Data source, namely loyalty card data, will enter the FMCG supplier's data market. Therefore, we find this situation interesting to study in order to see how the industry will be affected when a new type of data, predicted to be able to create deeper insights and more value for both suppliers and retailers, comes into the picture.

In order to fulfill both the theoretical purpose and the empirical purpose, the study aims to answer the four following research questions:

(R1) How are insights about the market generated by means of Big Data?

(R2) How does Big Data affect how insights are disseminated throughout the organization?

(R3) How does Big Data affect how the organization takes actions based on the insights generated and disseminated throughout the organization?

We also have a more future focused question centering on the development of Big Data practices and how this change can affect market orientation. In this case, the change concerns the introduction of loyalty card data:

(R4) How will loyalty card data affect the current Big Data practices of the organization?

1.2 Delimitations

In order to facilitate the practical implementation of the study, Sweden has been selected as the geographical area of interest. Also, since we to the utmost degree wanted to meet the interview respondents face-to-face, we limited the study to companies with head offices in Stockholm and Gothenburg, with two exceptions. Seven out of eleven interviews were held in Stockholm, two were

held in Gothenburg and the remaining two were held over telephone. Since all case companies distribute their products nationwide, we assume that this will not affect the result of the research.

Also, based on recommendations from the pre-study respondents, eleven category leaders[*] representing various categories form the base for our study, as these companies serve as good examples of players who have come furthest in the implementation and usage of Big Data. Due to time and resource limitations from the case companies' side, they could only offer us one interview per organization and therefore, the respondents' answers cannot be generalized for the entire company. Similarly, since we only have interviewed eleven companies for our research, our sample is not representative for all FMCG suppliers on the Swedish market.

Finally, our focus on Big Data relates to a market perspective in this specific industry, namely the data organizations gather to better understand their consumers, customers and competitors. Therefore, the results do not shed light on the case companies' usage of Big Data in a general sense throughout all departments within the companies.

As concrete examples for our respondents to relate to, we have during the interviews showed them a 'data landscape' that was mapped out as a result of the pre-study. This helped us create a more comprehensive understanding of how and which data the case companies are utilizing. This implies that our results cannot be generalized to the exploitation of Big Data in other industries or markets.

1.3 Expected Contribution

With this research, the main expected contribution is to create a deeper knowledge and understanding of how the FMCG suppliers are utilizing Big Data as of today and how Big Data relates to and affect the market orientation of organizations. Due to the study's limited and not generalizable nature, the results should not be taken for granted. Therefore, in the final part of the research, we will discuss the results out of a broader perspective and present the conclusions drawn from our study, to provide an indication of relevant areas for future research.

1.4 Disposition

This study is divided into eight main chapters. This introduction is followed by a chapter presenting a background to Big Data, which is then followed by our conducted pre-study. In chapter four we

[*] For definition, see Appendix 1

present the theoretical framework used as a base throughout the research and in the analysis, in which the focus is on market orientation and its different perspectives. Subsequently, we describe the methodology used and we motivate the choices made along the way throughout the study. In chapter six we present our interview data in the form of empirical findings, which is followed by an analysis of the empirical results in chapter seven. In the last and eighth chapter, we present our conclusions, strategic and managerial implications as well as suggestions for future research.

2. A Background to Big Data in the Retail Sector

In this chapter, we will discuss Big Data in general and data in the retail sector in particular. This will provide a background to the thesis and an understanding of the topics discussed. The first part will present a background to Big Data in general, followed by definitions of the concept. The following part will discuss Big Data in the context of the retail industry, which will lay the foundation for how to approach the concept within the scope of this thesis. After that, we will go deeper into the effects and opportunities Big Data is claimed to provide, while the last section presents identified hindrances and issues.

2.1 Background to Big Data in General

Big Data as a concept started to go viral in 2011, although its origin remains uncertain (Mordret, 2015). Today the term is widely used and a subject dedicated to a vast amount of consultancy reports, but due to its novelty, the academic research within the field of business is limited. But while the creation and gathering of data has occurred for several years, with increasing amounts of bytes and accelerating speed, the focus is moving towards the actual insight and value creation - how to monetize the data at hand? Practitioners are moving the discussion from "big" to "smart" as the defining parameter, focusing on the insights rather than the volume (Gerard, Haas and Pentland, 2014). As technological advancements in both hardware and software have decreased the price for gathering, storing, as well as analyzing Big Data, the interest has spurred for challenges such as managerial issues, infrastructure, policies, and the competences needed (Manyika et al., 2011).

2.2 Definition of Big Data

There is no widely spread, overarching definition of what the term Big Data actually entails, even though it is commonly referred to as being made up of three dimensions: Volume, Variety and Velocity - "the three V's" (Chen, Chiang and Storey, 2012; Gandomi and Haider, 2015). Influential practitioners within information technology often use similar definitions (e.g. Gartner, n.d.). In a

comprehensive and influential McKinsey report concerning Big Data, Manyika et al. (2011) elaborated the definition, namely to "Datasets whose size is beyond the ability of typical database software tools to capture, store, manage and analyze". By purpose they made the definition subjective and unspecific since the technology is constantly moving forward, pushing the limit for how 'big' the datasets can be. They also argue that the needed amount of data is bound to differ across countries, industries, as well as companies, since these entities might have different tools and capabilities available to handle the data.

Among later contributions in order to define Big Data, the term Big Data Analytics is often used to capture the aspect of value creation the data is supposed to generate. For example, do Chen et al. (2012) add the term 'value' to the original three V's, while Kwon, Namyeon and Bongsik (2014) define Big Data Analytics as "technologies (e.g., database and data mining tools) and techniques (e.g., analytical methods) that a company can employ to analyze large scale, complex data for various applications intended to augment firm performance in various dimensions".

In this thesis we will use Manyika et al's (2011) definition of Big Data (see further details in Chapter 3: Pre-study), and view Big Data Analytics based on Kwon et al's (2014) definition of the concept.

2.3 Big Data in the Retail Sector

The retail industry has for decades been using information technology and data in order to boost profitability and productivity. Since the 1970s with the help of barcodes and Point-of-Sales data[*] and since the 1990s, store-level and supply chain data have been used to optimize distribution and logistics, as well as merchandise and management (Manyika et al, 2011). Today, many actors are becoming more sophisticated in the use of data, and the authors argue that Big Data levers applied to operations and supply chain will continue to reduce costs and increasingly create new competitive advantages and strategies to grow retailers' revenue. Especially the loyalty card data is mentioned to improve the effectiveness of marketing as well as merchandising, even though the ultimate value gain created by Big Data will depend on the ability to overcome barriers related to technology, talent, and organizational culture.

For manufacturers, Manyika et al (2011) argue that the rising volume and complexity of data put pressure on both storage, computing power, as well as analytical expertise, which makes it both necessary to recruit the right talent and to have an organization enabling these employees to

[*] Also called POS data. For definition, see Appendix 1

maximize their contributions. While there is potential for manufacturers to draw new insights and generate value from the use of Big Data, both in terms of productivity, efficiency, and quality, the authors argue that some companies are at a disadvantage. These are departmentalized companies with multiple IT systems, overlapping, and/or redundant data in different operations and divisions.

In terms of sharing Big Data between retailers and suppliers, the authors state that many retailers are reluctant to share due to competitiveness, even though there exist successful examples like Walmart, who pioneered the market with its vendor-managed inventory models. Tesco is another example of a grocery retailer selling data to its suppliers, which through its subsidiary Dunnhumby analyzes customer transactions connected to Tesco's loyalty card program. By doing so, they are able to offer better membership rewards to their customers, while also earning money on the suppliers wanting access to the shopper insights. (Platt et al., 2014)

2.4 Opportunities Created by Big Data

Mankins and Sherer (2015) argue that advanced analytics adds real value to companies by improving decision making. By incorporating technological capabilities, adapting decision making processes, and ensuring the employees use these tools, they argue that advanced analytic models can "incorporate the experience of an organization's best decision makers, focusing the evaluation on the most promising courses of action". Brock, Souza, Platt, and Dreischmeier (2013) also view enhanced decision making as one of the major benefits of Big Data, but in combination with four other applications (insight generation, improved business processes, upending of traditional value chains, and new data businesses) rather than in isolation.

Manyika et al. (2011) also pinpoint five overarching areas where Big Data can add value within organizations with implications for organizational design and management. These are:

1. C*reating transparency*, in order to make data more accessible to relevant stakeholders and between departments, and is also a prerequisite for the following levers in order to create value.
2. *Enabling experimentation to discover needs, expose variability, and improve performance.* Since much data about company performance can be collected in real or near real time, managers can use a scientific process of controlled experimentation (including the formulation of specific hypotheses), to understand the root of performance variability to make better decisions.

3. *Segment populations to customize actions*, i.e. targeting services or marketing to meet individual needs by using more specific segmentation that could be done in real time
4. *Replacing/supporting human decision making with automated algorithms*, which could improve efficiency and lead to valuable insights that would otherwise remain hidden.
5. *Innovating new business models, products, and services*. The authors lastly argue that Big Data can create value in a broader sense as it improves knowledge and the ability of innovation.

For the retail industry specifically, Manyika et al. (2011) have identified Big Data levers along the value chain in line with the above areas within the categories of marketing, merchandising, operations, supply chain, and for new business models. For this study, we find it most relevant to look into marketing and merchandising* and these levers are presented in Table 1.

Function	Data Lever	Description
Marketing	Cross-selling	A customer's demographics, purchase history, preferences, real-time locations, et cetera are used in order to increase the average purchase size
	Location based marketing	To targets consumers who are close to stores or already in them, enabled by "personal location data-enabled" mobile devices
	In-store behavior analysis	To improve store layout, product mix, and shelf positioning by analyzing in-store shopping behavior, e.g. by using image-analysis software connected to video-surveillance cameras
	Customer micro-segmentation	To track and leverage data on the behavior of individual customers, engaging in "personalization", rather than traditional segmentation
	Sentiment analysis	Follow up peer sentiment and recommendations in e.g. Social Media to follow the real-time response to marketing campaigns and adjust course accordingly
	Enhancing the multichannel consumer experience	The use of big data to integrate promotions and pricing for shoppers seamlessly for all channels
Merchandising	Assortment optimization	Deciding which products to carry in which stores based on local demographics, buyer perception, et cetera
	Pricing Optimization	To use complex demand-elasticity models to examine historical sales data to derive insights into pricing, including markdown pricing and scheduling
	Placement and design optimization	Optimizing the placement of goods and visual designs (e.g., end caps, shelves) by mining sales data at the SKU level

Table 1: Big Data Levers for the Marketing and Merchandising departments within Retail (Manyika et al., 2011)

* See Chapter 5: Methodology for explanation

2.5 Issues to Overcome

In terms of issues concerning value capturing of Big Data, there are several authors bringing up different obstacles that needs to be overcome (e.g. Cate and Mayer-Schönberger, 2013; Brown, Court, and McGuire, 2014). These issues are mainly covered by Manyika et al. (2011), who have identified five major areas that need to be resolved. These are:

1. *Data policies*, concerning for example privacy, security, and intellectual property, implying that the balance between privacy and utility must be taken into account.
2. *Technology and techniques*, since legacy systems and incompatible standards and formats prevent the ability of extracting value from Big Data.
3. *Organizational change and talent*, as the authors see that many organizations neither have the knowledge, structures nor incentives required to make the most out of the data.
4. *Access to data*, highlighting the need for efficient markets for trading and sharing of data.
5. *Industry structure,* implying that industry structures should adapt in order to optimize value creation from a firm level as well as the economy as a whole. For example, the authors state that sectors with relatively low competition and/or highly concentrated profit pools are slower to adapt in order to embrace the advantage of Big Data.

2.6 Summary and Connection to Market Orientation

While the academic literature within the field of Big Data often discusses the concept from a technical perspective, focusing on how to succeed with the analytics (e.g. Chen et al. 2012; Davenport, Barth and Bean, 2012; Gandomi and Haider, 2014), there is less literature dealing with the topic from a practical point of view. For the retail and FMCG industry in particular, even less literature critically examines how Big Data is implemented and used in practice. As such, Manyika et al.'s report from 2011 is still one of the most comprehensive reports on the topic, even though it is several years old in a field of rapid development. Since the literature to a large extent revolves around value creation in terms of efficiency gains, but also improved offerings towards the customer, we find it relevant to study the whole chain from insight to action to deepen the knowledge of the subject. Based on this literature review combined with the pre-study (see next chapter), it was decided to examine this through the lens of market orientation. By doing so, we believe we can shed new lights to the practical implications of Big Data, and the insights it is supposed to generate.

3. Pre-study

Since the aim with the research has been to explore the practical implications of Big Data by looking into the FMCG industry, we conducted a pre-study in order to gain deeper insight into the current state of their data usage. By doing so, we were able to capture a relevant angle both from a practical and academic perspective. In the following section we will start by discussing the aim of the pre-study more in detail, followed by how we designed it. Thereafter, we present our findings, conclusions and the derived research questions. Lastly, we will present additional effects on the main study.

3.1 The Aim of the Pre-study

There are several reasons to why we saw a need for a pre-study before we continued with our research. First of all, the research on Big Data within the Swedish FMCG industry is limited as of today. Also, even though there is a vast amount of consultancy reports dealing with the subject of organizational implications linked to Big Data, most of them deals with the retailer perspective rather than the manufacturer's. By conducting a pre-study, we were able to gain a deeper understanding of the current situation within the industry, learn about the problem areas, and possible opportunities identified by the interviewed practitioners. As such, the pre-study helped us to focus our research questions, find a relevant empirical area to center our case on, and thus, make it relevant for both practitioners and academics. Secondly, we wanted to map out the data landscape as of today, in order to better understand the current situation of the industry. This landscape will guide us in the main study, both during interviews and the following analysis.

3.2 Design of Pre-study

In the pre-study, we used the knowledge from our previous work for IRi as a foundation, but since this is a field of rapid development, we wanted to update our knowledge about the industry. Also, since our work for IRi solely contains empirical findings from the FMCG suppliers and their view of their current data usage, we wanted to complement these with insights from practitioners with other angles. Based on this, we approached the pre-study from an 'outside-in' perspective in which we spoke to researchers, professors, as well as consultants. During the interviews we talked generally about the data usage, but also about their views on what direction the industry is moving in terms of Big Data. In the pre-study, we also studied some documents and reports we were given from the respondents. This complementary material together with the conducted interview data served as a basis for the pre-study findings and conclusions. See Table 2 for a complete list of the interviewees in the pre-study.

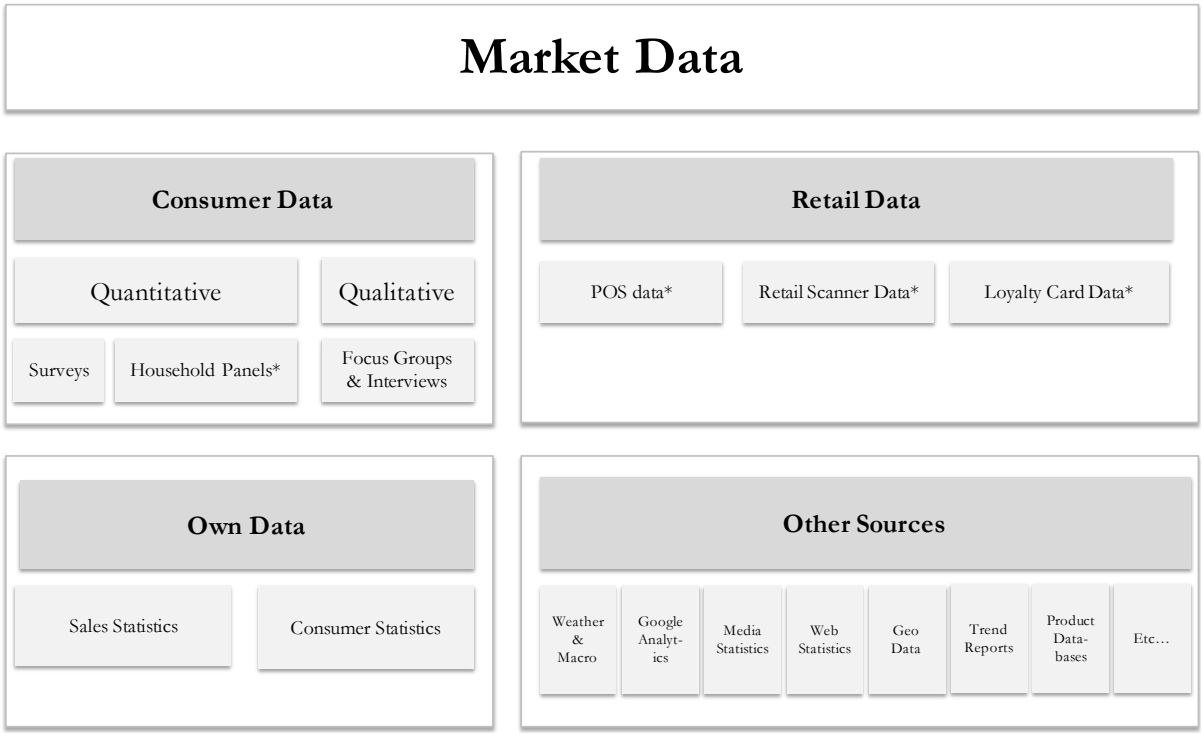
Date	Interviewee	Position	Company	Location, Duration
2016-01-12	Johan Hallin	Retail Director	IRi Lentus	IRi, 90 min
2016-01-27; 2016-02-02; 2016-03-02	Bo Ekström	Senior Consultant	Movement Consulting	Movement Consulting, 60 min each
2016-02-02	Johan Kaij	CEO & Senior Consultant	Movement Consulting	Movement Consulting, 60 min
2016-02-09	David Törnqvist	Principal Consultant	Recoordinate	Recoordinate, 60 min
2016-02-15	Cecilia Meldahl	Director of consumer and campaign insight	ICA	Telephone, 30 min
2016-02-18	Niclas Öhman	Partner & Head of R&D	Nepa	Nepa, 60 min
2016-02-18	Fredrik Lange	Assistant Professor at the Department of Marketing and Strategy	Stockholm School of Economics	SSE, 45 min

Table 2: List of pre-study interviewees

The pre-study followed the methodology of a qualitative approach. In accordance with Bryman and Bell (2015), the interviews were held with practitioners well knowledgeable about the research topic in a semi-structured manner. The duration of the interviews varied between 30 and 80 minutes and all, except for one, took place at the interviewee's office face-to-face. The exception was a telephone interview, due to the interviewee's high workload and time limitation. The pre-study comprised nine interviews with seven respondents. One interview was held with two persons at the same time and one of the respondents contributed to the pre-study in three meetings. Both of us researchers were present at all interviews and the face-to-face interviews enabled interaction between us and the respondents. Extensive notes were taken during the interviews, which were also recorded and then listened to in order to double-check the notes.

3.3 Findings

From the pre-study, we got a more complete picture of the data sources Swedish FMCG suppliers currently utilize to understand their market. Our basic knowledge was developed by the interviews and the distributed reports and documents, which resulted in our own mapping of the data landscape. The purpose of the mapping was to get a clearer understanding of the FMCG suppliers' 'data jungle' and the existing data sources. See figure 1 for a detailed overview of the data landscape.



* For definitions, see Appendix 1

Figure 1: The Data Landscape

We have divided the data into four subgroups: consumer data, retail data, own data, and other data sources. By *consumer data*, we refer to data the consumers share by actively participate in a survey or study. When talking about *retail data*, we mean the data that origins from the retailers' cash registers and is offered to the suppliers in different forms and settings. *Own data* is the data generated by the suppliers themselves and *other data sources* is referred to as all other types of data, which for example can be paid standard reports, weather data or interactions in social media.

The second finding from the pre-study combined with the Big Data literature review, was that there is a lack of distinct definitions of Big Data and data sources in general. Therefore, there was a need to create a clear and distinct definition of what we refer to when we are using the term Big Data in this particular study. In line with the definition by Manyika et al (2011), we will consider our data landscape to be Big Data within this particular industry, since the sources *together* form a dataset "whose size is beyond the ability of typical database software tools to capture, store, manage and analyze", even though several of the individual data types, cannot be viewed as Big Data on its *own*.

The third finding is that the Swedish FMCG industry is relatively far behind when comparing with other geographical markets in terms of exploiting Big Data and effectively integrating it into the day-to-day operations. All respondents have mentioned the UK as a front running market, with Tesco

and its subsidiary Dunnhumby as the leading actor. The interviews indicated that the Swedish FMCG industry is catching up in that sense that ICA, the biggest grocery store chain on the Swedish market with a market share of around 50 percent, is rolling out loyalty card data to their suppliers during the spring of 2016. Interestingly, the respondents have diverging views concerning the Tesco case, whether or not it is a successful example of data exploitation in the FMCG industry. The positive view argues that the Tesco case is a role model for the Swedish industry, while the critical view argues that Tesco squeezes out as much as possible from existing consumers, forgetting the importance of attracting new. Even though they have increased the profitability in each shopping basket, they argue that Tesco in the end forgot the consumer value, resulting in a decreased consumer base.

Finally, the main finding from our IRi report was that there is too much data spread on too many platforms. The pre-study respondents supported this finding and argued that the suppliers are in need of a more effective data process. It has also been shown that the data usage in the Swedish FMCG industry is rather standardized, using the retail scanner data from Nielsen out of habit.

3.4 Conclusions of the Pre-study

After reviewing the Big Data literature and conducting this pre-study, it can be concluded that the Swedish FMCG industry is in a phase of development and practitioners within the area are curious about how the Swedish market will evolve in the coming years. More user-friendly data tools are elaborated and new data types are evolving in a rapidly changing data environment. Based on the findings from the pre-study and the Big Data literature review, it was concluded that Big Data in relation to market orientation would be the research area to focus on throughout the study.

Additionally, we have seen that the FMCG suppliers are dealing with a lot of different data sources as of today and the usage of Big Data is rather standardized. This, in combination with ICA rolling out loyalty card data to its suppliers, aroused our interest to examine how this will affect the Swedish FMCG industry as a whole and how the suppliers believe it will affect their business. This interest resulted in our choice of empirical case to investigate in the main study, namely:

To study the FMCG industry, an industry already using a substantial amount of data from various sources with a standardized way of exploiting it, by examining how and to what extent the industry and the suppliers are affected when a new data source, loyalty card data, comes into the picture.

This resulted in the emergence of our four research questions:

(R1) How are insights about the market generated by means of Big Data?

(R2) How does Big Data affect how insights are disseminated throughout the organization?

(R3) How does Big Data affect how the organization take actions based on the insights generated and disseminated throughout the organization?

(R4) How will loyalty card data affect the current Big Data practices of the organization?

3.5 Additional Effects on the Main Study

The pre-study had two additional effects on the main study. Firstly, the respondents gave us recommendations to focus our study on FMCG category leaders, since they often have come further in the implementation and usage of Big Data. Secondly, the pre-study participants also guided us to focus the interviews of our main study to the marketing and sales departments, since these are often the departments working with consumer insights generated from Big Data. Therefore, it was important to get in contact with the right companies, and the respondents gave us recommendations for which category leaders that could be of interest for us. They also helped us to get an important first point of contact, by giving us contact details to relevant industry professionals as well as the allowance for us to refer to them.

4. Theoretical framework

In this section, an overview of the market orientation literature will be presented. This will work as the main theoretical framework that will be used in order to analyze the empirical findings in this study. The theoretical framework has been divided into six parts. The first part will present the concept of market orientation. The two following parts will highlight two different approaches of market orientation, namely the behavioral and the cultural. After that a comparison of the perspectives is presented, followed by new ideas about the concept and finally, a summary of the theoretical framework that will show how the theory will be used in this study.

4.1 The concept of market orientation

The foundation of a systematic development of various theories to describe the concept of market orientation took place in the early 90's, when two seminal studies were done by Kohli and Jaworski (1990) and Narver and Slater (1990). At that time, market orientation was at the very heart of modern marketing management and strategy, but there was no specific guidance for what the concept entailed; no valid measure had been developed to assess the influence of market orientation on business performance (Narver and Slater, 1990; Kohli and Jaworski, 1990). Therefore, a common purpose of these two studies was to delineate the concept of market orientation.

Scholars researching the topic of market orientation are still not in agreement of what exactly market orientation is. There are some differences in the precise definition of the concept, but the general philosophy is that companies learn about market developments, share the information with appropriate personnel and adapt offerings to a changing market (Jaworski et al., 2000). Griffiths and Grover (1998) divided market orientation into two different perspectives, the behavioral and the cultural. Even though the theoretical models of market orientation differ, three successive meta-analyses have shown a significant and positive relation between the extent of market orientation and business performance (i.e. Cano, Carrillat, and Jaramillo, 2004; Kirca, Jayachandran, and Bearden, 2005; Ellis 2006),

4.2 The Behavioral Approach of Market Orientation

The behavioral approach of market orientation was developed by Kohli and Jaworski (1990) and in their definition of the phenomenon, they refer to a specific group of organizational behaviors. Griffiths and Grover (1998) mean that various authors' definitions within the behavioral approach have in common that they are externally focused while centering on the organization's behavior. The customer is a core component of the definition (Griffiths and Grover, 1998) and according to Jaworski and Kohli (1996) the authors, either implicitly or explicitly, acknowledge the importance of being responsive to customers. Kohli and Jaworski (1990), i.e. the founders of the behavioral approach, argue that market orientation consists of three elements: intelligence generation, intelligence dissemination and responsiveness.

4.2.1 Market Intelligence

Market intelligence is the starting point of market orientation and refers to the activities leading to an understanding of customers' current and future needs and preferences, as well as an analysis of

the exogenous factors affecting them. Government regulation, technology, competitors and other environmental forces are examples of factors affecting customer needs. As stated, market orientation is not only about the customers' current needs, it is also important that organizations identify the future needs of their customers, since it often takes several years to develop a new product. Thus, the assessment of customers' needs is a cornerstone of market orientation, but that does not imply that it is easy for organizations to define their customers. (Kohli and Jaworski, 1990)

Defining the customer

FMCG suppliers have two different type of customers to adapt to and according to Kohli and Jaworski's (1990) study, executives of companies in this industry indicated that it is critical for them to understand the needs of both the retailers and the end consumers. The retailers are their customers through which the FMCG suppliers reach their end consumers, who actually consume the products. Kohli and Jaworski (1990) also highlight the power balance between the retailers and the manufacturers, stating that the retailers' power over the manufacturers has been growing over time. This is explained by the retailers' access to scanning data as well as an increased amount of brands in stores, spurring the competition among the manufacturers. In Kohli and Jaworski's (1990) research, one executive from the supplier side stated the importance of keeping the retailers satisfied to make sure they promote the suppliers' products. This is an interesting point of view for our study, since our case focuses on the suppliers in the FMCG industry, seeking to answer our research questions and discuss how the data usage affects and relates to the market orientation of organizations.

Collection of insights

Organizations can generate market intelligence in both formal and informal ways, and it can involve collecting primary data or secondary sources. It includes everything from meetings and discussions, various types of analysis about customers and sales, to market research and survey collecting. The generation of market intelligence is a responsibility of all individuals and departments throughout the whole organization and not only of the marketing department. (Kohli and Jaworski, 1990)

To sum up, the important thing about market intelligence is that it is not solely about acquire customer opinions, it is also about being able to make a careful analysis and interpret the forces affecting the customers' needs and behavior. (Kohli and Jaworski, 1990)

4.2.2 Intelligence Dissemination

The second element of market orientation is intelligence dissemination, which is the sharing of the generated insights across departments in the organization. The study of Kohli and Jaworski (1990) showed that in order to respond effectively to a market need, it requires the involvement and participation of the whole value chain throughout an organization: R&D designs and develops new products, manufacturing produces the products, finance is responsible for funding the activities and so on. They argue that it is of high importance to communicate and disseminate the intelligence in order for the organization to adapt to market needs. When market intelligence is disseminated effectively, it serves as a common ground for coordinated actions of various departments (Kohli and Jaworski, 1990).

Further, the dissemination of market intelligence can be formal and informal, both of importance for the organizations. Informal dissemination can as for example take place in the hall over a talk between some colleagues, which Kohli and Jaworski (1990) argue is an extremely powerful way to keep the employees up to date about the customers.

4.2.3 Responsiveness

The final part of market orientation is responsiveness to market intelligence, which is the actions taken in order to respond to the generated and disseminated market intelligence. This is an important part of the market orientation elements; it is not enough to solely generate and disseminate market intelligence, the organization also needs to take action upon the acquired insights in order to accomplish something. (Kohli and Jaworski, 1990)

Organizations are considered being responsive when they select target markets and offer products/services that meet the needs of these customers, while also producing, distributing, and promoting products/services in a way that leads to satisfied end consumers. As also stated for the other two elements of market orientation, all departments should participate in responding to market needs in order for a company to be market oriented. (Kohli and Jaworski, 1990)

4.3 The Cultural Approach of Market Orientation

Narver and Slater (1990) are the founders of the cultural approach and they define market orientation as an organizational cultural trait. They developed a conceptual model consisting of three behavioral components: customer orientation, competitor orientation, and interfunctional

coordination. The authors mean that an organization's willingness to create superior value for the customers results in these three behavioral components. In another study, Narver and Slater (1998) state that the basic assumption behind this approach is that the three behavioral components reflect an underlying organizational culture.

4.3.1 Customer Orientation

The customer orientation component is based on the desire to understand the customer's' needs and more specifically, it is "the sufficient understanding of one's target buyers to be able to create superior value for them continuously". A seller can create value to its buyer in two different ways, either by increasing benefits in relation to costs or decrease costs in relation to benefits. To understand where the market demand is derived, the sellers should understand the customer's economic and political constraints as well as they should have knowledge about the cost and revenue dynamics, both of their customers and their customers' customers. More explicitly, the seller should know their current and future customers, the customers' current and future wants as well as the underlying satisfiers behind those wants. (Narver and Slater, 1990)

4.3.2 Competitor orientation

The second component of market orientation is competitor orientation, which arose by a willingness to understand how one's competitors respond to the needs of the same customers (Narver and Slater, 1990). Narver and Slater (1990) define competitor orientation as the understanding of "the short-term strengths and weaknesses and long-term capabilities and strategies of both the key current and the key potential competitors".

4.3.3 Interfunctional coordination

The final component interfunctional coordination is based on the desire to coordinate the use of an organization's resources to offer superior value to the customers (Narver and Slater, 1990). More precisely, the authors refer to "the coordinated utilization of company resources in creating superior value for target customers". Further, the authors state that it is not only the marketing function that is responsible of value creation, since it requires contributions from every unit as well as cooperation and integration between the departments.

4.4 Comparing the Behavioral and the Cultural Perspectives

When comparing the cultural perspective with the behavioral, Griffiths and Grover (1998), in line with Narver and Slater (1990), mean that the cultural perspective describes market orientation as the culture rather than behavioral elements of an organization.

Several studies argue that the two perspectives are overlapping. As for example, Slater and Narver (1994) stated that the behavioral perspective is inherent in the cultural. They mean that Kohli and Jaworski's (1990) three elements of market orientation are all involved in each of the elements of Narver and Slater's (1990) components. The linkage between the perspectives is supported by Deshpandé and Farley (1998), whose study showed that the behavioral and cultural perspectives are comparable and compatible. Griffiths and Grover (1998) state that "/.../ the substantive conclusions reached by each perspective is applicable to the other and supportive of, if not complementary to, each other". While these authors agree that the two perspectives are comparable and compatible, Homburg and Pflesser's (2000) findings indicate that the culture of market orientation precedes the behaviors characterizing the market orientation of an organization. The authors distinguish the two perspectives and state that the behavioral perspective refers to market orientation as specific behaviors concerning generation and dissemination of market intelligence and based on this, how organizations respond to its customers. This while the cultural perspective is related to more fundamental characteristics of an organization. By referring to the study of Homburg and Pflesser (2000), Gotteland et. al (2007) argue that the discussion regarding the integration of the two perspectives is largely resolved.

According to many scholars within the subject of market orientation, the phenomenon is a continuum (e.g. Kohli and Jaworski, 1990; Narver and Slater, 1990). Therefore, Kohli and Jaworski (1990) state that an appropriate measure of market orientation is to assess the degree to which a company is market oriented, rather than conceptualizing if a company is market oriented or not.

4.5 Evolution of the Concept of Market Orientation

4.5.1 New Dimensions and New Approaches

Several studies have been conducted to improve the understanding of market orientation with the objective to extend the concept, providing a more complete grasp of the organization's environment (Gotteland et al., 2007). Maignan and Ferrell (2004) has for example formalized a framework called

"stakeholder orientation", which is an extension of market orientation, including all agents affecting the organization's processes and performance. Gotteland et al. (2007) lift this perspective as relevant, but argue that it needs to be improved by further research in order for the relevant stakeholders of an organization's strategic direction to be identified.

Another example of a study extending the concept is the research by Gatignon and Xuereb (1997), who suggested that a "technology orientation" component should be added to the concept of market orientation. A technology-oriented company is defined as a firm "with ability and will to acquire a substantial technological background and use it in the development of new products. Technology orientation also means that the company can use its technical knowledge to build a new technical solution to answer and meet new needs of the users" (Gatignon and Xuereb, 1997). Further, the authors question the "interfunctional coordination" as a component of market orientation, rather viewing it as an influential aspect of the organizational structure. This multidimensional conceptualization of market orientation is supported by Voss and Voss (2000). Both these studies rather use the term "strategic orientation" when referring to the three orientations (customer, competitor, and technological).

4.5.2 Market-Driven versus Market-Driving

Being market orientated has often been interpreted as being market-driven, implying that the organization adapts its supply to the consumer demand. Jaworski et al. (2000) has refined the market orientation concept and argue that there are two complementary approaches: a market-driven approach and a driving-markets approach.

According to Jaworski et al. (2000), being market-driven refers to "learning, understanding, and responding to stakeholder perceptions and behaviors within a given market structure", while being market-driving refers to "changing the composition and/or roles of players in a market and/or the behavior(s) of players in the market" (Jaworski et al., 2000). The authors argue that a business should preferably pursue both strategies since they often need to manage both present business opportunities as well as plan for the future.

4.6 Theoretical Connection to Research Questions

Newer dimensions, such as stakeholder and technology orientation are interesting aspects of market orientation. However, when investigating how Big Data relates to and affects market orientation, our study will focus on Kohli and Jaworski's (1990) behavioral approach investigating the aspects of

market intelligence, intelligence dissemination, and responsiveness. This study will be based on these three aspects mainly because our conducted pre-study showed a link between these and how the FMCG industry is using Big Data as of today, but also due to Homburg and Pflesser's (2000) establishment that the culture precedes the behaviors that characterize a market-oriented organization. Thus, the presented theory lays the foundation for the rest of this research and will work as a framework in the analysis when we approach the empirical data to answer our research questions:

(R1) How are insights about the market generated by means of Big Data?

(R2) How does Big Data affect how insights are disseminated throughout the organization?

(R3) How does Big Data affect how the organization take actions based on the insights generated and disseminated throughout the organization?

(R4) How will loyalty card data affect the current Big Data practices of the organization?

The market intelligence variable will be used in order to answer *(R1)*, the intelligence generation variable will help answering *(R2)* and the responsiveness parameter will help answering *(R3)*. *(R4)* focuses on the development of Big Data practices, in our case the introduction of loyalty card data, and due to the novelty of this data the market intelligence parameter will mostly help answering this question, since the two other parameters are dependent on that intelligence has already been generated.

5. Methodology

In the chapter, we will present our research design and the methodological choices that has been made when collecting as well as analyzing the data. In the end, there will be a discussion regarding the quality of the research in terms of the study's reliability and validity.

5.1 Research Design

As of today, there is a research gap in the literature concerning the usage of Big Data and how it affects and relates to market orientation of organizations. The aim of this study is therefore to contribute to existing research as an attempt to bridge this gap within the literature. The aim is also

to create knowledge and a deeper understanding of how the chosen industry is utilizing Big Data as of today, and how their current practices are affected when the data landscape evolves. This is an exploratory study, and to contribute to the knowledge gap in this research area, we have chosen to apply a qualitative research method rather than a quantitative (Merriam and Nilsson, 1994). The choice to conduct a qualitative study is further motivated as our aim is to gain a deeper understanding of organizational behavior and processes (Malhotra, 2004).

To enable an understanding of the relation between Big Data and market orientation, this study has followed an inductive approach as it generates new theory rather than testing existing ones (Bell, 2006). The choice of an inductive approach is also to avoid the complexity and constrained nature of making assumptions from the start, instead moving between theory and data while the knowledge is built up during the process (Bryman and Bell, 2015).

This study has followed a case study methodology. This is a good choice when the study investigates "how" and "why" certain events occur, and when the research focuses on contemporary events in real situations (Yin, 2013). Since our case meets all these parameters, we find this methodology suitable for our research. Our choice of method is further strengthened by Eisenhardt (1989), who states that case studies are recommended when the study aims to provide a description of an event, and when the study involves a relatively new topic, which Big Data can be considered to be. The case study methodology has been criticized by for example Abercrombie, Hill and Turner (1984) who argue that it only provides hypothesizes and therefore is not scientifically generalizable, and as such has a limited ability to influence research. But since our aim with the study not is to provide generalizable conclusions, but rather act as a basis for future research, we find the case study methodology to be suitable. This is further supported by other scholars who argues that the method should be seen as a strength (Dubois and Gadde, 2002) and as a valid research method (Flyvbjerg, 2006).

5.2 Case Selection

5.2.1 Selection of Cases

The empirical area this study focuses on is the suppliers in the FMCG industry. According to Manyika et al. (2011), the manufacturing sector has been an early and intensive user of data in order to improve its business, and the authors believe that the industry can experience further substantial

gains through the usage of Big Data. Therefore, we find the FMCG industry to be an interesting empirical case to study in order to fulfill the purpose of this study.

To gain a deeper understanding of the FMCG industry and the organizational implications of Big Data Analytics among the FMCG suppliers, a pre-study was conducted[*]. The pre-study included interviews with consultants and experts in the industry, well knowledgeable about the topic. The pre-study respondents were also used to establish contacts with people for the main study in accordance with the snowball sampling method (Bryman and Bell, 2015).

Even though the pre-study served as a basis to find relevant cases to include in the main study, it did not necessarily mean that these contacts were available for interviews. Due to the scope of this research, we were not able to secure organizations to be part of the study in advance and therefore, the selection of cases turned out to be a convenience sample (Onwuegbuzie and Leech, 2007). The initial idea was to study a few players more deeply by interviewing several employees at each organization, but due to time limitations among the suppliers, we were only offered one interview per company. Out of 16 contacted FMCG suppliers, all responded, but only 11 had resources available to give us an interview, resulting in 11 interviews in total. All interviews will be handled anonymously throughout the study.

To be able to compare the cases, all cases were chosen mainly based on two criteria: 1) the player had to be a FMCG supplier acting on the Swedish market and 2) the player had to be a category leader within at least one category in order to ensure a sufficiently high level of data usage. These criteria are based on our conducted pre-study, which showed that the category leaders have made the most progress in the exploitation of Big Data within the industry. This is supported by Ritchie, Lewis, Nicholls, and Ormston (2013) who mean that qualitative research requires samples that include respondents who are of such a character that they can contribute to the topic of research. They further refer to this criterion as 'symbolic representation' as sample units are chosen on the premise that they 'represent' and 'symbolize' features relevant to the research.

5.2.2 Selection of Interviewees

In the initial contact with the companies, we explained the focus area of our study, and if needed, we were redirected to a more suitable (knowledgeable) person within the company. Since the study focuses on how the suppliers use Big Data and how it is related to market orientation, our chosen

[*] See Chapter 3 for more information regarding the pre-study.

interviewees were mainly people in charge of consumer insights, since they were considered to be most knowledgeable within this area. All of them were representatives from the marketing or sales department. The choice of interviewees is supported by Ritchie et al. (2013) who argue that the sampling principle used in this study motivates a more biased selection process than for example a quantitative study, which requires random selection of units to achieve a statistical representation. Thus, it could be considered to be sufficient to only talk to one person per company in order to gain a good understanding of the research topic. To see a complete list of the main study interviewees and their responsibilities, see Table 3 in the chapter for empirical findings.

5.3 Data Collection

After conducting the pre-study and an initial gathering and reflection of theory, research questions that aim to capture the essence of the research were elaborated. The interviews were of semi-structured manner, which is in accordance with Quader (2007), who states that interviews should be semi-structured when the data is characterized by general information within a certain topic. Bryman and Bell (2015) also recommend the choice of semi-structured interviews when conducting a qualitative research. Each interview originated from the same structure and set of questions, but we let the interviewees stretch their answers on relevant topics and asked follow-up questions when considered suitable. To increase relevance, the set of questions were revised and improved during the data collection process.

To create a sense of security, nine out of 11 interviews were held face-to-face at the interviewee's offices, based on their choice of location (Trost, 2010). Two interviews were held over telephone due to the geographic location, as their offices were situated more than 600 kilometers away. Both of the authors partook in all interviews to capitalize on insights in the data (Trost, 2010) and in accordance with Eisenhardt's (1989) recommendations, this enabled us to take on two different roles. One of us interviewed, and the other had a more reflective role while taking notes. Additionally, all respondents gave us approval to record the interviews, which enabled us to be more focused during the interview, come up with relevant follow-up questions and to reflect on the interviewee's behavior (Bryman and Bell, 2015). The interviews lasted for between 60 and 120 minutes and were held in Swedish.

Finally, in order to decrease potential bias, the interviews were summarized within 24 hours individually, and thereafter discussed together. In order to facilitate the analysis, all interviews were transcribed word by word into written documentation.

5.4 Analysis of Data

When analyzing the gathered data, the process of grounded theory was used, which Bryman and Bell (2015) recommends for qualitative research. Grounded theory is a process when the analytical work is performed iteratively in parallel with data collection and theory development (Ritchie et al., 2013). This iterative methodology implies that during the process, we have developed analytical categories as interesting phenomena have been revealed, and continued with this work until we have considered the identified categories to be depleted (Ritchie et al., 2013). This methodology for conducting qualitative research is further supported by Eisenhardt (1989).

5.5 Quality of Research

According to Flick (2014) there are several (variously well) developed methods to ensure the quality of quantitative research, while a method for evaluating qualitative studies have not yet been fully explored. Concerning the criteria for assessing the process and results of qualitative studies, there are according to Flick (2014) foremost two alternatives the literature has focused on. The first option is to apply the classical criteria consisting of validity and reliability to the qualitative research, and the second option is to develop a new "method-appropriate" criteria, aiming to replace the validity and reliability criteria. But according to Flick (2014), none of the two alternatives has given a complete satisfactory solution to the problem of grounding qualitative research. The chosen alternative for assessing this study has fallen on the classical criteria, why we discuss the quality of our study through the measurements reliability and validity.

5.5.1 Reliability

According to Flick (2014), the reliability in qualitative research needs explication in two ways. First of all, reliability can be increased by interview training and by performing test interviews in order to check the interview guides. Unfortunately, in addition to the interview training we got from conducting a pre-study, we did not have the time to participate in this type of training.

Second of all, the origin of the data should be formulated and documented properly in order to make it possible to differentiate between a statement of the subject and the interpretations by the researchers. Further, to increase the comparability of the interviewers' notes, conventions for how to take notes should be established. Finally, the more detailed documentation, the greater reliability of the study. Since all interviews were recorded, notes were taken during the interviews and later also transcribed word by word, we have tried to fulfill the reliability criterion as good as possible. We

have also added an appendix (see Appendix 1), showing our translation of original citations to further increase the transparency of the study. (Flick, 2014)

5.5.2 Validity

The concept of validity deals with the question whether the researchers actually see what they think they see (Kirk and Miller, 1986). There are two aspects to consider, one is the production of data, and the other is the presentation of the phenomena and the conclusions drawn from them (Flick, 2014).

Concerning the production of data, the main issue is whether the interviewee has had any reason to construct a biased version of the reality, consciously or unconsciously. To avoid this, it is of importance for the interviewers to analyze the interview situation in order to find signs of this type of deformation. When performing our interviews, we have used open-ended questions in order for the interviewees to answer without any influence from us. We also gave the interviewees plenty of time to answer the question without any interruption. Moreover, in order to avoid biases of the reality, we did not share any answers or thoughts from other interviewees. (Flick, 2014)

The other aspect concerns the presentation of the results. One of the main risks of this aspect is that the presentation of the identified phenomenon found in the data is interpreted differently by the interviewer, compared to other individuals investigating the same material. Since the nature of in-depth interviews is both subjective and context-specific, it is almost impossible to achieve total objectivity in a qualitative study. However, we have tried to reduce the risk of misinterpreting the data in several ways. First, both of us researchers analyzed and interpreted the data individually, followed by a discussion where we compared our views Furthermore, throughout the whole process when analyzing and presenting the data, we have tried to be clear when viewpoints solely are mentioned by one person. (Silverman, 2013)

Finally, in this type of research, you cannot avoid the fact that the analysis has more subjective elements. However, we have tried to produce, present and interpret the data as naturally as possible in order to increase the validity of this study.

6. Empirical Findings

6.1 Description of the Respondents

Table 3 shows a short summary of all the respondents represented in this study. Due to anonymity reasons, each company has been given a code name ranging from Supplier A to K, which will be used from now on in order to indicate which supplier we are referring to. Similarly, each respondent will be denoted by the letter "E" (short for Employee), and a lowercase prefix indicating which supplier they are working for. We have for anonymity reasons also chosen to remove any indication of which category each company are present in.

Company	Employee*	Profession	Date	Location, Duration
Supplier A	E_A	Sales Insight Manager	2016-04-15	Telephone, 60 min
Supplier B	E_B	Consumer & Shopper Research Manager	2016-04-14	At Supplier B, 60 min
Supplier C	E_C	Senior Category Manager	2016-04-12	Telephone, 60 min
Supplier D	E_D	Business Development Manager	2016-04-13	At Supplier D, 60 min
Supplier E	E_E	Category Manager	2016-04-08	At Supplier E, 60 min
Supplier F	E_F	Customer Marketing Manager	2016-04-11	At Supplier F, 150 min
Supplier G	E_G	Customer Marketing Manager	2016-04-06	At Supplier G, 60 min
Supplier H	E_H	Category Analyst & Planner	2016-04-12	At Supplier H, 60 min
Supplier I	E_I	Nordic Category & Shopper Insight Manager	2016-04-08	At Supplier I, 60 min
Supplier J	E_{J1}	Nordic Insight Manager	2016-04-06	At Supplier J, 60 min
Supplier J	E_{J2}	Digital & Social Media Manager	2016-04-06	At Supplier J, 60 min
Supplier K	E_K	Category Manager	2016-04-18	At Supplier K, 180 min

Table 3: List of main-study case companies and interviewees

6.2 Big Data Today

6.2.1 The Data Landscape

The information bought or collected by all interviewed companies are closely corresponding to the data landscape we developed during the pre-study. The overall aim with the data usage seems to be quite similar for all the interviewed suppliers, as E_A formulates:

"/.../ t is about understanding our customers in order to reach the consumer. And to deliver something to our customers in order to create a 'win-win-win' situation through the whole chain so to speak. /.../ and today the focus revolves a lot around profitability, so we need to understand how different products contributes to the profitability of our customers. Because otherwise we won't reach our consumers anyhow."

Retail Data

Retail scanner data seems to be the data source most extensively used by the responding suppliers, and is bought on a continuous basis, even though there are some minor differences in continuity of the deliveries. E_C mentions Nielsen data as a "hygiene factor", E_D uses the term "life blood", and E_F says:

"We are quite spoiled with Nielsen data. We have deliveries basically… We are used to have the data when we need it. It is probably a lot about habits. What one is used to work with"

The retail scanner data is used to see how the company is performing against their competitors and the category overall, since it for example shows developments in market shares, sales, and distribution. For all respondents, the retail scanner data is used within both marketing, category management, as well as sales.

The importance of POS data is varying slightly more among the responding companies. E_B does for example say that they buy POS data regularly, while the majority of the respondents buy it on an ad hoc basis. Further, all respondents say that POS data is negotiated by respective Key Account Manager (KAM), and is mostly used by the sales departments. According to E_H it is very operational, since the field salesmen can follow up performance in their district. E_G says they get it as part of their agreement with the retailers, but they use it rather on a project basis than as part of every salesman's daily routine. Further, when discussing POS data, E_H says that even though it is voluntary whether to buy it or not, it is expected of them to do so. When asked what would happen if they

would not buy the POS data, E_H answers that it would have a negative effect on their customer relation.

E_D highlights the cost of using it as a reason for less frequent buys, and also says that the level of detail provided in the POS data differs among the retailers. He/she further explains:

"If the POS had been more developed, no one would have bought Nielsen. Because there is a lot of frustration with Nielsen due to their monopoly perspective they have."

When developing the thought regarding Nielsen's monopoly situation, E_H mentions for example problems related to segmentation of categories, since Nielsen's segmentation is the business standard, but might not correspond with the need of the supplier. This might become a problem in communication with the retailer.

E_B on the other hand means that even though Nielsen used to set the standard for the segmentation of the market, the retailers are starting to work more with their own segmentation, complicating the communication further:

"/…/ So all the meetings must start with 'okay, this is how we view the market, and this is how we look at…yes but we have drawn these conclusions', 'yes but we have drawn these...'. It is not very effective really, so the scanning data has it drawbacks since it isn't consensus data"

Consumer Data

Data originating directly from the consumers and/or shoppers is mostly collected on an ad hoc basis, based on predetermined questions or issue formulations. As such, it is not used exclusively in a certain department. E_F says:

"Insights seldom just come to you. Often it's rather a gap you need to fill, you have a problem formulation you are supposed to solve. And then you can find data that guides you towards the solution"

Household panel data is the data type most regularly used of the three types of consumer data. As for example, Supplier A buys household panel data on a continuous basis, either weekly, monthly or quarterly depending on the category. A common view among the respondents, despite how regularly they buy it, is that the household panel data is in many ways used to interpret the retail scanner data.

"Nielsen describes very well what actually happens and how the consumers behave. In terms of what they buy. /…/ GfK can then explain the Nielsen data. If we are losing penetration in one segment, we ask ourselves who they are. GfK can explain their age, where they live and so on." (E_K)

Own Data

In terms of internally generated data, all the suppliers use their own sales data to follow up on their sales development, mainly by the sales department as a complement to retail scanner data. Only one supplier out of the 11, Supplier F, has its own loyalty program for their consumers. The purpose is explicitly to promote loyalty, while the extra information they get from their consumers is viewed as a bonus. Due to anonymity and competitiveness issues, E_F does not want to elaborate the usage of this data further.

Other Data Sources

There is a vast amount of additional data sources used by the suppliers. All suppliers are for example present on social media, which they follow up in terms of statistics, and web statistics in general from their websites. This is though an area few of our respondents are working with directly, except for E_{J2} who says:

"/…/ There is a vast amount of tools to use, but mainly we analyze our users in the digital part in order to understand what is the most effective advertisements."

Among additional data sources used by the firms, both free, 'open source' reports and applications, and paid reports or statistics are mentioned. E_B mentions for example 'Statistics Sweden' from where they get general statistics about the Swedish population, and E_K mentions that he/she buys weather reports from SMHI*, for certain projects. Trends are monitored in various ways for all the respondent firms, both by ad hoc desktop googling and bought trend reports, but also by subscriptions to databases that show product launches from various brands all over the world. By doing so, they can track what competitors are doing, and is commonly used to inspire new product launches.

* The Swedish Meteorological and Hydrological Institute

6.2.2 The Retailer Relationship

The importance of having a good relationship with the retailers is something that is often stressed during the interviews. Several respondents highlight the influence of the retailers also in the choice of market data. For example, E_D expresses that the transformation towards a more data-driven way of doing business is not solely driven from within the company, but a requirement and part of the expectations, from the retailers. Meanwhile E_I says that in projects they pursue together with the retailers, they choose what data to use for their arguments partly based on what the retailer finds suitable. This is to improve the likelihood of getting through with their brand or assortment suggestions. E_H about the influence of the retailer:

"Often we have collected a lot of data about what the consumers want, but the customers are of a different opinion, so they stop us there."

E_B says that he/she thinks the cooperation between retailers and suppliers in general has changed over time; previously they worked together with the retailers and could influence the stores, while today it is more about being an advisor coming up with "recommendations":

"/…/ So it is hard to, when they think more about their margins than their consumers, a gap emerges. And they have all the power in terms of meeting the consumer."

E_B gives an example for how this development have affected them as a supplier, when they as part of their strategy decreased the price on some of their organic products in order to embrace the organic trend. But one of the retailers increased the price of these products in order to improve their own margins instead.

6.2.3 Internal Resources

When discussing knowledge and competences required in order to handle the data, almost all suppliers stress a combination of analytical skills, experience and/or knowledge about the industry, and a commercial mindset.

"The data has no value if you aren't able to draw insights from it." (E_C)

E_D says that some people tend to use too much facts, while facts rather should be used as a support to avoid arguments based on mere opinions. He/she argues that it is important to have the

"operations in your blood", to make useful analyses with appropriate amount of facts. Another example is E_H who says that "*to simply be a number cruncher only takes you halfway.",* and E_K stresses the importance of questioning which analyses actually brings the business forward.

While E_A expresses the need to see "cause and effect" to understand a certain situation, he/she also expresses the need to handle the various systems in a functional way, creating a need for manual intervention. E_I says that a consequence of the diverse data systems is that they spend too much time on finding the data and too little time for analyzing. He/she would prefer a system enabling to cross-run data in a better way.

Most of the respondents think they have the knowledge required within the firm, even though there is room for improvement and knowledge levels differ among individual employees.

"/.../ They have different backgrounds, and they have different level of interest in numbers and data, so some we have to help more than others…" (E_H)

In order to facilitate the use of data, the companies either have an insight department with overall responsibility, while others have one or more employees in category management or the general marketing department with this task. At Supplier J for example, E_{J1} says that it is up to the respective Category Manager to be up to date with the data, while he/she acts as a support function. E_B on the other hand says that they work with outspoken "super users" within different databases or report systems. As for example Category Managers are super users in the Nielsen database, Product Managers are super users in terms of trend data, while Brand Managers are super users of brand and media tracking.

In terms of limitations linked to data usage, time and resources are mentioned by all respondents. E_D also says that one problem is to know what data and/or analyses that already exist in the company. To avoid this, it is the responsibility of Supplier D's insight department to have the overall overview. However, due to employee rotations some knowledge has disappeared, leaving the department somewhat unorganized.

6.2.4 Spreading Knowledge throughout the Organization

When asking the respondents how the sharing of the generated insights between departments and colleagues looks like, all respondents indicate that there are both informal and formal ways.

Overall, the respondents mention that most meetings are held on a regular basis (monthly or quarterly) with the same set of persons (cross-functional representatives, cross-category representatives or a mix of both) with a planned agenda where insights and information are shared. Even though there are a lot of meetings, E_C clarifies that if one department finds something that can be of relevance for another department, they share the information immediately and do not wait until next set meeting.

Many respondents also state that information is spread through the organization in their daily work through face-to-face communication, e-mailing and phone calls. E_D says for example that information is spread between categories, as the Category Managers sit next to each other in the office premise.

Further, the majority of the respondents mention a shared database, to which the whole organization can log onto, in order to find important and relevant information for the business. Common for the companies' databases is that they consist of standard reports and various consumer research, but they differ in terms of magnitude and who can upload information to the database. According to E_F, it is up to the one who has conducted the research to upload it, while E_{J1} has exclusive responsibility to upload what he/she thinks is of interest for everyone.

Several respondents also say that they spread insights by working in projects, consisting of people from various departments. Two of the suppliers have recently started projects aiming to develop, and get a broader understanding of, the categories:

"This summer, we ran a portfolio project where all categories and all markets in the Nordics were included. This aims for a better understanding of our categories and consumers. In this project group, there has been representatives from all categories plus the sales department." (E_{J1})

"/…/ A category vision, it is a growth plan for a category. What we do is that we inventory based on insights, a comprehensive insight work, and we perform various formal workshops, where we try to map all possible growth opportunities. /…/ In this category vision work, a project group is working with this during half a year." (E_K)

6.2.5 Openness to Insights from other Departments

The respondents do overall say that different departments are relatively open to insights generated from other departments in the organization. But what is stated by several respondents (e.g. E_A, E_D and E_K) is that it is not enough to solely reach a well developed insight, you also need to be able to sell your idea and explain the benefits to the next person. This is done most advantageously by using fact-based arguments. As E_D put it:

"/.../ There are a lot of competitive people, so if there is something one thinks is of importance, one has to make sure to get through the noise."

Even though the departments are open to each others' ideas, E_D and E_I mean that the marketing and sales department can sometimes talk past each other since they not always use the same vocabulary. E_K agrees and also says they work towards goals and KPIs with different time horizons:

"The marketing department can have an idea about a certain effort we need to do, which will have effect on a three-year term. Then the customer responsible, needs to have the results within a maximum of three months. /.../ The decisions needed to get a quick result compared to the patience needed for longer term results are very different."

Further, several respondents mention that the sales department may think that the marketing department is vague in their suggestions for driving the business forward. As for example, E_K tells us about a conflict of interest when the marketing department suggested a new product, which the sales department rejected mainly because there was a lack of numbers supporting the demand. Since a similar product did not yet exist, no numbers for similar products were available to compare with. E_K therefore says that it is sometimes easier to pitch a launch of a product already available on the market. E_K sums up:

"/.../ But then the question is, is there a need for that product? And what is our contribution?"

6.2.6 From Insight to Action

When talking with the respondents about how they are taking actions upon their insights, many of them note that there are no clear, official process for this. It rather depends on the type of insight and its significance, and the actions are most often taken on an ad hoc basis.

When an insight is of a more complex nature and applicable on a product development, all respondents said that the most common way to take actions is through projects. Many respondents explain that when developing new products, decisions for further actions are based on merged insights generated from various departments. Decisions of this nature, as for example if a project should be undertaken, are most often taken by a manager.

On the other hand, according to all respondents, when generated insights concerns for example a deviation in the data, like a sales number deviation, it can often be solved directly by a KAM and/or a Sales Manager. Both E_C and E_I explain that when this happens, they seek to find explanatory variables before taking actions upon it.

"You need to have the right medicine". (E_C)

6.3 When Loyalty Card Data Comes into the Picture

In the end of the interviews, we asked some questions about the respondents' perceptions about the loyalty card data and how they think it will affect the industry and their business. All respondents are familiar with the data and had all been in contact with ICA. Some of the respondents had already been able to examine the data first hand, but due to promised anonymity it cannot be presented who and how many.

6.3.1 Is there a Need for this Data?

The majority of the respondents seem to have a positive attitude towards loyalty card data and agree that the new data would generate a deeper understanding of the consumers.

"I believe it is a very good complement since you can arrive at even deeper insights. Because everyone wants to know as much as possible about the consumer and how the consumer leaves footprints when moving around in the store. How the consumers do their shopping. Everyone in the industry wants to know that of course." (E_G)

"/.../ Like when we look at cross-shopping, we will be able to see how people buy products in a greater extent. The data support information and might identify gaps in the market." (E_C)

Several respondents also state the importance of considering what is 'nice to know' versus what is 'need to know'. Many mention that the loyalty card data is rather expensive and thus, there is a need

to know whether it will be worth the cost. These respondents mean that they do not have time and resources to analyze something that is just 'nice to know'.

"I feel like, okay I am willing to pay a lot of money for the data, but in that case it should be much better. I want more clarity, better software, finished reports, self-analyzing products. I want to be able to push a button and get the picture." (E_B)

Further, in order to leverage the data, E_C says that you need to have a good understanding of the tool, which also requires time and resources:

"/.../ Is there a need? Yes, absolutely. But to what price and to what extent? That, I leave totally unsaid."

E_A and E_G are also concerned whether they have enough resources to handle the data. Questions they seek to answer are whether they will need to reallocate human and/or monetary resources in order to afford the loyalty card data. E_B expresses her worries:

"The idea with the data, as I understand it, is that we are going to do the work by ourselves. /.../ We already work a lot and most naturally the Customer Marketing Managers would be the ones working with the new data and there are certainly several things they would be able to do with it. But then we need to cut something else and what do you prioritize? /.../ As a matter of fact, I would want to start over from a blank piece of paper".

Another thought brought up by E_A, E_H and E_I when talking about the loyalty card data, is ICA's classification of the consumers. E_A means that there will be a challenge for the suppliers to match their own classification to ICA's, while E_H and E_I mean that ICA's classification might not even be of interest for them because their categories are of different nature and consumed rather differently compared to other categories.

In order to give us a more thorough understanding of what Supplier K thinks the loyalty card data can imply in terms of surplus value, E_K shows us a picture (See figure 2):

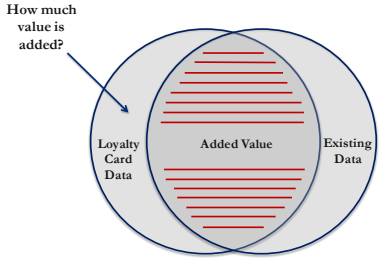


Figure 2: Loyalty card data versus existing data according to E_K

"As you can see in the picture, somewhere like this is how we will end up. Yes, the loyalty card data contributes something extra, but is it worth the price?" (E_K)

6.3.2 The Effect on the Data Landscape

Several of the respondents mean that the data will work as a complement in the current data landscape, but it does not show something totally new. The majority of the respondents compare loyalty card data with household panel data from GfK.

When comparing the two data sources, the respondents mean that the loyalty card data is more interesting in many aspects. Mainly because it contains a large number of observations you can break down in depth, which gives a deeper understanding of the consumers, both in terms of shopping behavior and who the consumer is. Nevertheless, the respondents agree that the loyalty card data will not replace the data from GfK, mainly because the household panel data covers all retailers on the market and enables the suppliers to follow the consumers' switching behavior. As E_K points out regarding the loyalty card data:

"Your insights are locked only to ICA."

This is further supported by E_C, but he/she also questions the reliability in GfK's data:

"With the GfK data you can see how the consumers switch between the chains. /.../ But then you can ask yourself, does GfK do that anyway? Do you always write down that Snickers you bought at for example 7-Eleven when you come home?"

Further, E_C, E_K and E_I mean that since this data is gathered from ICA's consumers, the suppliers cannot use it in negotiations with other retailers, as they will most likely not accept this data as basis for discussion.

6.3.3 The Effect on the Retailer Relationship

Many suppliers indicate that they think the relation with ICA will be affected in some way when the loyalty card data is released. Both E_F and E_{J1} think the relation will be improved if the supplier decides to purchase the data.

"You will get one more common language. It implies that you get an additional common point of contact to talk about, as can be used in order to develop the common business." (E_F)

However, E_A and E_K mean that the supplier's decision regarding buying the data or not will not affect the relationship substantially, because the core business is more important.

"/…/ What our customers buy from us, and what they in turn sell to their customers, the end consumers. This is core business. I believe this will always triumph other things, such as what type of data source you buy." (E_K)

If not buying the data on the other hand, E_F, E_H and E_{J1} think that the relationship with ICA could be negatively affected. E_{J1} says:

"ICA will prioritize the collaboration with the suppliers who accede to this. And ICA will have a lot of knowledge that we do not have access to, which might make it more difficult for us in negotiations. /…/ However, it is an important question to consider in our future collaboration"

Some of the interviews ended in a discussion concerning the demands on ICA as a distributor as well as on the suppliers as users of the data. Both E_C and E_{J1} indicate that when ICA rolls out the loyalty card data, they need to be able to teach the suppliers how they can use it to create value and business advantage.

"ICA has some work to do. /…/ They need to sell the benefits to the suppliers. It is obvious that they have not been on the other side." (E_C)

According to E_C and E_F, higher demands are put on the suppliers since ICA expects the suppliers to become category experts and gain further understanding about their categories. To achieve this, E_C argues that the suppliers need to have extensive knowledge about how to use the system.

7. Analysis

In the following chapter, we aim to analyze our empirical findings with the aid of market orientation theory and relevant literature studies. The analysis is divided into four main sections, each based on the research question the analysis aims to answer, namely:

(R1) How are insights about the market generated by means of Big Data?

(R2) How does Big Data affect how insights are disseminated throughout the organization?

(R3) How does Big Data affect how the organization takes actions based on the insights generated and disseminated throughout the organization?

(R4) How will loyalty card data affect the current Big Data practices of the organization?

7.1 Intelligence Generation

The retailer: A powerful middleman setting the rules for what data to use in the industry

As established in the theory section, market intelligence is according to Kohli and Jaworski (1990) the starting point of market orientation, and it refers to the activities that lead to an understanding of customers' current and future needs and preferences, as well as the exogenous factors affecting them. Therefore, we find it suitable to start our analysis by looking into the first step to reach this understanding, namely by examining the data landscape from which the insights are supposed to be drawn from.

After summarizing the empirical findings in regards of the data used to collect insights, it becomes clear that the data landscape is relatively homogenous in terms of sources being used, as well as to what kind of questions they do answer. As such, there seems to be a relatively determined business standard for how market data is 'supposed' to be gathered, and has been so for quite some time. As E_F said about the use of the influential retail scanner data: "*/.../ It is probably a lot about habits. What one is used to work with"*. This homogeneity on the market would logically be the result of a common understanding of what is 'best practice', but one could also argue that the need of 'speaking the same language' with stakeholders, both internally and externally, is in *itself* a contributing factor. It seems especially important to be able to communicate with the customer, in this case the retailer, with facts that they recognize and understand, and foremost, agree with. As for example, E_H pointed out that

ideas are often stopped by the retailer, if they disagree with the underlying assumptions. In that sense, it seems like a harmonization in the dialogue is preferred, and the use of the retailer's preferred data could be a mean to achieve that.

The importance of a good relationship with the retailer is a recurring theme in the empirics. Kohli and Jaworski (1990) explicitly mention the FMCG industry in their article while discussing the need to define one's customers as they have two types of customers - the retailers as well as the end consumers - and further argues that there is an unbalanced relationship between retailer and manufacturer in terms of power. This is in line with what our respondents testify, especially in terms of the relationship with ICA who are the link to 50 percent of the Swedish consumers. Since the suppliers thus are dependent on the retailer, and seem to adapt their data sourcing to fit not only the retailers' 'language' but also preferences, one could argue that the retailer has the power not only to dictate the terms on the market of the goods, but also on the data market. This since their requirements dictate the terms for what kind of facts the suppliers find necessary to collect. In a way, the retailers thus define what kind of insights or facts that are of importance in the supplier-retailer relationship. As such, it seems to be hard as an individual supplier, to bend too much from the industry standard in terms of how facts and insights are collected, since this might have an impact on the relation to the retailer.

The collection of market insights is done in a reactive manner

In order to truly understand the whole process of how insights are generated and how this affects the dimensions of market orientation, we need to focus not only on the dynamics of the data landscape, but also on how the facts in the generated data actually are transferred and merged into valuable insights.

In the empirics section, it is relatively clear that the retail scanner data, that is a vital part in every organization, is a necessity not only for internal use by every department, but also in the communication with, and understanding of, the customers and market as a whole. But it has also been pointed out that the retail scanner data mostly explains *what* happens in the market, but fails to answer the so important *why* question, creating a need for several of the other data types present in the data landscape. This systematic use of retail scanner data, with subsequent "add-on" investigations, implies a rather reactive approach towards insight creation. This is in line with Jaworski et al. (2000) who put forward how being market oriented is often interpreted as being market-driven. However, the authors also show that a market oriented business can, and should, be

both market-driven and market-driving in order to balance its short and long term objectives. A few of the suppliers have started to work with long term portfolio and category projects like E_{J1} and E_K, indicating a more proactive approach toward insight collection, but it is far from the standard.

Data: A useless resource without the ability to transform it to an actionable insight

There are several hindrances mentioned during our interviews related to data usage that complicates the transformation of facts into actual insights, which we believe to be crucial in order to understand the tendency towards the reactive approach concluded above. As E_F put it: "*Insights seldom just come to you*". The enormous amounts of data, standalone systems, limited resources et cetera, complicate the path towards revolutionary insights as the data needs extensive interpretation and contextualization to be of value. Even though several respondents highlight a wish for better technology to help them handle this complexity, the technology aspect of market orientation (Gatignon and Xuereb, 1997) is not yet fulfilled, an aspect that arguably could be explained by the inertias discussed above in the data landscape. That the data is mainly used to answer predetermined questions and issues, rather than to search for previously unknown opportunities without an obvious connection to certain issues, could thus be seen as a way to handle this complexity. As of today, there is as such a high dependence on each individual to extract the right fact, from the right source, in the right context, in order to go from fact to insight. As mentioned in the empirics: Data is worthless without the right analysis. And the right analysis it seems, is highly dependent on the individual's ability to interpret the results.

7.2 Intelligence Dissemination

Deeper insights are created when various insights are integrated

The empirics have shown that the majority of the case companies spread information through a mix of both informal and formal meetings as well as through a shared database where most relevant information can be found. This is in line with the theory by Kohli and Jaworski (1990), showing that in order to respond effectively to a market need, it requires involvement across departments in an organization and therefore, the fact that the information is spread in several ways, serves as favorable conditions for the organizations to spread and communicate knowledge throughout the company.

Further, it seems like it is when various initial insights and facts are integrated, the organizations arrive at even deeper insights and can therefore react to the market needs more effectively. Since there is a large number of various data sources spread over several different systems, which different

departments are working rather separately with, it is when *people* meet, both formally and informally, the deeper insights are generated. When departments work separately with data sources, we therefore see a possible risk that the suppliers can miss valuable insights that only can be created when several facts and insights are integrated. This since some of the data at hand not necessarily say anything in itself and is therefore easily overlooked by individuals, implying that the deeper insight will not be created.

It is up to the individual to spread the right insights to the right person

As mentioned earlier in the analysis, it is under the responsibility of each individual to make sure that relevant information is converted into insights. It is also up to the individual to ensure that important insights reach persons who can affect the decision or take the decision him- or herself. Yet again, it is of importance for the employees to be able to pitch as well as to push through an idea if he/she really believes in it. This taken together implies a risk of missing important information. Thus, a lot of responsibility is put on the individual, which puts pressure on the knowledge level throughout the organization. The employers need to know what is relevant when and where.

Through our research, we have seen that most of the organizations have one or a few persons with an overall insight and data responsibility and some of them have developed an insight department in order to enable the dissemination of the insights and ease the pressure on the individual. This can be interpreted as the more data that has been introduced to the players' business activities, the need for the organization to have of one or a few persons with overall insight and data skills grows bigger in order to capture the value of the insights. This "solution" lands in a catch 22 situation, since it puts even higher demand on a few single individuals in terms of knowledge and workload. As for example, if an 'insight person' switches to another department or even organization, there is a loss of important competence, which implies difficulties in finding a replacement due to the need of broad knowledge and experience in this type of role. Further, another problem for the 'insight person/persons' that arises when Big Data occurs in an increasingly extent is the workload. The study has shown that these persons are working with a huge amount of data, and they have a hard time being able to handle the amount as it is today. Hence, is there a need for the insight department to grow even bigger in order to handle the enormous amounts of data or would it be a better idea for the organization to decentralize the overall knowledge in the organization? But, would that even be possible? It is not obtainable for everyone to know everything.

7.3 Intelligence Responsiveness

Big Data serves as a mean for taking actions, but other parameters determine the actual outcome

In order for the organizations to actually accomplish something and satisfy their end customers, it is of importance they take actions upon the generated and disseminated insights (Kohli and Jaworski, 1990). What can be concluded from our empirics is that the entire purpose of buying all this data is to drive the business forward and thus, take actions. When the suppliers arrive at an insight, they are overall relatively quick to respond and start new processes aiming to lead the organization forward. An insight can for example result in a decision that even more insights are needed to be able to take further actions, or that a group should be composed in order to drive a major project. This indicates that the organizations' ways to take actions is closely related to when insights are generated and disseminated throughout the company, which implies no major inertias concerning the suppliers' responsiveness. But since the actions are dependent on the success of the intelligence generation and dissemination, the identified issues concerning these first stages of an insight's way from data to action are 'transplanted' forward, imposing a risk of missed opportunities.

The general indication from the Big Data literature is that when applying Big Data Analytics, many problems will be solved and better decisions will be taken (e.g. Mankins and Sherer, 2015; Manyika et al., 2011; Brock et al., 2013). Shown in the study is that the Big Data itself is not directly connected to the organizations' actions, but serves as a guiding role in how the organizations should act based on its influence in how insights are generated and disseminated through the companies. But even though the data is guiding in many decisions and actions, there are also other parameters which determine whether an action can be taken or whether the outcome will be as intended, such as company resources, other departments or units, overall company strategies, inter-organizational politics, relations to customers et cetera. An example of this is when E_B described their struggle pursuing a price strategy for ecological products, which was never reached by the end consumers due to that the retailer had another strategy in mind. Thus, Big Data only serves as a mean to help market oriented actions through intelligence generation and intelligence dissemination, but it does not solely determine the outcome of the actions.

The bigger the data gets, the bigger the risk of inhibiting innovation?

Another example of how insight-based decisions and actions are affected by the inter-organizational politics parameter is the conflict of interest between marketing and sales, mentioned by several of the respondents. As stated earlier, the departments are working rather separately with the data sources, with different purposes and towards goals of different longitude and therefore, they have difficulties in understanding each other. An example of this is when E_K told us about when the sales department rejected a new product suggested by the marketing department due to a lack of numbers supporting a demand for the product. These type of situations seems to emerge when the sales department concentrate too much on the data from Nielsen that they mostly work with, focusing on numbers that already have happened. Therefore, a possible consequence when working with huge data amounts, innovation can be inhibited due to too fact-based decisions. However, as the majority of the respondents have stated, if you use the data correctly and merge insights from various sources, fact-based insights can favor innovation and find a gap in the market. Thus, the bigger the data gets, the greater need of taking care of it properly. Otherwise there is a risk that the data will have a counterproductive effect, and inhibit the business from moving forward.

7.4 Loyalty Card Data Implications

In the above sections we have sought to explore how Big Data affects the market orientation of FMCG suppliers on the Swedish market by answering how the insights drawn from the data is generated, spread and acted upon. As stated in our problem formulation, we want to create an understanding of how current practices will be affected when the data landscape evolves, by examining the soon to be launched loyalty card data. Due to the novelty of this data, this discussion will mostly revolve around possible consequences on the market intelligence parameter of the market orientation phenomenon, i.e. the generation of insights about the market (Kohli and Jaworski, 1990), as the effects on dissemination and responsiveness gets too speculative to add any value to the discussion.

"Need to know" or "Nice to know" - Is the investment worth it?

Even though our respondents believe that loyalty card data would provide a new level of richness and precision compared to the household panel data that is used today, there is an uncertainty regarding the amount of value it actually will add. Meanwhile, the usefulness in the relationship with other retailers was discussed to a large extent. As such, the discussion around the loyalty card data can be viewed in terms of an evaluation model illustrated in Figure 3:

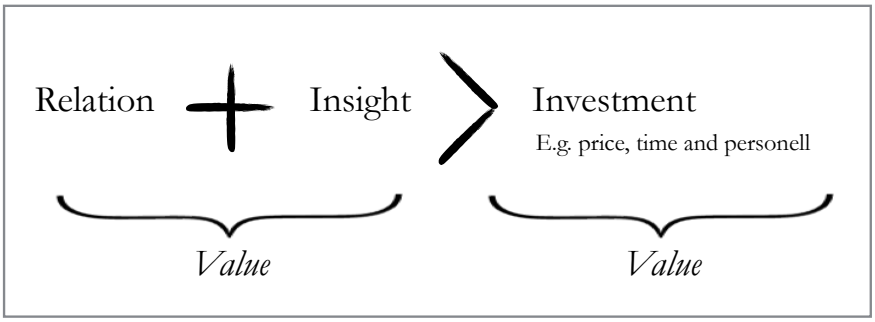


Figure 3: Loyalty card data evaluation model

On one hand, it is the relational aspects that need to be weighed together with the additional insights the data provides, and on the other, it is the cost in terms of price, time and additional resources. In order for the loyalty card data to be considered an option, the value of the left side has to be bigger than the value of the right side.

The evaluation criterion of the relation is two-folded: firstly, it revolves around the impact on the relationship with ICA, and secondly it revolves around the relationship with the retailers comprising the other half of the market. In terms of the relationship with ICA, the new data source would add additional complexity. In one way, the data could improve the relationship since communication can be improved, while even out the information imbalance that exists today, potentially affecting the uneven power balance to the suppliers' favor. In another way, if the retailer chooses to 'punish' the supplier that chooses not to buy the data, the retailer would further increase its power at the supplier's expense. This means that the relationship *in itself* becomes an important factor to take into account when evaluating the possible gains from the loyalty card data.

Regarding the relationship with other retailers, we have reason to relate back to the slow-moving dynamics in the data landscape that was discussed in the first part of the analysis. Because if the data cannot be used except in collaboration with one retailer (ICA), however important this certain retailer might be, the data's revolutionary potential erodes as it cannot replace the already established practices in place - The suppliers still need to have access to data sources that can be used in the other retailer relationships. As such, the relational parameter also affects the value of the actual *insights*, not only as an additional parameter.

Since the evaluation of the loyalty card data is dependent on the relationship with the retailer, one can question how much focus it takes away from the *consumer* insights the data is supposed to capture. This makes us question the role of loyalty card data as an enabler of an improved *consumer*

orientation, since the political aspects of the data moves focus from the consumer to the middleman. As Kohli and Jaworski (1990) point out, the FMCG suppliers have to relate to not only one but two different kind of customers with different needs. Thus, in order for the supplier to be customer oriented, it has to balance the interests of both of their customer groups, i.e. be both *consumer* and *retailer* oriented at the same time. Customer orientation is about having "sufficient understanding of one's target buyers to be able to create superior value for them continuously" (Narver and Slater, 1990) but as both E_A and E_B pointed out, the relation with the retailer revolves a lot about creating profitability for the *retailer*. If the retailers have a different view on what is best for *their* customers, i.e. the end consumers of the supplier, there could be a problem. The suppliers could thus be argued to be dependent on the retailer to be consumer oriented *for* them, which could be problematic if they do not define their consumers' need and preferences in the same way as the retailer.

On a final note: As could be seen, the evaluation of the loyalty card data is complex, and makes it hard to measure objectively, as so many factors need to be taken into account. Even if the relational aspects are considered, additional consequences are not taken into account. For example, what would the effect be if the the data landscape altered in another direction? As concluded in the first part of the analysis - the suppliers seem to adapt their data sourcing to fit the retailers' language and preferences, giving the retailer the power to dictate the terms on what data to use and how. And ironically, this inertia, partly created by ICA themselves, seems to interfere with the same actor's attempt of evolvement. With the loyalty card data, the retailer has the potential of rearranging the scene, but the question remains how this will affect the preset as of today. If for example the other retailers (e.g. Coop and Axfood) also release their loyalty card data, the need for household panel data would arguably diminish, and the relational aspect weighing down the value of loyalty card data would disappear. Or if the providers of household panel data would meet the new competition by increasing the amount of participants in their panel, the loyalty card data would be even less valuable. As E_B said about the data situation today:

"*As a matter of fact, I would want to start over from a blank piece of paper*"

8. Concluding Discussion

In the following chapter the main conclusions answering the research questions are presented, followed by a discussion, managerial implications ending with suggestions for further research.

8.1 Conclusions

This research has two different purposes, one theoretical and one empirical. The theoretical purpose was to investigate how Big Data exploitation relates to and affects the extent of market orientation in organizations. To elaborate this, we studied the empirical case of how FMCG suppliers' use Big Data and how the usage is affected when the loyalty card data comes into the picture. Thus, the empirical purpose was to create knowledge and deeper understanding about how suppliers in the FMCG industry are utilizing Big Data as of today and how their current practices will be affected when the data landscape evolves. Based on theory and parameters used in previous research we aim to fulfill the theoretical and the empirical purpose answering research questions (*R1), (R2)* and *(R3)*. We added one research question *(R4)* focusing on the development of Big Data practices, in this case the introduction of loyalty card data, and how that can affect market orientation. The four research questions, followed by a summarizing conclusion and discussion, are the structure of the following section to shed light on our key findings.

8.1.1 How are Insights about the Market Generated by means of Big Data?

The study can conclude that Big Data and the opportunities it brings is closely tied to how the companies are generating insights about the market. What data and how FMCG suppliers exploit it to generate insights are rather standardized among the players in the industry. This industry standard is seen as a consequence of the need of speaking the 'same language' and the unbalanced relationship with the retailer, making it hard for individual players to deviate from the 'norm'. It is the retailers who set the scene for what data to collect. Further, due to the lack of an integrated system, the data is spread over many platforms, and it can therefore, with a few exceptions, be concluded that the suppliers are collecting insights in a reactive manner. Also, since the data is a useless resource without the right ability to transform it to a valuable insight and yet due to the lack of an integrated system, there is high dependence on each individual to do the right analysis and interpret the results.

8.1.2 How does Big Data Affect how Insights are Disseminated throughout the Organization?

The research has shown that insights and data are spread through both formal and informal meetings, as well as over common databases. It can be concluded that it is when initial insights and facts are integrated, the deeper insights are reached. Yet again, since the data is spread out over several systems, it is also when people actually come together and merge their insights the most valuable insights are created. This implies even more responsibility for the individual person - you do not only have to do the right analysis, you also need to understand which facts and insights that are of relevance to whom in the organization. Additionally, you need the ability to sell your ideas to your peers in order to get them through.

In terms of the organization, it can be concluded that in line with an increasing amount of data to handle, the organizations have tried to enable the dissemination of the data and ease the pressure on the individual by having some type of insight department or one or a few persons with overall data and insight responsibility. This 'solution' we argue puts even higher pressure on a few individuals in terms of both knowledge and workload. As such, a catch 22 situation is identified.

8.1.3 How does Big Data Affect how the Organization Take Actions based on the Insights Generated and Disseminated throughout the Organization?

This research has shown that Big Data in itself is not directly connected to organizations' actions, even though it is guiding in many decisions due to its influence in the generation and dissemination of insights. It can therefore be concluded that Big Data serves as a mean to help organizations take market oriented actions, while other parameters and factors, both internal and external, determine whether the intended outcome is reached. It can also be concluded that the bigger the data gets, there is a greater need of taking care of it properly. If you do not use the data correctly, it can rather inhibit the business from moving forward, while when using it properly it can create great advantages.

8.1.4 How will Loyalty Card Data Affect the Current Big Data Practices of the Organization?

In terms of how the data ultimately will affect the current Big Data practices is not possible to answer since the data is not in use yet, but this study has identified an evaluation model that aims to capture the parameters of importance when deciding whether to buy loyalty card data or not. This

model, visualized in Figure 3, concerns the evaluation of market insight generation, but excludes effects on dissemination and responsiveness as it is too early to draw any conclusions regarding these dimensions of market orientation. The evaluation criteria consist of the perceived added-value of new insights and perceived added value in terms of relationships on one hand, weighed against the cost in terms of price, time and additional resources on the other. In order for the loyalty card data to be considered an option, the perceived gains must be bigger than the perceived costs. This study indicates that the relational parameter affects the perceived value of the new data both directly in terms of improved (or worsened) relationship with the retailer selling the data, and indirectly by affecting the usefulness of the insights the data is supposed to generate.

Further, this study has as a consequence of the high dependence on the relational aspect, raised a concern regarding the consequent effects on the consumer orientation. But as could be seen, the evaluation of the loyalty card data is complex, and makes it hard to measure objectively, as many factors need to be taken into account to be able to fully answer this question. What could be concluded though, was that the relational aspects of the loyalty card data might shadow the importance of the insights that are supposed to be generated. In a longer term, this might affect the dynamics of the data landscape.

8.1.5 Final Conclusion and Discussion

In this study we have concluded that Big Data have implications for the studied firms' market orientation, since it is affecting how market intelligence is generated, disseminated and consequently affecting the responsiveness to that market intelligence. As such, Big Data itself can be said to create beneficial conditions for market orientation, but has no value in itself if not exploited and utilized in a correct way. Therefore, Big Data Analytics is needed to reach this effect, and real and valuable effects on market orientation are achieved when the organization manages to use Big Data Analytics effectively.

Further, through our study we have been able to verify the many potentials of Big Data and Big Data Analytics brought up by among others Manyika et al. (2011) and how it can add value to organizations by exploiting it correctly. But our research has also verified the issues, brought up by the same authors, that must be overcome to reach Big Data's full potential. Additionally, we have developed these issues by highlighting the relationship between the suppliers and the retailers in the FMCG industry. The relationship with the retailers we argue, is partly determining how much value the suppliers can extract from Big Data, as it affects the way in which the data is used. For example,

as ICA releases its loyalty card data, an additional system is added to the data landscape, complicating the path towards successful Big Data Analytics usage. In accordance with one of Manyika et al.'s (2011) identified issue areas concerning value capturing of Big Data, this conclusion can be viewed as a development of the *industry structure* parameter with practical implications for the FMCG industry. However, the Swedish FMCG market can be assumed to be extraordinary due to that it is foremost dominated by one player, and the relationship aspect could potentially be especially prominent in this certain setting.

8.2 Strategic and Managerial Implications

As the actors become more data driven, there are several managerial implications that follow from our drawn conclusions. Firstly, as we found that there is a high dependence on each individual to have a high degree of analytical capacity as well as practical experience in order to reach insights of value, it is of importance to include both of these aspects when appointing new co-workers. As the data is used throughout the company, it is not only important when hiring for insight department, even though the requirements for these roles are the highest. Without the right competences spread out in the firm, valuable insights are lost along the way, as the deeper insights are reached when the right information from various sources are merged. One possibility to ensure that analytical appointments are coupled with industry specific 'know-how' is to have an outspoken HR policy promoting rotations and promotions cross-category and cross-department.

Secondly, to simplify the transition from data to insight, it is important that managers across departments have an understanding of the value of combining data sources, in order to enable the advantages of Big Data practices. This implies a need for technical knowledge among the managers to be able to set requirements in terms of software and systems from the data suppliers. Even though it is concluded that the retailers set the scene for what data to collect and that the different systems not yet are compatible, we believe that a proactive mindset from a managerial level will help the development in the right direction. The retailers will also gain from a better analysis and insights, so even though the power balance is uneven, the supplier should be able to drive change.

Lastly, we would like to focus on the relationship with the retailer. Even though analytical skills, industry experience, and improved software could help the suppliers become better at generating, spreading, and acting upon market oriented insights by the use of Big Data, we have seen that the retailer can alter the intended outcome. Therefore, it is of importance that managers are tentative to this, and use this knowledge to strategically communicate with the retailer.

8.3 Limitations and Suggestions for Further Research

As our study is limited in scope and by its descriptive nature, the findings reached in this study cannot be generalized. Therefore, our conclusions cannot be seen as definite, but as interesting suggestions serving as a basis for future research. This is a consequence of our chosen methodology and the limitations stated in the introduction chapter.

However, the generalizability of the study could arguably have been improved by adding additional cases, to get a more complete picture of the industry. For example, it would have been interesting to also include smaller actors within the FMCG industry, to see if size and different level of Big Data implementation would affect the results. Another limitation of our study is that we only interviewed one person per company, with one exception where two persons from the same company were interviewed, which further decreases the generalizability. If we would have interviewed several persons from the same organization, it would have given us a better understanding of Big Data's implications on market orientation, as market orientation concerns the entire company, not only the marketing and sales departments. However, we aimed to speak to more employees at each firm, which could not be fulfilled as the responding firms did not have enough resources for more than one interview. Hence, our focus was to ensure that each interviewee was deeply knowledgeable about the subject, giving us reason to approach market orientation from marketing and sales' point of view. Therefore, for future research it would be interesting to investigate the same topic but interviewing more people from the same firm, to get deeper into each case.

Further, due to the exploratory approach of the study, additional areas for future research have been identified. In order to broaden the research, it would be interesting to include other industries to compare the results and identify differences and similarities. Questions that would be of interest to explore are how Big Data and Big Data Analytics relate to market orientation in other industries and whether the importance of the relational aspect is similar. It would also be interesting to see how far other industries have come in terms of Big Data implementation compared to the FMCG industry.

Finally, another interesting area for future research is how Big Data and Big Data Analytics is linked to the theory and literature of industrial networks. Based on our study, we argue that the relation between various actors in the FMCG industry plays a crucial role in how Big Data can be exploited, but to gain a deeper understanding of the suppliers' data usage there is a need to grasp the market dynamics in a broader sense. It can be assumed that market dynamics play an important role in

terms of Big Data exploitation not solely in the FMCG industry and therefore, this research topic would be applicable to other industries as well.

References

Abercrombie, N., Hill, S., & Turner, B. S. (1984). *Dictionary of sociology*. Harmonsworth: Penguin Books.

Bell, J. (2006). *Introduktion till forskningsmetodik* (4th ed.). Studentlitteratur.

Bloem, J., van Doorn, M., Duivestein, S., van Manen, T., van Ommeren, E., & Sachdev, S. (2013). *No more secrets with big data analysis*. The Sogeti Trend Lab VINT.

Brock, J., Souza, R., Platt, J., & Dreischmeier, R. (2013). *Big Data's five routes to value*. Retrieved January 28, 2016, from https://www.bcgperspectives.com/content/articles/information_technology_strategy_digital_economy_opportunity_unlocked_big_data_five_routes_value/

Brown, B., Court, D., & McGuire, T. (2014). *Views from the front lines of the data-analytics revolution*. McKinsey & Company, Inc.

Bryman, A., & Bell, E. (2015). *Business research methods* (4th ed.). Oxford: Oxford University Press.

Cano, C. R., Carrillat, F. A., & Jaramillo, F. (2004). A meta-analysis of the relationship between market orientation and business performance: Evidence from five continents. *International Journal of Research in Marketing, 21*(2), 179-200.

Cate, F. H., & Mayer-Schönberger, V. (2013). Tomorrow's privacy. Notice and consent in a world of Big Data. *International Data Privacy Law, 3*(2), 67-73.

Chen, H., Chiang, R. H., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly, 36*(4), 1165-1188.

Davenport, T. H., Barth, P., & Bean, R. (2012). How big data is different. *MIT Sloan Management Review, 54*(1), 43.

Deshpandé, R., & Farley, J. U. (1998). Measuring market orientation: Generalization and synthesis. *Journal of Market-Focused Management, 2*(3), 213-232.

Dubois, A., & Gadde, L. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research, 55*(7), 553-560.

Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532-550.

Ellis, P. D. (2006). Market orientation and performance: A Meta-Analysis and Cross-National comparisons*. *Journal of Management Studies, 43*(5), 1089-1107.

Flick, U. (2014). *An introduction to qualitative research* (5th ed.) SAGE Publications Ltd.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219-245.

Gandomi, A., & Haider, M. (2015). Beyond the hype: Big data concepts, methods, and analytics. *International Journal of Information Management, 35*(2), 137-144.

Gartner (n.d). *Gartner IT Glossary: Big Data.* Retrieved from Gartner [2016-05-01], http://www.gartner.com/it-glossary/big-data/

Gatignon, H., & Xuereb, J. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing Research, 34*(1) , 77-90.

Gebhardt, G. F., Carpenter, G. S., & Sherry Jr, J. F. (2006). Creating a market orientation: A longitudinal, multifirm, grounded analysis of cultural transformation. *Journal of Marketing, 70*(4), 37-55.

Gerard, G., Haas, M. R., & Pentland, A. (2014). Big data and management. *Academy of Management Journal, 57*(2), 321-326.

Gotteland, D., Haon, C., & Gauthier, C. (2007). Market orientation: Synthesis and new theoretical directions. *Recherche Et Applications En Marketing (English Edition), 22*(1), 45-59.

Griffiths, J. S., & Grover, R. (1998). A framework for understanding market orientation: The behavior and the culture. *Proceedings of the American Marketing Association summer conference,* 72-81.

Homburg, C., & Pflesser, C. (2000). A multiple-layer model of market-oriented organizational culture: Measurement issues and performance outcomes. *Journal of Marketing Research, 37*(4), 449-462.

Jaworski, B. J., & Kohli, A. K. (1996). Market orientation: Review, refinement, and roadmap. *Journal of Market-Focused Management, 1*(2), 119-135.

Jaworski, B., Kohli, A. K., & Sahay, A. (2000). Market-driven versus driving markets. *Journal of the Academy of Marketing Science, 28*(1), 45-54.

Kirca, A. H., Jayachandran, S., & Bearden, W. O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing, 69*(2), 24-41.

Kirk, J., & Miller, M. L. (1986). *Reliability and validity in qualitative research.* SAGE Publications Ltd.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *The Journal of Marketing, 54*(2), 1-18.

Kwon, O., Lee, N., & Shin, B. (2014). Data quality management, data usage experience and acquisition intention of big data analytics. *International Journal of Information Management, 34*(3), 387-394.

Maignan, I., & Ferrell, O. (2004). Corporate social responsibility and marketing: An integrative framework. *Journal of the Academy of Marketing Science, 32*(1), 3-19.

Malhotra, N. K. (2004). *Marketing research: An applied orientation* (4th ed.). Upper Saddle River: Prentice-Hall International.

Mankins, M. C., & Sherer, L. (2015). *Creating value through advanced analytics.* Bain & Company, Inc.

Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., et al. (2011). *Big data: The next frontier for innovation, competition, and productivity.* McKinsey & Company, Inc.

Merriam, S. B., & Nilsson, B. (1994). *Fallstudien som forskningsmetod.* Studentlitteratur.

Mordret, G. (2015). *Big data in science: Which business model is suitable?* Retrieved January 28, 2016 from http://adcreview.com/articles/big-data-in-science-which-business-model-is-suitable/

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing, 54*(4), 20-35.

Narver, J. C., & Slater, S. F. (1998). Additional thoughts on the measurement of market orientation: A comment on deshpande and farley. *Journal of Market-Focused Management, 2*(3), 233-236.

Onwuegbuzie, A. J., & Leech, N. L. (2007). A call for qualitative power analyses. *Quality & Quantity, 41*(1), 105-121.

Platt, J., Souza, R., Checa, E. & Chabaldas, R. (2014). *Seven ways to profit from big data as a business.* Retrieved Januari 28, 2016, from https://www.bcgperspectives.com/content/articles/information_technology_strategy_digital_economy_seven_ways_profit_big_data_business/

Quader, M. S. (2007). Human resource management issues as growth barriers in professional service firm SMEs. *Journal of Services Research, 7*(2), 115.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers* (2nd ed.). SAGE Publications Ltd.

Silverman, D. (2013). *Doing qualitative research: A practical handbook.* SAGE Publications Ltd.

Slater, S. F., & Narver, J. C. (1994). Does competitive environment moderate the market orientation-performance relationship? *The Journal of Marketing, 58*(1), 46-55.

Trost, J. (2010). *Kvalitativa intervjuer.* Lund: Studentlitteratur.

Voss, G. B., & Voss, Z. G. (2000). Strategic orientation and firm performance in an artistic environment. *Journal of Marketing, 64*(1), 67-83.

Yin, R. K. (2013). *Case study research: Design and methods* (5th ed.). SAGE Publications Ltd.

Appendix 1: Terminology and Definitions

Category leader: The largest or the second largest player within respective category.

Household panel data: Purchases made by a household, registered manually through a web-based survey. The most prominent provider on the Swedish market is the market research company GfK Sweden. The panel consists of 3000 households who are registering everyday commodities once a week.

Loyalty card data: Data collected from purchases where a loyalty card has been registered. A loyalty card is connected to a loyalty card program, which is an incentive plan that allows a retailer to gather information about its customers, in exchange for special offers and discounts. Loyalty card data is often reported per article, per consumer segment, per week. This data is information about what is bought by different consumer segments, as for example "families with children".

Point-of-Sales data (POS data): Data collected at the point of purchase through the checkout scanners at the store. It provides receipt information such as price, brand, product and amount bought. POS data is information about the sales from individual store**,** often reported per article, per store, per week. POS data is bought straight from the retailer.

Retail scanner data: Retail scanner data is consolidated sales information covering the whole market. More explicitly, it is aggregated POS data, collected from multiple sources (i.e. retailers) and bought through a syndicated vender. It is often reported per article, per retail store chain, per week. The most prominent provider on the Swedish market is the research company Nielsen. The data is directly transmitted to Nielsen from the checkout scanners, and then processed into databases from which the user can access the information, conduct customized analysis and generate reports.

Appendix 2: Interview Guide

Background

- Current position
- Primary duties
- Educational background
- Previous employments and positions
- Time of employment at company X

Company information

- How does the organizational structure look like at your company?

Data usage

- What kind of data do you use in order to understand the market?
    - What kind of data do you use in order to understand your consumers and their buying behaviors
    - What kind of data do you use in order to understand your competitors?
- Who/which department uses what kind of data?
    - What is it used for?
- How do you decide what kind of data to buy?
- What competences are needed in order to make the most out of the data?
- Do you use the data in order to develop new products?
- What do you consider being the greatest opportunities with the data?
- What do you consider being the greatest challenges with the data usage?

Data and organization

- How do you share insights between departments?
- Do you consider the different departments as open to each other's ideas?
- How do make a decision based on generated insights?
- How do you turn an insight to an action?

Loyalty card data

This text was by word presented to the interviewees before asking the following questions:

ICA will start to sell loyalty card data to its suppliers in order to give them the opportunity to learn more about the consumers and their shopping behaviours. While POS-data and retail scanner data give indications for "what, where, when, and how", the loyalty card data will also indicate "whom" the buyer is.

- Is this something you have heard of?
- Would you consider that you have a need for this data at your company?
- What do you think you will be able to use this loyalty card data for?
- How do you believe the loyalty card data will mean new possibilities for your business and for the market?
- How do you find this data in relation to existing data? How does it fit in the "data puzzle"?
- How do you believe the roles at the organizations will evolve in the future?
- What do you believe will be your greatest challenges for you based on that ICA rolls out the loyalty card data?

Appendix 3: Our Translation of Citations

6.1 Description of respondents

No quotes.

6.2 Big Data Today

6.2.1 The Data Landscape

Citation 1:

E_A: *" /.../det handlar ju om att förstå våra kunder för att nå ner till konsumenten. Och leverera någonting till våra kunder så att det blir en så att säga win-win-win i hela ledet. /.../ Nånstans idag är det ju väldigt fokuserat på lönsamhet, och då gäller det ju att förstå hur olika produkter bidrar med lönsamhet till våra kunder. För annars kommer vi ju aldrig nå ner till våra konsumenter i vilket fall som helst."*

E_A: *"/.../ it is about understanding our customers in order to reach the consumer. And to deliver something to our customers in order to create a 'win-win-win' situation through the whole chain so to speak. /.../ and today the focus revolves a lot around profitability, so we need to understand how different products contributes to the profitability of our customers. Because otherwise we won't reach our consumers anyhow."*

Retail data

Citation 2:

E_F: *"Vi är ganska bortskämda med Nielsen-data. Vi har leveranser i stort sätt… Man är van vid att det finns data när man behöver den. Det handlar nog mycket om vana. Vad man är van vid att jobba med"*

E_F: *" We are quite spoiled with Nielsen Data. We have deliveries basically… We are used to have the data when we need it. It is probably a lot about habits. What one is used to work with"*

Citation 3:

E_H: " Om POsen varit mer vidareutvecklad, så hade ju ingen köpt Nielsen, för det finns mycket frustration kring Nielsen utifrån deras monopolperspektiv som de har"

E_H: " *If the POS had been more developed, no one would have bought Nielsen. Because there is a lot of frustration with Nielsen due to their monopoly perspective they have"*

Citation 4:

E_B: "/.../ För alla möten måste ju då inledas med att 'Jaha, såhär ser vi på marknaden och såhär ser vi på… Ja men vi har dragit de här slutsatserna, jaha men vi har dragit de här'. Det är ju egentligen inte så effektivt, så scanningdatan har ju lite brister i och med att det inte är konsensusdata."

E_B: *"/…/ So all the meetings must start with 'okay, this is how we view the market, and this is how we look at…yes but we have drawn these conclusions', 'yes but we have drawn these...'. It is not very effective really, so the scanning data has it drawbacks since it isn't consensus data"*

Consumer data

Citation 5:

E_F: *"Det är sällan insikter bara kommer till en. Ofta är det nog så att man har ett gap man behöver fylla, man har en problemformulering som man måste lösa. Och då kan man hitta data som hjälper en att komma in på lösningen"*

E_F: *"Insights seldom just come to you. Often it's rather a gap you need to fill, you have a problem formulation you are supposed to solve. And then you can find data that guides you towards the solution"*

Citation 6:

E_K: *"Nielsen beskriver väldigt väl vad som faktiskt händer och hur konsumenterna beter sig. I form av vad de handlar. /.../ GfK kan vara förklarande för Nielsendata. Om vi tappar penetration i ett visst segment, frågar vi oss själva vilka de är. GfK kan förklara deras ålder, var de bor, och så vidare."*

E_K: *"Nielsen describes very well what actually happens and how the consumers behave. In terms of what they buy. /…/ GfK can then explain the Nielsen data. If we are losing penetration in one segment, we ask ourselves who they are. GfK can explain their age, where they live and so on."*

Own data

No quotes.

Other data sources

Citation 7:

E_{J2}: *"/.../ Det finns en mängd olika verktyg vi kan titta på. Men i huvudsak analyserar vi våra användare i den digitala delen för att förstå användaren – vad är det effektiva i annonsen."*

E_{J2}: *"/…/ There are a vast amount of tools to use, but mainly we analyse our users in the digital part in order to understand the user - what is effective in an advertisement."*

6.2.2 The Retailer Relationship

Citation 8:

E_H: *"Många gånger är det ju att vi samlar in mycket data kring vad konsumenterna vill ha, men kunderna har en annan åsikt om det, så de stoppar oss där"*

E_H: *"Often we have collected a lot of data about what the consumers want, but the customers are of a different opinion, so they stop us there"*

Citation 9:

E_B: "*/.../ Så det är ju svårt att, när de tänker mer på sina marginaler än på konsumenten, det blir liksom ett glapp någonstans. Och de har ju all makt att möta konsumenten."*

Translation: *"/…/ So it is hard to, when they think more about their margins than their consumers, a gap emerges. And they have all the power in terms of meeting the consumer"*

6.2.3 Internal Resources

Citation 10:

E_C: *"Datan i sig har inget värde om du inte lyckas dra rätt insikter från den"*

E_C: *"The data has no value if you aren't able to draw insights from it."*

Citation 11:

E_H: *"/.../ att bara vara siffernisse, då kommer du bara halvvägs"*

E_H: *"/…/ to simply be a number cruncher only takes you halfway."*

Citation 12:

E_H: *"De har ju olika bakgrund och och de har olika mycket intresse för siffror och data, så vissa måste man ju hjälpa mer än andra…"*

E_H: *"/.../ They have different backgrounds, and they have different level of interest in numbers and data, so some we have to help more than others…"*

6.2.4 Spreading Knowledge throughout the Organization

Citation 13:

E_{J1}: *"I somras drev vi ett stort portföljprojekt där alla kategorier och alla marknader i Norden var inkluderade. Det syftar till att vi ska förstå våra kategorier bättre, och våra konsumenter bättre. Och i den projektgruppen så har det funnits representanter från alla kategorier, plus säljorganisationen var med."*

E_{J1}: *"This summer, we ran a portfolio project where all categories and all markets in the Nordics were included. This aims for a better understanding of our categories and consumers. In this project group, there has been representatives from all categories plus the sales department."*

Citation 14:

E_K: "/.../ En kategori-vision, det är en tillväxtplan för en kategori. Och vad vi gör är att vi inventerar utifrån insikter, väldigt omfattande insikts-arbete och vi håller i olika workshops formellt där vi försöker kartlägga alla möjliga tillväxtmöjligheter. /.../ I det här kategorivisionsarebetet, det är en projektgrupp som under ett halvårs tid sitter med det här."

E_K: *"/.../ A category vision, it is a growth plan for a category. What we do is that we inventory based on insights, a comprehensive insight work, and we perform various formal workshops, where we try to map all possible growth opportunities. /.../ In this category vision work, a project group is working with this during half a year."*

6.2.5 Openness to Insights from other Departments

Citation 15:

E_D: "*Det är många liksom tävlingsinriktade människor, så är det någonting som man tycker är viktigt att få igenom, så får man se till att komma igenom bruset."*

E_D: *"/.../ There are a lot of competitive people, so if it something one think is of importance, one has to make sure to get through the noise."*

Citation 16:

E_K: *"Marknadsavdelningen kan ha en idé om en insats vi behöver göra vilket kommer ha effekt på en 3års-sikt. Och sen sitter man som kundansvarig, och behöver ha resultaten inom max 3 månader. /…/ Besluten man behöver ta för en snabb effekt mot det tålamod som behövs för att vänta några år är väldigt olika. .. det är nog klassisk marknad versus sälj."*

E_K: *"The marketing department can have an idea about a certain effort we need to do, which will have effect on a three-year term. Then the customer responsible, needs to have the results within a maximum of three months. /…/ The decisions needed to get a quick result compared to the patience needed for longer term results are very different."*

Citation 17:

E_K: *"/…/ Men då är frågan, behövs det? Och vad bidrar vi med?"*

E_K: *" /…/ But then the question is, is there a need for that product? And what is our contribution?"*

6.2.6 From Insight to Action

Citation 18:

E_C: *"Man måste ha rätt medicin."*

E_C: *"You need to have the right medicine".*

6.3 When Loyalty Card Data Comes into the Picture

6.3.1 Is there a Need for this Data?

Citation 19:

E_G: *"Det är ett jättebra komplement tror jag och du kan komma till ännu djupare insikter. För alla vill ju veta så mkt som möjligt om konsumenten och hur konsumenten lämnar fotavtryck när man rör sig i butiken. Hur konsumenten handlar. Det vill alla ha koll på i branschen såklart."*

E_G: *"I believe it is a very good complement since you can arrive at even deeper insights. Because everyone wants to know as much as possible about the consumer and how the consumer leaves footprint when moving around in the store. How the consumers do their shopping. Everyone in the industry wants to know that of course."*

Citation 20:

E_C: *"/…/ Säg när vi kollar cross-shopping, man kommer kunna se hur man köper produkter i större utsträckning. Datan understöder information och kanske identifierar gaps i marknaden."*

E_C: *" /.../ Like when we look at cross-shopping, we will be able to see how people buy products in a greater extent. The data support information and might identify gaps in the market."*

Citation 21:

E_B: "*Jag känner såhär, okej jag är villig att betala mycket pengar för datan, men i så fall ska den vara mycket bättre. Jag vill ha mer tydlighet, bättre software, färdiga rapporter, självanalyserande produkter. Jag vill kunna trycka på en knapp och få en bild.*"

E_B: *"I feel like, okay I am willing to pay a lot of money for the data, but in that case it should be much better. I want more clarity, better software, finished reports, self-analyzing products. I want to be able to push a button and get the picture."*

Citation 22:

E_C: *"/.../ Finns det ett behov? Ja, absolut. Det tror jag. Till vilken prislapp och till vilken utsträckning, det låter jag vara helt osagt."*

E_C: *"/.../ Is there a need? Yes, absolutely. But to what price and to what extent? That, I leave totally unsaid."*

Citation 23:

E_B: *"Tanken med datan är ju, som jag förstår det, att vi själva ska göra jobbet. /.../ Vi jobbar redan jättemycket och det mest naturliga skulle vara att Customer Marketing Managers skulle vara de som skulle arbeta med den nya datan och det är säkert många saker som de skulle kunna göra med den. Men då behöver vi ta bort något annat och vad ska man prioritera? Egentligen skulle jag bara vilja börja om från ett blankt papper."*

E_B: *"The idea with the data, as I understand it, is that we are going to do the work by ourselves. /.../ We already work a lot and most naturally the Customer Marketing Managers would be the ones working with the new data and there are certainly several things they would be able to do with it. But then we need to cut something else and what do you prioritize? /.../ As a matter of fact, I would want to start over from a blank piece of paper".*

Citation 24:

E_K: *"Som ni kan se i bilden, någonstans här hamnar man. Ja, kundklubbsdatan tillför något extra, men är det värt priset?"*

E_K: *"As you can see in the picture, somewhere like this is how we will end up. Yes, the loyalty card data contributes something extra, but is it worth the price?"*

6.3.2 The Effect on the Data Landscape

Citation 25:

E_K: *"Du är låst med dina insikter endast till ICA."*

E_K: *"Your insights are locked only to ICA."*

Citation 26:

E_C: "*Med GfK-datan kan du se hur man förflyttar sig mellan kedjor. /…/ Men sedan kan man fråga sig om GfK gör det ändå? Skriver du alltid ner den där snickers du köper på exempelvis 7-Eleven när du kommer hem?"*

E_C: *"With the GfK data you can see how the consumers switch between the chains. /…/ But then you can ask yourself, does GfK do that anyway? Do you always write down that Snickers you bought at for example 7-Eleven when you come home?"*

6.3.3 The Effect on the Retailer Relationship

Citation 27:

E_F: *"Man kommer få ytterligare ett gemensamt språk. Det innebär ytterligare en gemensam beröringspunkt som man kan prata om, som man kan använda för att utveckla den gemensamma affären."*

E_F: *"You will get one more common language. It implies that you get an additional common point of contact to talk about, as can be used in order to develop the common business."*

Citation 28:

E_K: "/…/ Vad våra kunder köper från oss, och vad de sedan säljer till sina kunder, slutkonsumenten. Det är core business. Jag tror det alltid kommer trumfa andra saker, så som vilken datakälla du köper."

E_K: *"/…/ What our customers buy from us, and what they in turn sell to their customers, the end consumers. This is core business. I believe that will always triumph other things, such as what type of data source you buy."*

Citation 29:

E_C: *"Där har ICA ett jobb att göra. /…/ De måste sälja nyttan till leverantörerna. Det märks att de har inte suttit på andra sidan."*

E_C: *"ICA has some work to do. /…/ They need to sell the benefits to the suppliers. It is obvious that they have not been on the other side."*