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Big data and advanced business analytics in customer relationship management in the retail settings

Summary

Introduction

Nowadays Big Data (analytics) has an impact on all sectors of the modern economy and the topic has received increasing attention in academia. The research on Big Data concentrates both on the technological domain, accenting such topics as infrastructures, data management, algorithms, techniques, analytics, as well as on business applications. The research stream that focuses on business applications, demonstrates that advanced analytics and data-driven decisions results in added value for companies (Davenport et al., 2012; McAfee et al., 2012; Boyd and Crawford, 2012; Kumar, 2017).

In the thesis it is highlited, that the benefits and promises for Big Data (analytics) can be achieved, although it does not necessarily. This will depend on the organisation's ability to extract benefits from Big Data and the ability to address the multidimensional challenges related to the Big Data analytics projects.

An analysis of the literature has shown that research on the organisational aspects and challenges that are important when the companies attempt to create business are still limited. There is also limited research that includes context, in which the company operates. In the result, the prior research suggests that the companies have to use the same resources and focus on the same elements to gain value from their Big Data (analytics) investments.

As emphasised in the literature, Big Data (analytics) has an impact on all sectors of the modern economy and all areas of a company's operations can be considered relating them to Big Data. One of them is the connection of Big Data (analytics) and CRM (customer relationship management).

The diversity of CRM (customer relationship management) concepts that is considered in the literature from different perspectives and it is reflected also in the literature that connects Big Data (analytics) and CRM concepts. The growing awareness of impact of Big Data and a new age technologies and its potential impact on CRM has contributed to an increase in the number of publications on the subject, however a research on the subject is quite scattered.

The thesis is grounded in an appreciation of the potential of Big Data and advanced analytics in the CRM (customer relationship management) subject area. The more a company is able to harness the potential embedded in data and in usage of new-age technologies, the more precise and customised value proposition can be provided to the customers. For the purpose of this thesis, the connection between Big Data (analytics) and CRM (customer relationship management) was defined as a company's ability to use technology and analytics to gather customer intelligence during the purchase cycle across multiple touch points and to integrate it in the company's processes. In the end, CRM should result in delivering valued customer experience.

This thesis fills the research gaps by exploring Big Data (analysis) and CRM (customer relationship management) in retail settings. The features of retail makes it can be studied from different angles with specific context consideration. The context in which the thesis is grounded is the fashion (clothing) retail.

The fashion retail sector is a dynamic business, characterised by demand uncertainty, that results from high variation in customers' tastes, fashion trend and consuming behaviours (Ren et al., 2019). Availability of data, advances in technology, technological innovation and the process of digitalisation affects this part of retail equally strongly as other one and offers both new possibilities and challenges.

The thesis adopts the assumption, that positioning of the study in the retail fashion sector has a certain consequence for CRM (customer relationship management), since this retail setting refers to the high-hedonic product category, which means that a shopping experience is strongly connected with emotive aspects (Blázquez, 2014). Thus, the delivery of a valued customer experience (Peelen et al. 2007) should be the core objective in the CRM strategy.

Scarcity of research, fragmented knowledge on the subject: how organisations should be structured in order to benefit from Big Data (analytics); which impact can have the specific context, and a relatively new area of academic exploration that yet been thoroughly investigated, got rise to three research questions:

1) How can Big Data (analytics) relate to customer relationship management?
2) What are the potential barriers to gaining value from Big Data (analytics)?
3) How can specific contexts differentiate the way of using Big Data (analytics) and barriers to gain the value from Big Data (analytics)?

The overall aim of the thesis is: first, to critically review the concept of Big Data (analytics), second, to explore various aspects of CRM (customer relationship management) from the perspective of the potential value from Big Data (analytics), and third to identify which are obstacles for Big Data (analytics) deployment in a retail fashion setting to improve relations with the customers.

The objectives of the thesis are to provide an increased understanding of the potential barriers for Big Data (analytics) implementation in the specific context (fashion retail setting); to contribute to the development of a theory on Big Data (analytics) in connection with CRM (customer relationships management).

Chapter 1. Big Data and advanced analytics

Big Data concept is usually characterised in the literature by the so-called "Vs" models. "Vs" models consider Big Data through characteristic dimensions such as volume, variety, velocity, veracity, variability, and visualisation. In the chapter 1, the concept of Big Data (analytics) was critically reviewed. It described first the specific dimensions of "Vs", as well as point out on the development and the extension of "Vs" over time: from the primary three dimensional "3 Vs" model (volume, velocity, variety) of data to models enriched by the new "V" features such as: value, veracity, variability, and visualisation.

Value, typically recognized in the literature as one of the dimensions of Big Data, was purposefully described in this thesis as a distinct dimension that can occur, although it does not necessarily. This will depend on the organisation's ability to extract benefits from Big Data.

Chapter 1 presents capabilities and resources that the companies have to develop, showing that there are multidimensional and include: a combination of data, technological, organisational resources, managerial, technical, and analytical skills, and a data-driven culture.

Key component in the value generation process that organisations can derive from availability of different data is the usage of Big Data analytics. The substantial value of Big Data analytics lies in its ability to support businesses' effective decisions based on data. In the chapter 1, the classification of types of Big Data analytical methods, that are characterised by different levels of complexity and its potential contribution to the added value for organisation was presented. The general intention was to show that with the availability of advanced Big Data analysing technologies and possessing real capability to conduct more complex analysis, organisations can be better attained to improving business decision-making processes and making real-time actions. Thus the different analytical levels were described, taking the assumption that every next level of the analysis should strengthen the actionable power of the analysis. The overview starts with the most basic, descriptive and diagnostic analytics and further moves to the more complex sophisticated analysis: predictive, prescriptive and cognitive.

In the final part of this chapter, Big Data Maturity Models that present stages of the company's development were described. The awareness on which state the company is in and which steps should be done can facilitate the implementation of Big Data and advanced analytics projects. In the domain of Big Data an assessment of a company's Big Data / analytics maturity is usually carried out according to a few criteria, such as an assessment of technical infrastructure, analytics culture, data and analytics skills and competencies. The assessment models are used to check company readiness to deploy Big Data projects and identify ways for development. In the final part of this chapter, selected maturity models have been described, such as: The Data Warehouse Institute (TDWI), Business Monitoring, Business Insights, Business Optimization, Data Monetization, and Business Metamorphosis, the Temporal Big Data Maturity Model (TBDMM).

Chapter 2. Toward data-driven customer relationship management

In this chapter of the thesis, the review of previous research on CRM (customer relationship management) and its roots RM (relationship marketing) was conducted. Since it is widly accepted, that relationship marketing (RM) established a theoretical framework for customer relationship management (CRM), the chapter starts with the literature review of relationship marketing. It presents selected definitions, that relate to the most often cited defining constructs, such as trust, satisfaction/experience, loyalty, commitment, service quality, communication (Agariya, Singh, 2011). The chapter also shows the impact of the certain schools on the shift of perspective form transactional to relational, especially the higly influencial one The Nordic School of Service Marketing (Nord Traditions).

The concept of CRM (customer relationship management) is described in the literature from different perspectives, from narrowly and tactically, limited to a particular technology solution, to a strategic, holistic approach that includes people, processes, and technologies (Payne and Frow, 2005). Taxonomy developed by Zablah et al. (2004) divides CRM concepts into five major perspectives: CRM as a process; CRM as a strategy; CRM as a philosophy; CRM as a capability; CRM as a technology.

The literature also describes the customer relationship management (CRM) concept, emphasising its components, such as company vision, strategy, valued customer experience, organisational collaboration, information, processes, technology, and metrics (Peelen et al., 2007). This allows the concept to be embedded in the strategic and tactical framework of the organisation and to be better operationalised.

Customer relationship management concept is influenced by customer experience research, therefore, in this chapter a brief overview and reflection on the customer experience, has been presented: definition of customer experience and related concepts: experiential marketing and experience economy.

The literature, that relates to the customer relationship management (CRM), often described value, that has dual character, since it is about creating value for customers, as well as receiving value from customers (Kumar and Reinartz, 2016). A metric that allows the company to evaluate the degree in which its organisation receives value from the customer is customer lifetime value (CLV). The chapter also addresses these topics.

The final part of the chapter is dedicated to Big Data and advanced analytics for CRM (customer relationship management) and the role of the new-age technologies for understand consumer. Different studies highlight the added value for customer relationship management

if adopting Big Data analytics or advanced tools and technologies. According to Kumar et al. (2021), the new-age technologies such as i.a. AI and MI can potentially extend the functions and help existing CRM systems by powering the data mining process, adding advanced analytical techniques that in the results automate data input, forecast updating, personalise customer responses, and communication contents etc. The new-age technologies can automate routine tasks, dynamically segment customers, and help customise offerings (Shankar, 2018).

M. Anshari et al. (2019) argue that the emergence of Big Data brings a new wave of Customer Relationship Management (CRM)'s strategies in supporting a range of CRM activities and contributing to generating CRM strategy. The key role of Big Data in CRM is improving the knowledge about customers and supporting the long-term relationship through understanding customers' life cycle and behaviour.

When considering CRM (customer relationship management) in the context of current trends in retail, i.e., transition toward omni-channel models, the increasing amount of data, development of new technologies and the changing behaviour of current customers, the CRM (customer relationship management) concept should be considered in a comprehensive way. This broad concept should cover not only activities related directly to customer relationship management, such as for example the efforts to acquire new customers and retain the existing one or the activities to identify the most profitable customers. It should include the company's ability to use technology and analytics to gather customer intelligence to integrate it in the company's processes.

Chapter 3. Business strategy in the fashion retailing

In the first part of the chapter, the importance of flexible, systemic, and dynamic approaches to strategy formulation was highlighted since the retailers operate in the era of highly dynamic and radical changes. Retailers have begun to integrate their channels through an omni-channel approach to enhance customer experience. The key characteristic of omni-channel retail is when the boundaries between physical and virtual environments blurred and *the seamless flow of customers, information, and inventory between multiple channels over the course of the shopping experience"* (Jasin et al. 2019, p.17) has been observed. Omni-channel is highly influential trend in retail. In this chapter, attention is primarily given to definitions, challenges of the omni-channel strategy and examples of omni-channel approach in fashion retailing.

The part of this chapter was dedicated to new-age technologies in the omni-channel fashion retailing. Availability of data, advances in technology, technological innovation and the process of digitalisation affects the fashion retail sector equally strongly as other one. Fashion retailers include in their business strategies new possibilities that give availability of data, advances in technology, technological innovation, and the process of digitalisation. In this chapter a few examples how the fashion retailers used advanced analytics was presented.

The chapter 3 also includes the overview of business strategies in fashion retail sector in the time of pandemic crisis, that was strongly affected by the COVID-19 disruption compared to other retail segments. The ongoing uncertainty and the related economic lockdown reorganised global business, forcing companies to react quickly and renew their strategies.

In this chapter the typical strategies in the fashin retailing to tackle the crisis were described. One of them was enhancing digitalisation. COVID-19 pandemic has sharpened the role of digitalisation, especially that online sales has become a key business operation in the clothing sector. Tha part of the chapter was dedicated to the issue of digital transformation, its characerstics depicted in the definitions of different authors and also its posible impact on the companies performance. Other strategies characteristic for the fashion retail in the pandemic time described in the chapter are: the focus on casualisation and the incorporation of sustainability into business strategy.

In the final part of this chapter characteristics and prospects of the Polish clothing retailing market was described in detail. The brief overview includes such aspects as development of sales value, description of different formats such as: store chain brands present in the market, different formats such as: clothing chains specialist, non-chain clothing, such as e.g., independent stores, large-format grocery stores, online stores, e- commerce platforms, catalogue sales, marketplaces, and open-air markets. Final part of the chapter was also dedicated to the overview of the situation of the Polish clothing retailing in the time of pandemic crisis.

Chapter 4. Empirical research - case description and data analysis

Chapter 4 describes philosophical assumptions, the methodology of the study and the findings of the empirical study. This chapter provides a description of research methods and how the data were collected and analysed.

The research in this thesis is exploratory and it is supposed to contribute towards the theory building. The theory building focuses on developing existing theory, and explanation of phenomena, that knowledge is at an early stage of development. Due to limited previous empirical research in the area of Big Data and advanced analytics in customer relationship management in the retail sector, a case study approach was deemed to be the most suitable in order to provide a rich, intensive and holistic description of a particular phenomenon bound in a specific context.

The case study presented in this thesis is an in-depth single longitudinal case study on Big Data and advanced analytics in the area of customer relationship management in the context of typical representative of fashion (clothing) retailing. The choice of a single case study was supported by the need to explore emerging complex phenomena within real-life settings (Eisenhardt, 1989) and focus on the details. Presented case study is following the abductive approach of systematic combining, where theoretical framework, empirical fieldwork, and case analysis evolve simultaneously (Dubois and Gadde, 2002). In studies based on this approach, the research is a systematic, path-dependent process of matching theory and reality, where constant movement 'back and forth' between theory and data collection can be observed. This process might redirect the original theoretical framework, nevertheless, might bring fruitful, unanticipated empirical observations and enrich research projects. An abductive research process is appropriate particularly in the theory development process, that is the aim of the research project included in this thesis.

The ontological approach of this thesis is the realism paradigm, that acknowledges that regularities and fundamental patterns can be found in a social reality. Nevertheless, all forms of scientific realism accept the influence of certain theories, historical, cultural, social context on social reality (Miles and Huberman, 1994). In the research conducted for the purpose of this thesis, reality is considered as existing objectively and independently from the cognition of the employees, management board, customers, and other stakeholders.

The epistemological approach of this thesis basically is grounded in an appreciation of scientific realism, since the goal is to develop and present the knowledge about reality, even though such knowledge can nor be known with certainty. Nevertheless, I do realise that when

choosing the interview method, as part of the research project, it is difficult to reject the position of interpretivist, that social reality is constructed. It is considered that the cognitive position of qualitative researchers is usually interpretivism, which is based on the belief that a deep understanding of the studied phenomenon is possible thanks to interpretation of its understanding by their participants.

The methods used in the research projects include: obeservation, interviews and series of experiments on transactional data provided by the study retailer.

Observations in this research project were made between 2015-mid of end 2021 during my work in a studied company. Longitudinal case study research enabled me to observe development over the time. During this time, I participated in the meetings, studied documentations in the form of materials provided by the studied company: documentations of projects, description of machine learning models, presentations, protocols from the appointments. I tried to gain a rich set of documents and presentations, especially interesting were the documents that included presentations of plans and important projects in the area of customer relationship management and analytics.

The collection and analysis of the documents continued throughout the whole research project, including when I started the interviews. I conducted together 20 interviews (beetween March of 2020 to Ferbruar 2022). When preparing the interview guide, I have chosen the semi-structured approach. I prepared the interview guide, which was structured into four areas (background, data, analytics, customer relationship management) with the list of questions which were adjusted before every interview. In order to transcribe the audiotapes, Fireflies Software was employed. All transcriptions were listened to by me to check the quality of the textual material. To prepare and structure the collected textual materials for analysis, the checked transcriptions were imported to Computer Assisted Qualitative Data Analysis Software (CAQDAS) – Nvivo Release 1 by QSR International.

By coding I took the approach of derivation of codes from the theory. In practice, this meant developing the preliminary codes on the base of the conceptual framework adopted in the thesis and interview guide. This predetermined coding scheme evolved and changed based on the information learned during the reading texts and while emerging the new ideas, notions and new ways of categorising data, what is accepted in the methodological literature (King, 1998, Ritchie et al., 2003 in: Gibbs, 2011).

Another method I used in the study was experiments on transactional data provided by the study retailer. In order to check whether it would be possible to use the results obtained from the survey in marketing communications aimed at customers registered in the database,

I conducted a series of experiments. The experiments aimed to create a model based on advanced analytics, classifying the customers to segments defined in the survey. I worked on data analytics platform KNIME, which is supposed for creating data science.

The final part of this chapter presents: description of the case retailer, the omni-channel maturity of the studied retail company and finally the findings of the empirical study. The results of the empirical research are presented in the following way: the findings from interviews are triangulated with these from participatory observations and with the analysis of the retailer's internal documents. This procedure is always supported and supplemented by findings from the literature. To give the reader an in-depth view of how the informants perceive the specific processes, interrelations and challenges for the company, the excerpts from interviews were included. Chapter 4 also presents the results of a series of experiments on transactional data provided by the studied organization. The series of experiments was designed to create a model based on advanced analytics, classifying customers into survey-defined Segments.

5. Concluding discussion

The objective of the final chapter of this thesis is to discuss the findings of the study related to the research questions. Concluding discussion was divided on two parts: discussion on Big Data and analytics in the context of CRM (customer relationship management) and discussion on the firm's capability to develop the enterprise's resilience to the crisis.

In the context of the thesis, the sign of the organisation's excellence was revealed in the ability to enhance digitalisation as a strategy in a pandemic crisis. In order to achieve a level of digitalisation that enables the company to tackle the crisis effectively, the process of digitalisation had to start earlier and be developed to such an extent that, when the crisis arrives, the company can accelerate it and adapt to the situation. On the other hand, digitalisation may support a company's agility, flexibility, and responsiveness of organisation (Micelli et al., 2021). Surviving the pandemic crisis will depend much on the digital and analytics capabilities (Gonzalo et al., 2020).

Big Data projects, including the use of Big Data in CRM strategies, requires the engagement on the different levels of the organisation to ensure dedicated IT architecture, skills and design the actions that should be undertaken for implementation. Using the data, the studied retailer could track customers in each phase of the customer life cycle: monitor the activity status of their customers, predict their churn or defection probability, estimate the

chances of recapturing lost customers, steer cross - or up-selling to other products or expanding to different sales channels. Systematic, institutionalised tracking of customers in every stage of the customer life, on every touchpoint could significantly increase the knowledge about customers. The studied retailer however relied mainly on analysis that doesn't really enrich knowledge but is a basic monitoring of the performance.

The findings of the research show the possible barriers to develop digital and analytics capabilities and implement Big Data (analytics) in the customer relationship management area. There are: lack of involvement of the top management; the constraints of human resources; uncertainty about choosing the best solution; lack of consistency in how to implement this in practice; fear of taking responsibility if the change does not bring immediate results; latent resistance of employees connected with the fact that new projects are connected with tackling various obstacles, such as additional work that later will not be appreciated or the solution will not be used in the company; not using analytical skills of the employees; lack of the strategy that would guide company towards the analytics and usage of Big Data. The company did not make use of any technologies, typically used to store, process, analyse, and visualise Big Data, such as Hadoop, Spark, Cassandra, HBase or NoSQL databases.

As findings of research have demonstrated, that even having available data from different sources, the company can fail to use the opportunity to convert it into a business asset. Although the studied retailer collected data and operated the loyalty program with above millions of buying customers only in Poland, it was not able to use data to create and transfer the knowledge about customers and transform it into actions that could improve customer experience. Despite the retailer providing the customer with the opportunity to participate in the loyalty programme, it failed to realise its full potential. The department with the greatest potential for creating customer knowledge tended to be marginalised being not in the centre of attention. Its role was limited to preparing reports on the purchasing behaviour of customers, i.e., purchase value, frequency of purchases, shares of each channel in sales, as well as the selection of the customers for communications and preparation of a few campaigns and triggers.

Creating a superior value proposition requires having knowledge about customers and integrating it with the processes to control activities throughout the customer life cycle. Success in delivering an excellent value proposition can enhance customer experience. This is not possible however without knowing customers: their needs, expectations, and reservations.

The customer knowledge competence has not been created by the studied retailer. It had a negative impact on the different areas and operational tasks in the company. Not understanding who the company's current and potential customers are, what are their needs, expectations and experience with the company caused, that the processes did not work properly, and the activities and marketing actions were prepared not based on the knowledge of the customers.

The findings from interviews suggested that wrong working processes or the lack of processes can have a damaging effect on customer experience. The informants indicated in their responses on the not properly worked processes that were not aligned and not created with the aim to provide a superior value proposition to customers. This is contrary to the recommendations of the literature, which emphasises the importance of the adjustment of internal processes to the customers' needs and the values expected by the customers (Skrzypek, 2012; Frigo, 2003; Davenport, 2005; Richard, Jones, 2008; Peelen et al., 2009).

One can argue that there has to be knowledge of the customer first, and certainly the role of Big Data (analytics) is to improve that knowledge, to make it more specific and to react in real time. But for that, specific skill sets, and resources need to be developed and deployed. Focusing on it without targeted actions, starting and not finishing projects exhaustion of the resources. In the results, analytical projects do not work well and resources that could be better used are neglected.

Relaying too much on data embedded in the fragmented reports and not on knowledge can bring a destructive impact, as was observed in the studied retailer. It manifested in producing many fragmented, descriptive reports, which were not very readable and depending on the person who interpreted them, different conclusions could be drawn. This was risky, because it is difficult to control the processes and company's daily operations, which can lead to the wrong decisions.

The COVID-19 pandemic clearly unmasked the weaknesses of the studied organisation, that symptoms were visible before pandemic time. They were illuminated for example in the rather poor financial performance in terms of operating profits, problems in the online shop, mobile channel (application), stock management, as well as in the high number of points to improve, identified during the audit conducted by the consulting companies. The retailer did not use the pre-pandemic time for improvements, focusing on "quick money". The company's intelligence was not created.

Companies that were digitally and analytically mature before pandemic crisis outperformed competitors without solid digital and analytics capabilities. Ability to adapt to the crisis situation and to hold a solid liquidity position was driven by the expertise in usage of advanced technologies

Concluding remarks

When I started work on my thesis, I gave in to the widespread enthusiasm, reinforced by publications of consultancies on the possibilities and opportunities offered by Big Data (analytics). The retailing sector seemed to be an ideal setting for discussing all the benefits that could be envisioned from the use of Big Data (analytics). When I started my research work, I believed that every company could benefit significantly from it. Over the years, as I have become more familiar with the subject through research, I have also become convinced that the context in which an organisation operates and the resources at its disposal are crucial. Uncritically following the promises made by various authors in academia and business and taking efforts to realise them can do more harm to an organisation than strengthen it.

Before embarking on a Big Data (analytics) project, designing, and investing in IT architecture, a solid analysis of needs, objectives to be achieved and priorities is required. Omitting this step can result in costly investments that will not generate additional value and may even undermine performance.

Past research, as well as findings from this thesis research, revealed that moving a company to the next level of analytics and data use is not an easy process and requires effort, investment, alignment and change in different areas of the company operations. The risk may be overestimating the resources available and seeking to apply solutions, analytics, technology that the company is not ready for. This can lead to costly and ultimately unsuccessful investments and the loss of well-developed capabilities and already existing resources that could contribute to enhancing the customer experience

The usage of Big Data (analytics) can be a new way of gaining deeper insights and knowledge, hence it should be developed systematically and thoughtfully. Introducing a complex Big Data project and advanced analytics, in a situation, when the processes are not working well on many levels would add another level of complexity with which the company might not be able to cope, while losing available resources.

Prior literature has described the challenges to unlocking the value of Big Data (analytics) while highlighting various aspects related to technology, human resources, and

organisational barriers. Research conducted for this dissertation develops this view by drawing attention to the need of reviewing the company's resources and needs prior to making decisions on how and to what extent to use Big Data. It is important to first assess how Big Data (analytics) can contribute to improving customer related issues in order to choose reasonable actions. When addressing the human resources aspects, prior research focuses mainly on the need to hire data scientists and to break down silos between teams. However, the literature neglects an aspect that is worth exploring further such as the latent resistance of the analysts themselves due to their bad past "employee experiences", related, for example: to technical difficulties; the difficult process of convincing members of the organisation to implement new solutions; the non-use of work already done; influencing the design of projects by people who do not have the relevant knowledge but have the position and ambition to influence analytical projects.

Another aspect that is not discussed in the prior literature is the effect of malfunctioning processes that can reduce the potential value of implemented analytical projects or new age technology implementations. Additionally, such bad working processes block the human resources. The employees instead of taking care of developing the initiatives (analytics) to improve customer experience, are engaged in repairing the damages caused by not working processes or seeking the reasons of this state.

Scientific contribution of the research conducted for the purpose of this dissertation to the literature on Big Data (analytics), should be considered from the perspective of 1) Big Data (analytic) in connection with CRM (customer relationship management), 2) challenges to exploit value from Big Data (analytic). Prior literature has described the challenges to unlocking the value of Big Data (analytics) while highlighting various aspects related to technology, human resources, and organisational barriers. Research conducted for this dissertation develops this view by drawing attention to the need of reviewing the company's resources and needs prior to making decisions on how and to what extent to use Big Data.

The findings of the study for this dissertation confirm the importance of the knowledge about customers but demonstrating it from the other side: what can happen, when the company doesn't create knowledge about customers across the company. The empirical study revealed that the lack of knowledge about customers has a negative impact on the flow of processes carried out in organisation. It can lead to misunderstandings, self-interpretation by the different employees, preparing marketing actions that are not tailored to the needs of customers or finally proposing the offer of products, which are not in line with customers' expectations. Final

consequence is very risky for the company. It can lead to the decrease of customer experience and drop of customer satisfaction, which will probably result in the customers' churn.

There is no doubt that companies can benefit from the use of data to build more lasting customer relationships and improve the customer experience. However, on the other hand, waiting until a company has acquired the right skills and capabilities without making good use of the information already available on customers' preferences does not support customer relationship management.

All research studies have certain limitations. The limitations of the study are due to limitations related to its qualitative approach, that limits the possibilities to generalise the findings of this study. Even though the objective of this study was to contribute to the deepening understanding of Big Data (analytics) in connection with customer relationship management in the fashion retail settings, the small sample size, consisting of only one fashion retailer needs to be acknowledged as a limitation of the study. However, the chosen case retailer has all the typical features of an international fashion chain, so the results of the research can fit to other companies in the sector. The dissertation also makes several contributions to the literature. It provides also interesting opportunities for future research, such as: 1) which are the consequences for the business if analytical projects are implemented, investments in IT systems are made, however the strategies and clear goals were not defined prior, 2) How not working processes in the organisation can inhibit the effect of implemented new age technologies and implemented analytics, 3) How non controlled analytics can harm a business by obscuring the picture of business performance and relationship with customers, 4) How employees' bad experiences and their hidden resistance can hinder the development of new projects and solutions.