Teknologiska strategier för personlig marknadsföring i dataspelsindustrin

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Technology Strategies for Personalized Marketing in the Computer Game Industry

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Abstract

The computer game industry has during the past years performed a paradigm shift from physical to digital online retailing based on game portals. Due to the many possibilities Big Data in combination with personalized marketing provides, especially in the form on in-game shops in the software, it is interesting for the computer game companies to investigate how this marketing approach can be performed most beneficially.

Since the computer game industry has not been thoroughly investigated in relation to personalized marketing and customer integrity, it has in this study been performed as a predictive research, based on how personalized marketing is used in other industries. This benchmark has been combined with a literature study as well as a case study on a Swedish computer game company, Paradox Interactive in the form of personal interviews, a customer survey as well as gathering of internal data. The analysis of the chosen industries, the grocery store industry, the travel and hospitality industry as well the online gambling industry, demonstrates the importance of offering the customers relevant marketing offers that benefits the customers as well as the company. This approach has been shown to imply a positive spiral of increased customer loyalty and raised revenue for the company. The performed customer surveys emphasizes high loyalty, satisfied customers, positive attitude for a loyalty program as well as for an in-game shop as well as a majority of positively minded customers for personalized marketing. The negatively minded was shown to be affected by data security, the feeling of being monitored as well as the fear for data spread.

The investigation further shows a high level of technology knowledge among the computer game customers. This increases the importance of offering high data security as well as describes the used approaches for the customers. Based on these results recommendations related to the implementation of personalized marketing was developed for computer game companies. These emphasizes the importance of using secure techniques related to the data security and the explicit information related to this, which is argued to lead to increased trust
amongst the customers and an increased willingness to share personal data. Further the data and information related to the customers should be gathered from different sources and be analyzed together in order to increase the deep of the knowledge about the customers, which enables more accurate and relevant offers. This relevance should be high, but well balanced in relation to the negative aspects related to customers’ possible feeling of being monitored.

For increased knowledge about the customers as well improved customer loyalty the computer game companies should implement loyalty programs, which should be well aligned with the image of the company. This study contributes to the theoretical field related to personalized marketing by investigating how current models and theories aligns with, or should be modified in order to match, the computer game industry. Besides from this it contributes with theories related to data security within the field of personalized marketing, focused on personal integrity and privacy. Theories related to the importance of trust from the customers and the relation between trust and loyalty has been verified for the computer game industry. The importance of identifying a well-balanced level of the personalization has been verified, which in turn falsifies the theories emphasizing that maximized personalization is to strive for. Theories related to key aspects to take into consideration related to data security and handling of personal data has been verified for the computer game industry related to the handling of Big Data.

**Key-words:** Personalized marketing, Privacy concern, Software, Computer games, Sales paradigm, Cryptography, Data security
Sammanfattning

Dataspelsindustrin har under åren gjort en resa från fysisk försäljning i butik till digital försäljning via spelportaler på internet. I och med de många möjligheter Big Data i kombination med personlig marknadsföring möjliggör, speciellt i formatet av en inbyggd försäljningskanal inuti mjukvaran, är det av stort intresse för företag i spelbranschen att undersöka hur personlig marknadsföring mest fördelaktigt utförs.

I och med att dataspelsindustrin ej blivit undersökt med avseende på personlig marknadsföring och kunders integritet tidigare, har detta utförts i form av en förutsägande undersökning baserat på användning av personlig marknadsföring i andra industrier. Denna utvärderande analys har kombinerats med en litteraturstudie samt en fallstudie på det svenska dataspelsföretaget Paradox Interactive i form av intervjuer, en kundkät samt insamling av interna data. Analysen av de valda industrierna, matvaruhandeln, rese- och hotellindustrin och onlinespelindustrin, påvisar viken av att erbjuda kunderna relevanta erbjudanden som i längden gynnar såväl kunden som företaget. Detta har påvisats leda till en god spiral av ökad kundlojalitet och ekonomisk vinst för företaget.Utförda kundundersökningar påvisar hög lojalitet, nöjda kunder, positiv attityd till sålväl en inbyggd butik i mjukvaran som ett lojalitetsprogram samt en övervägande andel positiva attityder för personlig marknadsföring.

Undersökningen visar även på en hög kunskapsnivå inom data hos kunderna, vilket höjer Vikten av att erbjuda hög säkerhet och även av att förmedla detta till dem. Baserat på dessa resultat har rekommendation gällande implementationen av personlig marknadsföring tagit fram för dataspelsföretag. Dessa framhäver viken av att ha hög datasäkerhet och förmedla detta till kunderna, vilket i sin tur gör kunderna mer trygga och villiga att dela personlig information. Vidare bör data och information om kunderna samlas in från olika kanaler.
och analyseras tillsammans i syfte att öka kunskapen om kunder, vilket ger möjlogenhet att
erbjuda kunderna mer träffsäkra och relevanta erbjudanden. Denna relevans skall vara hög, men väl avvägd mot den negativa effekten som uppstår om kunden känner sig övervakad.

För utökad kunskap om kunderna och samtidigt generera höjd kundlojalitet skall företag i

**Nyckelord:** Personlig marknadsföring, Privatliv, Integritet, Mjukvara, Dataspel, Säljparadigm, Kryptografi, Datasäkerhet
Foreword

This Science of Master’s Thesis was written and conducted for the department of Industrial Engineering and Management at the Royal Institute of Technology (KTH) in Stockholm, Sweden. The thesis is based on a 30 European Credit Transfer System credit university course work during the spring term of 2015.

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This study had not been possible to write without the help of a number of people. At first I would like to thank Paradox Interactive for letting me perform this study in collaboration with the employees. By letting me get a thorough understanding of Paradox Interactive as a company as well as the computer game industry as a whole I have been able to perform this recommendative research. Based on the combination of internal and external information I have managed to perform a study which is valuable for Paradox Interactive as a company, but also for the industry as a whole. The findings have helped me to contribute to the scientific area of personalized marketing, which I believe will be useful for further academic work in the research area as well.

I would like to direct a specific appreciation to my supervisor Tobias Sjögren at Paradox Interactive for the inestimable short weekly meetings we have had, during which I have been able to discuss my thought of the work in general. Secondly I would like to thank associate professor Jannis Angelis at KTH, the Royal Institute of Technology in Stockholm, for the guidance throughout the whole project. At last I would like to direct a specific thank to my friends who have been forced to act as a sounding board for my ideas and the research.

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<th>Abbreviation</th>
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<tr>
<td>CGI</td>
<td>Computer Game Industry</td>
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<tr>
<td>CLS</td>
<td>Customer Loyalty Survey</td>
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<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
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<tr>
<td>DLC</td>
<td>DownLoadable Content</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>PM</td>
<td>Personalized Marketing</td>
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1. Introduction

This chapter starts with an introduction to the subject in general and a describing background to the problem, followed by the chosen research area and the objectives this study handles. The subject is delimited and a description of how this work is contributing to the general knowledge is described.

This study aims to provide the computer game industry with recommendations for how to implement personalized marketing in a beneficial way. Since it does not exist thorough information within this area, the study is built up by an analysis of how other industries have implemented personalized marketing as well as by analyzing the computer game industry. Due to the nature of the industry and the relation between personalized marketing and data handling, the work is focused on customer integrity and privacy, which in turn related to data security.

The continuously ongoing development of internet and computers has enabled new possibilities related to sale of software. The old approach of sale in physical stores is an extinction paradigm in general, replaced by the possibility to download the software from specific distributors or directly from the creator. In parallel with this paradigm shift, an ongoing trend is freemium, an approach built on the base of free software in which premium functionality can be bought using real money (Arnell, 2014, p. 5-6). Important aspects related to the new trends and the increased capacity of internet and overall development of Information Technology (IT) is Personalized Marketing (PM) based on Big Data (O’Flanagan, 2014, p. 7). PM can be defined as marketing performed by companies towards customers, customized for the specific customer or a group of customer. It is often based on gathered data about the customer which can be in form of Big Data. Big Data can be defined as a large amount of data (information) collected from different sources, which can be analyzed and result in information useful for personalized marketing.

In order to enmesh the customers further, the sale of products can be put within the software as well, instead of just selling the products in external stores to which it can be hard to direct customers. This selling approach enables a more personalized interaction with the customers, and the marketing based on Big Data can be targeted and individually customized more precisely. Beyond the aspect of PM, this approach may increase the revenue in another way, such as increased profit based on decreased expenditure (Sjögren, 2015a). Based on this it is argued to be beneficial to provide the customers with relevant offers close to the sale channel, which is achieved by implementing an in-game shop. Figure 1.1 shows an illustration of how the paradigm shift is going and which implications it results in.
Since it in many cases may be hard for relatively small software companies to attract customers to their own external web store, it is common to sell the products using external distributors. Based on the more globalized and connected world, the selling can be performed within the specific products, which enables a more personalized connection with the customer without interaction from other distributors and creators. This is based on an increased possibility of gathering Big Data, which in turn can be analyzed and used for personalized marketing. In several different industries many companies are using customer loyalty memberships, to attract customers. The customer membership implies the possibility of storing data related to customers purchase history. This in turn implies that the companies can offer specialized offers for the customers.

The new sale paradigm and its implications are as mentioned related to several positive aspects. However it is at least one major aspect to consider when implementing it using personalized marketing and Big Data, namely the personal integrity. From a technical perspective the fear of spread of personal data is related to storage and transmission of sensitive data. A third party can steal the data during the transmission of data or from the storage location of data. In order to keep the customers satisfied in relation to this aspect, the companies collecting personal data have to provide secure solutions, as well as providing the customers with information about the security. The second aspect based on the displeasure of being monitored is related to how the company is using the Big Data in the marketing process, as well as about how the marketing itself is being presented and performed.

The disadvantage of making the customer perceive lack of integrity and intrusion on privacy is related to the brand value and the reputation of the company. The reputation of a company may be influenced in a bad way if the customer does not trust the company or feel that they are providing bad marketing in some way. Lowered reputation may imply lowered revenue.
and is an argument for keeping it in mind. Besides from the aspect of brand value and company reputation integrity concerns and privacy issues has to be considered due to law. Sufficient security has to be provided related to certain storage of sensitive data, and all kind of data is not allowed to be collected or stored.

As described many of the aspects related to PM as well as use, storage and collection of Big Data is related to the customer's point of view. This perspective is not just individual for every person, but the general view is also changing over time based on several aspects. The view of integrity and privacy is in general looser now than it was several years ago. This is related to the increasing use of computers and internet, as well as more specific use such as social medias. People today share much more information about themselves and their life, which implies an ongoing move of the border to integrity and privacy intrusion. The last few years one specific product that is a driver related to people's view of integrity and privacy is the social media platform Facebook. People are sharing a huge amount of information and details from their lives, which in many cases is publicly accessible for everyone around the world, just using internet and a computer or cellphone. Based on this information and the ongoing paradigm shift towards a more decentralized sale strategy, it is crucial for companies to know how to perform their PM using Big Data to satisfy the customers and not decrease the company’s reputation.

1.1. Problem Formulation

Companies are continuously striving for better and more accurate marketing to reach the target segment, increase the revenue and provide customers with offers that they want and need. A common approach nowadays is to customize marketing based on knowledge about the specific customer, which provides accurate and personalized ways to market products. Companies based on an IT core especially, can easily store customer data, Big Data, which can be an overwhelming but rich source of information that can be used for customized commercials and offers.

The coming sales strategy paradigm related to increased selling within the products using in-game shops will, using this data, increase the ability to promote specific offers to the specific customer. The major theoretical problem is that no recommendations regarding how companies with a core of IT should perform PM are available. The core of IT in the CGI enables the possibility of gathering much and very personal data and it is crucial to avoid intrusion of personal integrity and privacy. Besides from problems related to local laws and regulations, intrusion of personal integrity and privacy is related to decreased brand value based on lowered reputation of the company and its products.

Based on this the stated problem area of this study covers the lack of information related to how companies within the industry of computer games should perform PM. The possibility of Big Data implies that personal integrity and privacy are main areas related to this problem. Companies cannot gather, and especially not use, all the data they overcome, if a good relation with customers is to be maintained. This area of problem can be formulated as:
The CGI lacks information related to how PM should be performed. The main problem within this industry is to gather Big Data in symbiosis with customers, related to maintaining customer integrity and privacy.

1.2. Objectives

The main goal of this study is to present and recommend how companies in the CGI should implement PM, focusing on the technical aspects related to personal integrity and privacy. In order to meet this final goal, it is crucial to investigate and analyze other industries in which PM has been successfully implemented. The investigation aims to determine the identified approach for implementing PM as well as characterizing aspects specific for the identified industries.

If any of these aspects are differing from the CGI, it is crucial to investigate them further, since such difference may imply implications during the implementation of the same PM approach in the CGI. In order to identify possible differences, the CGI has to be thoroughly investigated.

Identified differing aspects between investigated industries and the CGI have to be thoroughly investigated in relation to, and if so, how it is affecting the implementation of PM. If any identified aspects can be shown to affect the implementation of PM in the CGI, the identified approach should be modified to match. Based on this the main objective can be stated as:

**Main objective:** Provide a recommendation of how companies in the CGI should implement PM.

To fulfill the main objective knowledge about the existing situation and demands is needed, based on which it has been operationalized to four subobjectives, namely:

**O1:** Identify and analyze industries, other than the CGI, that successfully have implemented PM as well as identify a general PM approach.

**O2:** Analyze the CGI from a customer relation perspective, focusing on privacy and integrity.

**O3:** Identify aspect differing the identified and investigated industries and the CGI related to customer relations and PM.

**O4:** Modify the identified general approach to match the CGI.

By reaching these objectives, the theoretical concepts of how PM should be implemented in the non-investigated CGI area, are developed. Since personal integrity and privacy are especially crucial within this industry, this theoretical contribution will be mainly focused on these areas, which in turn is linked to IT.
1.3. Research Question

In order to meet the main objective and thereby find solutions within the stated problem formulation, the following research questions will be answered. The main objective is related to developing an applicable implementation of PM for the CGI, based on how it has been performed in other industries. Based on the fact that this study is focusing on customer relation within the area of integrity and privacy, it is crucial to answer the question of how customers in the CGI is relating to, and perceiving privacy and integrity issues.

In order to become able to provide such description, it is crucial to answer the question of how the CGI is differing from other industries, which are using PM in a successful way. This is linked to sub objective O3.

The final result and thereby the theoretical contribution of this study, is based on the answer to the question of how the identified common approach related to PM should be modified to be applicable to the game industry market and its customers. The answer to this question, RQ2, addresses sub objective O4. Based on this the research questions can be formulated as:

**RQ1:** “Which are the main aspects differing the CGI from the other investigated industries?”

**RQ2:** “How should the identified general approach of PM be modified to match the CGI?”

1.4. Delimitations

This study is a work provided by one person based on an academic course of 30 European Credit Transfer System (ECTS) points, full time for six months. This implies that a major delimitation of the work is time. A delimitation this time constraint has implied is the exclusion focus on one company within the CGI. Since this work will focus on marketing within products owned by the customer, this study will only focus on marketing and interaction with already existing customers for the company, not in the process of attracting new ones.

Further on this study will be mainly focused on PM and customer loyalty within the field of data security, implying the final result and recommendations being delimited to how companies in the CGI should adopt to PM regarding data security, which in turn is related to integrity and privacy. Based on the facts that the company used for the case study, Paradox Interactive, is a Swedish company with customers all around the world, as well as the fact that the other performed benchmarks are valid worldwide; the investigation will not be delimited by geographical boundaries. However the study as a whole as well as the recommendations will be delimited to the European Union. This decision is made mainly because of the many differing laws applying worldwide, which briefly will be touched upon in the investigation.
Aspects related to the, in the background described, paradigm shift that are not directly linked to the theories of PM will not be included in this study. This includes sales strategies as well as concrete actions for performing the PM.

1.5. Purpose and Theoretical Contribution

The work of this study contributes to the knowledge within the broad field of marketing, in specific PM. Several previous studies have been performed within the area of investigating customers’ perception of PM regarding integrity and privacy issues in several industries. This work will contribute to the same area, within the IT field. The work investigates, on a technological level, the relation and impact between the technical solutions of PM and the customer perception of integrity and privacy. The customer integrity and privacy part is related to data security, in which cryptography makes up for a significant part.

As described in the delimitations section, Chapter 1.4, this study focuses on marketing towards existing customer. Since such marketing is focusing on increased sales rather than attracting customers or making them aware of the product itself, the contribution area is closely related to sales strategy as well. Based on this the theoretical contribution is built upon investigated theories from previous studies, which based on the findings are modified to match the investigated area, the CGI. In addition, the recommendations provided to companies in the CGI are supposed to be perceived as new theories within the field of PM specifically produced for investigated industry and focused on integrity and privacy.

1.6. Disposition

This study begins with a description of the background to the problem area and the related technological fields. The background is followed by an investigation of applicable models and theories within the field as well as a description of previous work within related fields. The methodology used in the work is then described, which in turn is followed by the actual research of the work, based on the chosen methods.

The results of the research described in the methodology chapter are then described, followed by an analysis of them. The results, analysis and performed work are discussed in relation to the purpose of the work and its stated objectives and research questions. The whole work along with the purpose is concluded followed by a brief suggestion for interesting future research within the working field.

Below is a description of the content in every single main chapter of the study presented.

**Chapter 1 - Introduction:** is initialized with an introduction to the subject in general and a describing background to the problem, followed by the chosen research area and the objectives this study handles. The subject is delimited and a description of how this work is contributing to the general knowledge is described.
Chapter 2 - Background and Literature Study: presents relevant background information for the work, mainly based on previous studies and work within the field of PM, customer loyalty and decision journey, integrity and technical solutions related to PM and Big Data.

Chapter 3 - Methodology: presents the methodologies used to reach the goals of the study. It is followed by an investigation of how these choices affect the perceived quality of the work in form of reliability, validity as well as generalizability.

Chapter 4 - Empirical Data Result and Analysis: presents the results of the empirical study performed during the study. The results are linked to the structure of the objectives and research questions for this study.

Chapter 5 - Discussion: contains a discussion of the results and analysis related to the stated research questions and objectives. The theoretical contributions are presented and recommendations in the form of empirical contributions for companies in the CGI are described.

Chapter 6 - Conclusion: presents a conclusion of the findings in this study and describes how they are aligned with the stated objectives and research questions of the thesis. The limitations of the thesis are presented, based on which recommendations for further research are provided.

1.7. Paradox Interactive

Paradox Interactive is a Swedish computer game company founded in 1998 with their headquarter located in Stockholm, Sweden. The company is creating games which they are selling, but also acts as a publisher for other games, which is illustrated in Figure 4.2. Besides from the software, they are also selling merchandise such as t-shirts, capes, robes, hats and music. Merchandise is an umbrella term including different approaches of increasing the sale of a product or increasing the value of a purchase basket. Paradox Interactive are mainly focusing on historical strategy and action games for computers, out of which Europa Universalis and Magicka are two of the most famous titles. Magicka has been sold in over 3.000.000 titles. (Sjögren, 2014)

Paradox Interactive has an online web shop called Paradox Plaza (Paradox Plaza, [no date]) which is a relatively new platform for selling their products, besides from the major actor Steam which owns the majority of the market. (Sjögren, 2015a)
2. Background and Literature Study

This chapter presents background information for the work, mainly based on previous studies and work within the field of PM, customer loyalty and decision journey, integrity and technical solutions related to PM and Big Data. The scope is set based on previous research and the chosen topic. Further on the CGI is described based on the delimitation of this study.

A lot of studies have been performed within the field of how customer loyalty is built up regarding commerce online. There are many influencing factors related to loyalty, out of which many are related to people's perception of safety, security and to not feel monitored or controlled. A common approach for creating PM is to gather large amount of data, among other personal data, called Big Data. Analysis of the data can result in much useful data, based on which offers and marketing can be personified and directed. Several studies have been performed within the area of how and when Big Data can and should be used, during collection, storage and analysis.

Much of the data used in IT companies is of private nature, implying that high safety should be applied to secure the company’s and the customer’s data. A general model describing such safety guidelines is the CIA triad, which identified three important factors, confidentiality, integrity and availability. From a technical perspective several different approaches are and can be used for securing the data, such as encryption, secure access control and safe password handling.

The CGI, within the broad field of IT is a business which has evolved during the few past years due to increase computer and internet capacity. Many games today offers multiplayer online options, implying that a lot of personal and relevant data can be gathered during the transmission, which in turn makes it possible to create personalized offers. PM itself is a field within the general field of marketing. It is focused on marketing actions directed to a specific customer, with content developed for that particular customer or customer group. A lot of studies have been performed in the area, often focusing on the privacy and integrity concerns the PM directly or indirectly may imply. Related to marketing in general and the scope of this study is the general theories related to marketing strategy, defining how a product is brought to the customer using marketing. As described the customer makes up for a central part of the theory, which combined with the fact that marketing in general is performed to get the customer all the way from recognition to a purchase action. Based on this the theoretical models of the customer decision journey are investigated, which provides helpful models for the work in this study.

In Figure 2.1 the flow of the literature and background study is shown, describing how subjects are linked together, how they combined builds up to the final subject of PM within the field of CGI. The number within every parenthesis describes in which sub chapter of chapter two it is addressed. It can be seen how the subject of security related to handling of
data is major parts of several other subjects, affecting the loyalty, the Big Data handling as well as the CGI in general.

![Diagram](image.png)

*Figure 2.1: Schematic model describing the flow in the background and literature study*

Based on the above described information this chapter will follow the logical path, shown in Figure 2.1, from the individual parts which create a basis for the main subject, namely PM (6). Personal data (1) is part of theories related to how data is securely handled (4), how Big Data in general is used (3) as well as to the CGI in general (5). The security of data handling (4) is in turn related to Big Data (3) and the CGI (5) as well as to E-loyalty (2) since loyalty is affected by how security of the data is handled. Big Data (3) directly affects and makes up for a major part of PM (6). E-loyalty (2) directly affects PM (6), but also the CGI (5) and a customer’s decision journey to a purchase (7). As described the concluding part of this literature study is providing results of the investigation of how PM (6) has been presented in previous studies. The theories related to marketing strategy (8) and a customer's journey when moving towards a purchase (7) are both factors related directly to PM (6) but relatively free-standing from the other parts. This even though the customer decision journey has been shown to be, in modern models, related to loyalty (2).

### 2.1. Personal Data and EU Data Protection Law

One of the main components of this study is the subject of personal data, which is one of the core components of PM as well as one of the main factors implying privacy and integrity concerns amongst the customers. Personal data is by the European Union (EU) law specified as the specific kind of data based on which it, “without unreasonable effort” of obtaining additional data, is possible to identify a person (*Handbook on European data, 2014, p. 36*). As described by Amin and Birgisdottr (2012, p. 7) this data can include name, phone number, date of birth as well as where the person works or go to school. As further described by the authors the collection and storage of such data may be fully legitimate in for example the process of applying for a job, but it may also be misused if it gets in the wrong hands due to the ease of spread around the world.
The data can be anonymized which implies that it does no longer contain any identifiable factors and it can be pseudo anonymized which implies that the identifiable factors are for example encrypted, which is further described in Chapter 2.4.1 (Handbook on European data, 2014, p. 36). As further described the fully anonymized personal data is no longer identified as personal data, while the pseudo anonymized data is. The personal data is valuable even though it is not a tangible good and can as further described in Chapter 2.3 be used for PM, a business with potential for big profits (Amin and Birgisdottir, 2012, p. 7). By EU law there are specific data which is classified as extra “sensitive data”, namely racial or ethnic origin, political opinions, religious beliefs, other beliefs, information related to health as well as information related to the sexual life (Handbook on European data, 2014, p. 43). This kind of data should be handled with extra security, and only be allowed when specifically needed.

By EU law it is specified that the “controller” of the data (the person or company that decides that the personal data should be processed) as well as the “processor” (the person or company that actually processes the data) are legally responsible for “complying” with the respective obligations under the data protection law (Handbook on European data, 2014, p. 49). The processing of data involves automatic processing as well as manually processing which both are described as operations performed upon the personal data (ibid, p. 46). Another factor of the data protection law is that the processing process should be transparent; the data subject should easily be able to understand what the data is used for as well as information related to if the personal data is used and if so which parts of it is used (ibid, p. 74). It is further described how the controllers should keep documents related to how the data is processed in a “lawful and transparent manner”. The processing should not be performed in the dark or result in unforeseeable negative effects, which in turn to enhance the trust of the data subject.

The previously described processing of the data should as mentioned be lawful, which implies that it has to be on the consent of the data subject, performed for vital interests of the subject or of interest of other parts. However it cannot override the interest of fundamental data protection for the data subject (ibid, p. 81). This holds for the non-sensitive data, while it for processing of sensitive data is needed an explicit consent of the data subject, if it is demanded by the national law. As a data subject you have the possibility to get data blocked or deleted if it is inaccurate or illegal, as well as to get access to all the data (ibid, p. 105). Further on it is possible to object to the controller if the data is used for direct marketing or leads to false results, such as inaccurate offers.

Not just Big Data is regulated by EU laws, but also the actual use of personalization and PM according to Häller (2009). As described by the author, EU authorities have denied a company to perform personalization since the customers did not explicitly allow it. This is a prejudiced judgement which should hold for all the EU countries. The author describes how ICA has managed to avoid this regulation by sneaking in an allowance of the personalization in a complex contract. In 2011 this was further regulated with a specific law implying that the use of tracking cookies on websites has to be explicitly accepted by the customer and cannot

## 2.2. Loyalty

Loyalty directly affects PM and is an important subject related to the relationship between customers and companies. In all businesses it is crucial to establish and maintain a good relationship with the customers, since it in the long term will generate an increased profitability (Anderson et al., 1994, p. 63). It is beneficial for companies to create long term bonds with customers, due to the often high cost of acquiring new ones. Eventually unhappy customer will leave a company, which makes it crucial to investigate the area of keeping customers happy (*Customer Experience*, 2011).

E-loyalty is defined as customer loyalty for a company running a store of some kind on the internet (Srinivasan et al., 2002, p. 41), or as a “favorable attitude toward an electronic business resulting in repeat buying behavior” (Anderson and Srinivasan, 2003, p. 125). A loyal customer is defined as a returning customer who will spend money in the store in the future.

The e-loyalty is argued to be affected and developed by several factors such as e-trust and e-satisfaction. Anderson and Srinivasan (2003, p. 125) argues based on their research that increased e-satisfaction implies increased e-loyalty, while Srinivasan et al. (2002) shows that e-trust imply e-loyalty. As shown research has proven connections between individual factors, but Gummerus et al., (2004) shows by their research a sequential connection, in which e-trust is affecting e-satisfaction which in turn affects e-loyalty. The authors claim that the trust is the factor with highest impact on satisfaction and since trust is a main aspect of perceived quality, it is in turn affecting loyalty. The linkage between e-trust, e-satisfaction and e-loyalty is strengthened by Kim et al. (2009, p. 239).

Jiyoung et al (2009, p. 239) agrees with the mentioned affecting factors on e-loyalty, but claims that online retail (etain) quality (etainq) is another important aspect. Etainq is defined by Wolfinbarger and Gilly (2003, p. 183) to be covering all aspects “from the beginning to the end of the transaction, including information search, website navigation, ordering, customer service interactions, delivery and satisfaction with the ordered product”. Jiyoung et al. confirmed by their work that e-trust as well as e-satisfaction is both affecting e-loyalty in a positive way, but also that e-trust indirectly affects e-loyalty, which strengthens the theory by Gummerus et al.

One used approach for obtaining loyalty in general is to create loyalty programs for the customers. One such program is the Clubcard created by Tesco in 1995, based on which the customers gets extra discount or offers based on what and how much they shop from Tesco or their collaboratives (Clark and Clark, 2012, p. 13-14). According to the authors some argue that a loyalty program in the long run is unnecessary, since many of the customers had been loyal without the program. The authors however argue that a well performed loyalty program
is not just providing the customer with offers and coupons, but is a good source of collecting valuable data and information about the customer. Based on this information it is possible to create PM with high accuracy and relevance.

2.2.1. Trust

Trust is by Morgan and Hunt (1994, p. 23) defined as the perception of "confidence in the exchange partner's reliability and integrity" and "a willingness to rely on an exchange partner in whom one has confidence" by Moorman et al. (1992, p. 315). Both stress the importance of reliability and the importance of confidence in the other part. An important factor related to trust and customers' confidence in a company is brand reputation. Regalado (2014) stresses the quick negative impact a trust concern may have on the brand reputation, due to public relations. Also Cripe (2013, p. 12-15) emphasizes the importance of maintaining and creating trust towards the customers when all the available and finally economically efficient data is used. He further argues that companies should use clear policies for the used data, stating that they are taking the main responsibility if something happens to the sensitive data. He exemplifies how this is already performed related to credit card information, where the company fixes the problem if the information is leaked.

Cripe (2013, p. 17) further describes the mutual positive effects of sharing data, namely that the companies gets more information which they can use for PM which in turn may increase the revenue, while the customer gets more accurate and personal help and service. This is exemplified in Figure 2.2, in which the customer shares personal data if the trust is high for the company, which in turn is used by the company. The gathered data enables personalized and relevant marketing offers which in turn improve the experience for the customer. When the company uses the data it has to be performed with sensitivity to maintain high trust. As can be seen trust is the basis of the model, and important when using personal data for PM.

![Figure 2.2: The dynamics of the emerging value exchange in the post-transaction relationship. Data from: Cripe (2013, p. 17)](image)

Regalado exemplifies trust concerns with privacy and security issues, which is related to data collection, transfer and storage. Since “the single most important factor for customer choosing an online supplier is trust” (Reichheld et al., 2000, p. 176) and as Reichheld et al. describes (2000, p. 179) states, “in the past, customer loyalty was just one weapon to use against competitors, today it has become essential to survival”, it is obvious how important
loyalty and therefore also trust is today. This is strengthen by the results of the research by Dyke et al. (2007, p. 78), which showed how privacy concerns related to online commerce (e-commerce) is significant negatively affecting customers’ trust. This decreased trust was shown to be influenced by the perception of vulnerability, such as the fear or other unauthorized persons using the private data and information. From a customer's perspective the unauthorized person may be a third party company related to the company, which the customer does not have a relation with.

The importance of feeling that the personal data is safe, is supported by Amin and Birgisdottir (2012, p. 12) as well related to trust. Based on their research they argue that one major aspect of getting trust among customers is to display a clear and simple privacy policy. The privacy policy is a document stating how personal data is collected as well as if and how third parties may get access to it (McRobb, 2006, p. 215). However, as described by Amin and Birgisdottir (2012, p. 12), most privacy policies are too complex and as they describe it “written in confusing language and are full of jargon”.

Amin and Birgisdottir further argue that the fact that for example many websites has privacy policies are written in such style is because the objective is to obey the law, to protect the organization from legal sanctions, which is more focused on the organization than on the customer. This is supported by Earp et al. (2005, p. 229, 235) which argues for that managers has to establish and maintain trust amongst customers, by aligning the privacy policy with the user concerns, “potentially resulting in a better relationship with their customers”. Also the study performed by Amin and Birgisdottir (2012, p. 32-33) showed that clear displaying of the privacy policy may have positive effects on the customers’ trust, and as they describe it, “they become more willing to provide personal information”. However the study also showed that even if customers feel threatened related to their privacy, they still share various amount of personal data. Further on the study also showed that all people does not fully understand how personal data is used for personal marketing, implying that the trust is challenged, but also that it is unbeneicial for the PM itself.

This is further strengthened by Amin and Birgisdottir (2012, p. 13) which argues for that privacy policies should be easy to understand and compare. This is argued by Timpson and Troutman (2009) to be achieved by using a plainly written language, and to keep the privacy policy itself short and simple. One possible solution for gaining trust amongst customers is to make the used privacy policy certified by a third party organization. As described by Markert (2002, p. 2-4), there exists several such organizations, for example “TRUSTe, BBBOnLine and WebTrust”. They strengthen the arguments for that companies should be concerned with their privacy policy, simply because the customers care about them. The main advantage with such certification of the privacy policy is that a customer who sees the certification badge knows the minimum requirements for the privacy and integrity. This is described by Markert as “A displayed trustmark signifies to online users that the website will openly share, at a minimum, what personal information is being gathered, how it will be used, and with whom it will be shared and whether the user has an option to control its dissemination.”.
The importance of this, the knowledge about the used personal data as well as about how a customer can object to it, was strengthened by the results of the study performed by Amin and Birgisdottir (2012, p. 33-34). It showed that companies should provide clear information about their rights, describe how the data is used as well as, as they describe it, “assist people in having their data altered or deleted if permissible”. As a more general guide to trustworthy privacy policies, the Federal Trade Commission (FTC) has developed five principles for it (Wirtz et al., 2007, p. 329):

1. **To give notice**: “tell customers what information is being collected and what the marketer is planning to do with it”
2. **Choice**: “customers can choose not to have information shared with third parties or mailing lists”
3. **Security**: “to assure customers that the information is safe from tampering, theft, misappropriation and misuse”
4. **Access and correction**: “customers can see what has been collected and can correct errors in the data”
5. **Enforcement**: “a mechanism to ensure compliance by participating companies”

However the authors also highlight the positive effects of using the third party organizations for certificating the policies, for further verification of the document.

### 2.2.2. Satisfaction and Service Quality

As described by Spreng and Mackoy (1996, p. 202) there is no real consensus related to the definition of customer satisfaction. However Oliver (1989, p. 1) argues that it often contains some of the terms “an evaluative, affective, or emotional response”. Spreng and Mackoy further argue that customer satisfaction is related to service quality, which by them both are argued to handle customers' expectations in relation to some standard. It is stressed that satisfaction handles predictive expectations, what the customer believe will happen while the perceived service quality is linked to what they, due to some norm, feels that the company should provide (Zeithaml et al., 1993; Bitner, 1990; Parasuraman et al., 1988).

Based on a model created by Oliver (1993), Spreng and Mackoy (1996, p. 203) created a modified model, as can be seen in Figure 2.3. The figure shows how desires and expectations are building up perceived service quality and satisfaction, as well as how service quality itself affects the customer satisfaction.
The relationship between service quality and satisfaction related to online commerce was investigated by Mostaghel in 2006. Amongst other the study showed that customers’ expectations differed the most from the perceived service quality in those areas the customer perceived as most important for them. The study further showed that customers in all tested cases perceived the service quality lower than they had expected (ibid, p. 72).

2.2.3. CIA Triad

As described, companies should strive for making the customers’ trust their products and services to strengthen the loyalty, which in turn will lead to increased profit. Related to customer’s trust are Confidentiality (privacy), Integrity and Availability, related to how well the company is keeping and handling personal information and data in a correct and ethical way. These three factors are often mentioned as the CIA triad, which is a guideline framework for organizations and company, regarding data and information handling in the customer relationship. The CIA triad is shown in Figure 2.4.

Confidentiality

Confidentiality, which in many cases is equivalent with privacy, is handling the aspect of sensitive and often personal data, which should not reach unauthorized persons. Some data is more critical than other, which implies that the data often is divided into different confidentiality levels. There are several methods related to maintaining a high level of confidentiality, such as strong passwords, data security education as well as encryption. More specifically, data confidentiality stresses the importance of the fact that no unauthorized person should be able to access the data, while privacy is related to letting the customer have
an impact on what information should be stored and accessible. (Stallings and Brown, 2012, p. 11-14)

**Integrity**

Integrity related to data can be divided into two main parts, data integrity which stresses that data can only be modified by authorized persons and system integrity, which stresses that the running system handling the data cannot be affected or disturbed by unauthorized factors. In summary, fulfilled integrity within the organization ensures that no data or information can be modified or destructed by unauthorized persons. (Stallings and Brown, 2012, p. 11-14)

**Availability**

The last factor in the triad is availability, which if fulfilled ensures that data and information can be reached in all situations by authorized people, and therefore non internal or external factor can deny access. One often used solution for maintaining high availability is to keep data on several different physical locations, implying that external impact based on for example natural disasters can be avoided. (Stallings and Brown, 2012, p. 11-14).

## 2.3. Big Data

Big Data is related to PM based on the fact that it can be used as a major source of personal data, which can enhance the personalization process. Big Data is a term defining huge amount of collected digital data and stresses the two most important factors of it, the often large amount of data as well as the indication of the value of data as a raw material, just like “big oil”. Big Data is collected in a large amount of businesses, such as astronomy, simulation, communication, social media and trade. Based on where the actual data is collected, it may have to be transmitted to the owner of the data to be able to analyze and if needed also store the data. Big Data is of no use if it is not analyzed, which is the core part of the Big Data handling. The analysis of the data can be performed in real time or later implying the need for storage of the raw Big Data. The continuously improved data and internet connection speed implies a dramatic increase of data, which in turn demands much more data power for the Big Data analysis. The data power is also continuously improving, implying that the main critical aspect is to know how to structure and analyze the data.

Big Data can be used in several different ways, of which some are based on an anonymized approach where no data can be linked to a specific person, but perhaps to a country or a group of people. This approach does not enable PM on an individual level, since no person can be separated from the group. As an example the Swedish grocery store company Coop is using this approach (Ohm, 2009, p. 7). The second approach is to not anonymize the data. Even though this approach enables new ways of for example marketing, it is crucial to weight in the aspect of personal integrity and privacy. Privacy concerns can be related to the fear of spread of personal data as well as the displeasure of being too monitored. However, as Baker (2013) describes, the anonymization process companies perform is in some cases not safe from a customer integrity perspective either, since the data in several cases can be linked back to the customer.
A critical aspect related to the combination of Big Data and data security, stressed by Haughn and Gibilisco (2014), is the complex situation of keeping an oversight of the collected data. The authors claim that data and information may be unproblematic when individually used, but the interpretation with other of the large amount of data may imply privacy and integrity concerns. A nowadays well-known case of privacy issues related to Big Data is the reveal of secret data the American National Security Agency (NSA) had collected, by Edward Snowden in 2013 (Brown, 2014). The data itself may not seem problematic, but since NSA was storing everything, a deep analysis can be performed, implying privacy intruding information (Haiguang, 2013).

The use of Big Data is depending on the analysis of the information. As mentioned the data can be analyzed in real time, or stored and analyzed at a later time. There exists several techniques of analyzing Big Data and many of them are related to the data content and purpose. Before the gathered data is used and analyzed, it may be preprocessed and stored in a data warehouse, from which it later on can be easily accessed (Erlingsson, 2015). The processed data is as described by Yu (2013) called “structured data”, while it before the processing process is called “unstructured data”. Yu further explains that data may be “semi structured” as well, which defines data that valuable as it is, but can be merged with other related content as well, such as positioning data. As described Big Data can be used in a lot of different areas. Suri (2013) describes how computer game companies in some cases use Big Data analysis to find vulnerabilities and to detect cheating.

2.4. Security of Data Handling

To maintain high loyalty the handling of data, such as Big Data, has to be performed in a secure way. In general the handling of data can be divided into the transmission part of the data and the storage part. The transmission involves two or several parts, between which the data is sent. A crucial aspect related to security of data handling is to keep it safe from third parties, to prevent it from being read, stolen, deleted or modified. The three aspects in the described CIA triad are all factors which should be emphasized and fulfilled in the work of handling data securely.

As described by Stallings and Brown (2012, p. 3-5) it exists a “golden standard” for data security which is related to the international standard called ISO/IEC 17024, which is, amongst others, fulfilled by the organization International Information Systems Security Certification Consortium (ISC). ISC has created the golden standard called International Information Systems Security Certification Consortium, which is certified by ISO/IEC 17025. The certification handles ten different domains, which all makes up for the general data security related to computer systems. Out of these, five domains are directly linked to actual technical aspects of data security, rather than general knowledge amongst the employees, which all will be covered in this chapter and stated below. (ibid, p. 3-5)
1. **Access control** - collection of mechanisms protecting information assets.
2. **Cryptography** - principles to ensure confidentiality, integrity and privacy for information.
3. **Physical security** - principles for keeping data safe from physical access and damages.
4. **Security architecture and design** - principles and structures to monitor and secure systems and information.
5. **Telecommunications and network security** - principles for securing the transfer of data.

2.4.1. **Encryption**

The most common technique for keeping data secure is to encrypt it. The technique is based on two general steps. At first the data which is in clear text is diffused in some specific way, using an encryption key, making it hard or hopefully impossible for external parties to get the clear text based on the diffused text, the encrypted text. Secondly the encrypted text can be converted back to the original text, using some specific decryption key. There exist several different encryption techniques, with different level of security, time consumption and other critical factors. All encryption techniques can be divided into two main groups, asymmetric and symmetric encryption. (Stallings and Brown, 2012, p. 39)

The core functionality of asymmetric encryption is based on the idea that the encryption key and the decryption key is not the same. This implies that the receiver who wants to receive encrypted data can share the encryption key publically, receive encrypted data, and finally read the clear text using the secret decryption key (Stallings and Brown, 2012, p. 58-59). The symmetric encryption is opposite to asymmetric encryption, the encryption key and the decryption key is identical, resulting in that the same key has to be known by the receiver as well as the sender (ibid, p. 39-42). Encryption of data can be used for transmission of data to prevent external parts from reading the clear text by snapping up the sent data, but can also serve as a security during storage of data for a longer time (ibid, p. 39).

As argued by Wayner (2014) the use of encryption is a dying trend, which he bases on several factors. Among other he describes how several encryption algorithms are based on mathematically “hard problems”, which is believed to be hard to calculate, which in turn implies that if sufficiently large numbers in the systems are used, it takes long time to break it. He emphasizes the problem with this, namely that it is possible that someone might find out a way to solve the mathematically problem or solve it using other technologies, which should make the use of all such encryption systems worthless. He further emphasizes the real risk with this, that the person or organization that breaks it may keep the finding secret and uses it for their own work. For asymmetric encryption system such as RSA the mathematically hard problem that makes up the backbone is the difficulty of prime factorization of large numbers (Ambedkar and Bedi, 2011). Briefly the problem that is sought to be solved is that given a number $N$, come up with all prime numbers that are the factors of $N$, which always is more than one as long as $N > 5$ and $N$ is not a prime itself.
As described, a symmetric encryption system implies that both the sender and the receiver need the same key, which has to be securely shared. One often used algorithm for this purpose is the Diffie-Hellman algorithm, which is a key exchange algorithm that implies that the two parties can come up with a decryption and encryption key in a secure way (Fifield, 2012). This algorithm is based on the mathematically probably hard problem called the “discrete log problem”, which is based on the fact that for a given large mathematically group $G$, it is hard to calculate $X$, solving the equation $B^X = Y$, where $B$ is the base (generator) of the group $G$ and $Y$ belongs to the group $G$. Wayner further emphasizes the non-direct attacks, called “side channel attacks”, which can be performed by for example listening to the sound of a computer decrypting data or by infiltrating the organization holding the correct key. These attacks are much harder to avoid, since new techniques and approaches always can be developed.

The National Institute of Standards and Technology in the United States, NIST, recommends a few encryption systems which are argued to be safe (BLOCK CIPHER, 2015). Amongst the recommended systems is the Advanced Encryption System, AES, which does not rely on specific mathematically problems that are probably hard, but instead is a combination of actions modifying the bits (Maheshwari, 2011). In principle this implies that the security relays on the fact that no one, this far, has come up with a system to break AES. In the majority of encryption systems the security relies on the size of used values or number of bits in the key, since even though the system can be perfectly safe, it is possible to investigate all possible solutions, called a “brute force” attack in reasonable amount of time (Stallings and Brown, 2012, p. 42-43). The combination of continuously development of faster and cheaper computation power, along with the possibility of huge networks of connected computers, makes it necessary to use key lengths that are supposed to be secure for a chosen number of years. The longer it has to be secure, the higher number of bits in the key is needed. As described by NIST an AES encryption systems is argued to be safe far beyond 2030 if at least 256 bits are used in the key, named AES-256 (Barker et al., 2012, p. 67). As described by Hargelid (2015b) it is argued to be possible to keep all data fully encrypted and therefore also hopefully resistant to brute force attacks, but in reality it is not possible since the data all the time has to be decrypted, which takes too long time. Based on this Hargelid argues that a balance has to be identified between security and speed. As he argues it may be possible to secure some of the data mainly using good access control techniques.

### 2.4.2. Transmission

The data transmission can in general be thought of as a transfer of data from a sender to a receiver. Crucial aspects of the transfer are:

1. The data should, and should only, be transferred when the sender intend to.
2. The data received by the receiver should be identical with the data the sender sent.
3. A third party should not be able to get anything of use out of the transfer of data.
The first critical aspect above describes two sub parts that has to be satisfied to be perceived as secure. When the sender sends data, it should be delivered to the receiver. This may not be a critical problem if the failure of transfer is noticed by the sender, but otherwise it may be devastating. A problem related to this factor may be caused by technical errors or by a third party hindering the transfer. Secondly the data should only be transferred when the sender intend to, in other case critical problems may occur. An example of such critical problem could be if a payment of money is performed twice instead of once. If the sent data can be copied by a third party and later on executed once again, it is not perceived as safe. This problem may also be related to technical errors. (Stallings and Brown, 2012, p. 221-245).

The second factor stresses the importance of keeping data safe from modifications during transmission. Critical implications may occur if this is not established, for example if a payment of money could be edited making the payment goes to a third party instead of to the intended receiver of the money (Stallings and Brown, 2012, p. 27).

The third critical factor is related to if the data during transfer is visible for a third party. Data can be visible in different levels, reaching from totally visible in clear text to being totally invisible implying the third party not even knows that the data transfer is performed. This factor is linked to the already mentioned area of confidentiality and can for example be reached by encrypting the data (Stallings and Brown, 2012, p. 39-45).

Based on the content of the data, different number of these factors has to be satisfied and different levels of invisibility related to the third factor have to be used. The security related to the transfer can be divided into two major parts, the prevention from external access to the data and prevention for interaction with the data. If no one can access the data, it may not be a problem if the data itself is not secure. However, just because the data itself is secure, it may be crucial to keep it away from external parties to satisfy critical factor number three.

A critical part related to the security of data transmission is the speed of transfer. A common reason for low security is the negative impact on transfer speed a secure solution may imply. In many cases it is crucial to find a golden mean, a relatively secure solution with sufficient speed, as described by Hargelid (2015b). The most common way of achieving security during transmission of data is to encrypt it before it is sent and decrypt it as soon as it has arrived to the expected person (Stallings and Brown, 2012, p. 404). Since no other than the expected receiver should not be able to decrypt the data and extract any useful data of it, it is satisfying parts of the criteria for safe data transfer. The use of encryption and decryption prevents external parties from reading the sent data. However it may still be able to block the transfer, send other data or even edit the sent data. (Stallings and Brown, 2012, p. 39-66).

As described by Stallings and Brown (2012, p. 688-691) two of the most commonly used techniques for secure transfer of data is Secure Sockets Layer (SSL) and Transport Security Layer (TLS) which are linked to one another. These standards are widely used on websites and are by the user indicated by icons indicating that the certificates are fulfilled or not. The security protocols are based on the technique of handshaking to authenticate both parts in the
communication. As soon as it is established, the communication can go on. As a backbone
they are both built upon the techniques of encryption and decryption.

2.4.3. Storage

All data, such as Big Data and other personal information, has to be stored in all cases where
it is not exclusively used in real time. When storing personal data it is of important to keep it
safe from external parts, it should not be able to be read or modified by outsiders. The
techniques for achieving such security can be separated into three main parts, physical access, remote access and interaction.

At first security of physical access is not much related to digital phenomenon, but is stressing
the importance of keeping the hardware where the data is stored in safe places where no outsiders are able to reach it physically. The security of physical access of data is not solely dependent on keeping unauthorized people from reaching the data, but likewise dependent on keeping the data safe from other external physical impact. External threats besides from people can for example be unexpected hardware failure, natural disaster as well as incorrect use by authorized people. (Stallings and Brown, 2012, p. 517-518)

Secondly security related to remote access of data stresses the importance of keeping unauthorized people away from the data. In general the safest technique for achieving this kind of security is to store the data on hardware without any outgoing or ingoing connection at all. Since this technique in many cases is not feasible due to flexibility and speed problems, the needed connections have to be secured. The major issue is related to keeping unauthorized people unable to access the data, which can be directly performed by several techniques. Besides from using strict and secured identification and verification of access, it may be beneficially to keep the storing areas invisible from outside. (Stallings and Brown, 2012, p. 404-406)

Thirdly, the security of keeping unauthorized people away from interacting with the data is related to what can be done and what cannot be done when some specific person has direct access to the data. Preferable an unauthorized person should in no way be able to extract any useful information from the data and none of the stored information should be able to edit, replace or extract. As for secure data transmission, the safest way of storing data in a way where access to the data is of no use, is to encrypt it. A totally safe and unbreakable encryption technique should imply that the data is of no use for external even if they can access it. (Stallings and Brown, 2012, p. 39, 404)

In order to store data perfectly safe, it is critical to keep the data safe in all three of these aspects. To prevent loss of data it is critical to store the data in a physically safe place as well as to store backups of the data on different locations to prevent data loss due to external physical factors. The secure physical storage of data is essential to prevent outsiders from reading the data as well, but has also to be safe from remote access. In order to add another layer of security, the data itself should be safe. This can as mentioned be achieved by using
encryption techniques, which leads to security against reading and editing the actual data if anyone can bypass the access security parts.

As stressed by Haughn and Gibilisco (2014) a critical aspect related to storage of Big Data from a security perspective is the risk of high costs, due to the often large amount of data. In order to fulfill the availability part of the CIA triad, to keep multiple backups of the data, the costs may increase drastically by increasing the amount of data.

A specific aspect related to secure storage of data is the use of login details in combination with passwords for access to the data, which as described by Stallings and Brown (2012, 73-74) consists of a combination of a name (ID) and a password. As described by the authors it is common to not store the passwords in clear text, but as one-way hashed values, implying that the resulting scrambled text from the hash function is supposed to not be possible to transform back to the clear text. Instead the check of a password is performed by hashing the, by the user entered password, with the same hash function and compare it to the user's own hashed password. It matches the entered password was correct, otherwise not. Since all identical passwords are hashed to the same scrambled value, access to the hopefully securely stored password file by an attacker, implies that the passwords can be identified by hashing a lot of random text phrases and comparing them to the password file. Another possible attack described by the authors is to try and guess the password for a specific user until the right one is found, called a brute force attack.

The problem related to that all of the same passwords are hashed to the same scrambled value can, as described by Stallings and Brown (2012, p. 76) be prevented by adding a “salt” value to the password before it is hashed. By using unique, identical and public salt values for every user, two identical passwords for different users are scrambled to different values. This implies that it is much hard to guess or see the correct password by comparing it to on forefront hashed values, called an offline attack. The problem with password guessing can be solved by setting up rules for the password, checking that the password matches a preset complexity level and length (ibid, p. 75-85). Further on the password guessing can be prevented by setting time limits, making the guesser wait for example five minutes after every tenth denied guess. The security can be further increased by forcing the user to, on every login attempt, use so called CAPTCHAS, which for example can consist of a visual text of hard-to-read letters or numbers, which should be written in a text box. This is hard for a computer to do, but easy for a human, implying that the computer cannot guess passwords by itself, which in turns makes a brute force attack unacceptable time consuming.

2.5. Computer Game Industry

The CGI started in the 1950’s evolved dramatically in the 2000’s. In the beginning when companies started to develop and sell computer games, the products were sold in physical stores and the games were played by a single user at a time. When computers got connected to each other and internet was used by the commonage, multiplayer games in which two or more players simultaneously could play with or against each other started to be developed.
Many games are combining these two approaches, resulting in games in which the player can chose to play “against the computer” or against other human players, referred to as single player respectively multi-player games.

2.5.1. Distribution

The world’s largest computer game distribution service is called Steam, created in 2003 by Valve Corporation (Valve). In the beginning they only distributed games created by Valve, but later on they started to distribute and sell games created by other companies. Steam is an internet based service implying the fact that all the customers have to download the games to become able to play them. However games can still be bought in physical stores as well as on other websites, for later on being registered for Steam. Approximately 90 per cent of all games bought today, are bought and downloaded online (using internet), out of which approximately 75 per cent was bought using Steam. Game distributors such as Steam are taking a commission from every sold product, which for Steam is approximately 30 per cent of the selling price.

The distributors are by nature attracting more customers, since they are offering a broader field of products and brands. Two major drawbacks using distributors, from a software company's perspective, are the lowered profit per sold product based on the distributors’ commission and the risk for the customer to be attracted to another developer's products instead of the company's products. Both are related to loss of sales. (Sjögren, 2015a). Sjögren (2015b) describes that when sale is performed within the software, a clear link between a specific customer's buying behavior and the customer's usage behavior of the product will be created, which in turn relates in useful Big Data.

2.5.2. Additional Downloadable Content

Extra DownLoadable Content, called DLC, is additional features for a certain game which can be downloaded from a game publisher or other third party content producer after the actual game is obtained (Xicota, [no date]). DLC is not a new phenomenon, but crucial in the CGI today since in general the profit margin of the actual games are low due to high production costs (Lagergren, 2015). As further described by Lagergren this is based on the fact that the actual price of a computer or video game has not changed or even been aligned with the inflation, but has remained the same for almost 20 years. Games today are offering a lot more entertainment hours which is related to higher investments into the production, but as described by Lagergren the industry in general is too conservative and deliberate, and does not as other industries get paid for extra value.

As a consequence to the relatively low profit margin and unwillingness to increase the cost for the actual game, computer game developers are working more and more with DLC, which is not necessary for the game but may increase the game experience (Lagergren, 2015; Xicota, [no date]). DLC it not exclusively used for free to play games, but also for ordinary games. A coming trend is to more or less divide game stories into chapters, where every chapter costs additional money and is consequently directly linked to the number of
additional entertaining hours offered (ibid). Other DLC products are more directly linked to the current point in the game where the player currently is, which can be beneficial to provide in an in-game-store, since a delay of the buy may imply lost sales. As described by Xicota ([no date]) DLCs can, besides from increase the direct profit, make lost customers return.

2.6. Personalized Marketing

PM is a field within the theoretical field of marketing, which is often discussed for its positive as well as negative implications. A case describing large negative effects caused by PM is the American retailing company Target, which could predict a young girl’s pregnancy before her father did. Based on the purchasing data from the girl which the company was collecting, they could match it to their database of Big Data and predict that the girl was pregnant, which related in sent out offers for baby gear (Ellenberg, 2014; Hill, 2012). In this specific case, which spread around the world as a terrifying news, a lot of negative public relation influences was spread against companies storing and using this kind of data, due to privacy and trust issues (Duhigg, 2012). However it may still affect the company in a bad way, due to feel of insecurity by customers (Yu, 2011). The concern of customer integrity related to PM is strengthened by Chellappa and Sin (2005, p. 3), which describes how the use of new and modern technology in PM, “give rise to grave concerns of privacy on the part of the consumer, which may largely affect the viability of personalization strategies”. As described by Alidoost and Lärkert (2008, p. 13) the development of technological innovations makes today’s PM possible to use on an even broader scale.

An, in the daily life, often used approach of PM is to personify email mail merge by writing the customer's name in the beginning, instead of just “Hi!” or “Hello!”. Yu (2011) researched this behavior and could identify negative implications related to such personalized emails. The research showed how many customers immediately deleted personalized emails and also got a bad perception of the company due to privacy intrusion. In particular personalized emails from companies the customer was not earlier aware of implied a negative perception of the company, since the customer felt that unauthorized people had got their personal data. This theory is strengthened by Alidoost and Lärkert (2011, p. 45) which investigated how people’s attitude for the advert itself, the product and the word of mouth. The study showed that people was negatively impacted by too clear personalization in the marketing but that personalization to one certain level is positive, which can be explained using an inverted u-curve, further described in Chapter 2.6.2.

Personalization is by Ward (2000, p. 450) described as a specialized form of product differentiation, in which a solution is tailored for a specific individual and by Peppers and Rogers (1997b) defined as the process of using customers’ information to deliver a targeted solution to that concrete customer. This customer data is as described crucial for a company to handle correctly and therefore PM is a linkage between marketing in general and the handle of personal data, which in turn is related to data security and customer integrity and privacy, as previously described.
2.6.1. Positive Effects

Several aspects, such as getting customers' attention, increasing loyalty as well as building brands, are linked to the positive effects of PM (Simonson, 2005; Ansari and Mela, 2003; Riecken 2000; Alba et al., 1997). It is further linked to increased rate of customer retention as well as overall profitability, argued by Reed (2011) and by Winer (2001). From a customer's perspective one positive effect of PM is the individually offers they may receive and the individual service which both may enhance the experience of the product and the company, as described by Fan and Poole (1996, p. 190-197). This positive experience is linked back to the positive impact on the company brand as well, due to enhanced public relations. The enhanced experience seem to be related to the fact that personalized messages are more useful which also makes it more interesting to investigate further, which in turn may lead to a purchase. The decision making process it also made easier, due to the fact that the information is not that overwhelming, but more narrowed down and relevant (Tam and Ho, 2006).

Related to the idea of enhanced decision making related to PM is the technique of creating self-referent messages which is a common approach according to Wyer and Srull (1989) and Sujan et al. (1993). Sujan et al. (1993) also showed that information related to memories awakening emotional responses as well as feelings. Memories are, as argued by several authors, linked to the self, which is affecting memory recall, judgement as well as behavior (Hunt and McDaniel, 1993; Klein and Loftus, 1988). White et al. (2008, p. 40) describes how personalization of a message implies that the “degree of distinctiveness” is increased, by for example adding personal data such as demographics and psychographics. The linkage between self-relevant information and increased attractiveness of a marketing offer is argued to be true by Kircher et al. (2000, p. 133), which describes how self-relevant information and self-knowledge is separated from general objective information in the memory system.

One specific approach for performing PM is email. As described by Alidoost and Läerkert (2008, p. 13-14) it enables personalized communication to customers at a low cost. In a study of Jen-Hung and Shyu (2009) it was shown that personalized emails related to customer relationship enhances the quality of the relationship, the perceived quality as well as the loyalty in general. In order to increase the number of people opening and interacting with the content of the email, it has also been shown in several studies that the use of a customer’s name in the greeting is beneficial (Albrecht, 2004; Yu and Cooper, 1983).

2.6.2. Risks and Interventions

While there are, as described in Chapter 2.6.1, several positive effects of PM, both for companies and customers, there also exists risks and negative effects of it. Much of the findings related to negative aspects of PM is related to personal integrity and privacy, in turn linked to the increased sharing of personal information, which as described by Alidoost and Läerkert (2008, p. 15) can be thought of increased transparency. The authors further describe how studies have shown that customer “may not be willing to share as much information
about themselves, due to concerns for privacy”, which becomes problematic for a company that wants to perform accurate PM.

Based on this contradiction between customers who want personalized data but not want to increase their own transparency, the phenomenon is called the “privacy paradox problem” and investigated further in a study by Awad and Krishnan in 2006 (p. 25-26). The findings highlighted the dilemma that “consumers who value information transparency features are less willing to be profiled online for personalized service and advertising”. Based on the results of the study the authors argues for one recommendations for companies using personalization, described below, and divided into two parts based on if the personalization is regarding service or advertising.

In general the authors argue for that companies should focus on customers willing to share information to increase the perceived value of the outcome of the personalization. The main reason for this is the finding that increased perceived value will also increases the willingness of spreading more personal information. As described by the authors, in the case of “personalized service” the benefits are in most cases outweighing the costs of privacy invasions, and therefore it is not that critical.

On the other hand, if it is “personalized advertising”, the benefits are less apparent, and the focus should be put there. This is directly linked to the fact that the privacy intrusion in this area is rather apparent, such as email advertising which can easily be perceived as “spam”. (ibid, p. 25-26). Related to the problem of customers 'privacy, it is argued that another solution to the problem is to clearly describe for the customer what data is used, as well as to letting them decide what should be used in the setting (Leader: Win users' trust, 2009). This is strengthened by Savadkoohi (2012, p. 65) who describes how companies can handle the problem with privacy issues by “letting customers have control on their information”. This will build trust, which in turn will lead to that customer “more easily provide companies with their information”. Savadkoohi further describes another important aspect of gaining trust, namely to avoid overloading of repeated “similar personalized promotions”. This theory is strengthened by Pålhlman and Waldenskiöld (2013, p. 62) as well, which based on their findings stresses the importance of letting customers approve the use of personal information, before the PM is performed. This to get the most positive effect of the marketing, and not be perceived as a privacy intruding company.

As described in Chapter 2.6.1 it was found that several authors had during their own personal investigation been able to identify some patterns of customer perception. The patterns of customers’ attitude towards marketing advertisements were based on the level of personalization which in turn could be matched to a model of an inverted u-curve.

Based on the findings in the study performed by Alidoost and Lärkert (2011, p. 32-44) it was shown that the three aspects related to customer perception of marketing, towards the advertisement itself, the marketed product as well as future word of mouth intentions all can be mapped to the u-curve. The u-curve of this study is shown in Figure 2.5. The three levels
of personalization, “not personalized”, “semi personalized” and “very personalized” was the basis of email marketing where the first group had no personal content, the second group got emails including their name and the last group got emails including modified pictures related to them (ibid, p. 24).

![Image](image.png)

Figure 2.5: U-curve framework, linkage between personalization level and customers' attitudes. Based on data from: Alidoost and Lärkert (2011, p. 32-44)

One separate risk of PM, and marketing in general, is as described by Påhlman and Waldenskiöld (2013, p. 63) offers made to push for a purchase. This problem is extra relevant for PM, since it is explicitly directed towards a specific customer.

### 2.6.3. Product Involvement and Relevance

As described by Tam and Ho (2006), an advertisement must be relevant to wake interest of the customer, which in turn leads to lowered risks and enhanced benefits from the offer itself. In order to be affected by the personalization, it is by Meyers-Levy and Peracchio (1996) argued that the motivation for the product is relatively high. If motivation is low the customer often becomes inattentive to the message, and therefore also loses the self-referent cues in the message, implying that the level of personalization is not relevant. From this point of view it is crucial to not just personalize the marketing, but also make it relevant for the customer. This is further strengthened by the findings in the research performed by Pastor (2014, p. 43-44), who emphasizes that all customers on websites should be encouraged to log in, since it has been shown to increase the likeliness of relevant marketing. He further describes how cross selling is useful to make the customer feel familiarity and security, this by relating to previously bought or visited products. In more detail he also emphasizes that relevant products should be promoted immediately when the user visits a new product on the website. This is related to retargeting, which handles how to bring a customer back to a visited but not yet purchased product, which is argued to be a beneficial technique.

Several authors are pointing out this importance of earlier usage of the products and therefore also the relevance of the marketing. In order to increase the likeliness of positive attitudes towards an advert, it is beneficial if the customer has memories of usage or experience of the product (Sujan et al., 1992). This involvement has by Alba and Hutchinson (1987) been
divided into several categories of customer experience of the product, such as earlier advertisement exposure of the product, information search, usage of the product itself as well as communication and interaction with a salesperson from the company. Further on it is argued that that the actual level of involvement of the product is related to the apprehension of the product marketing (Celsi and Olson, 1988).

Based on this it is obvious that many studies have shown that marketing should be relevant for the customer and that the relevance is increased by earlier experiences of the product. From this point of view, PM may be successful due to the possibility to use the knowledge about a customer to personify the marketing, but also that it is crucial to target people with earlier experiences.

Besides from using customer data for increasing the relevance of the marketing, better fit can as stated by White et al. (2008) and Simonson (2005) be achieved. This can be managed in the connection between the marketing advert and the consumer, by broadening the involvement in the product or by explaining the product more thoroughly in the ad. As soon as a good fit between the customer and the marketing is achieved, it is crucial to investigate the costs and benefits of the marketing, from a customer perspective. The benefits of a marketing advert is by White et al. (2008, p. 42) defined as perceived utility. Besides from using data and knowledge about the customer for just creating new personalized offers, it as described by Issa (2014) also useful for monitoring if a sent offer was perceived positively. The author describes how for example a link in email can be checked, and if the link was used but the product offered was not purchased, it may be registered as not relevant for the customer. This in turn can help the company to in the future not send this non relevant offer again.

The perceived utility must exceed the psychological “costs” of receiving the personalized messages, but it is further argued that valuable products and marketing advertises for a customer implies that detailed PM is performed (ibid). It is strengthen by Postma and Brokke 2002 as well as by Fan and Poole (2006) that better results will be achieved if the marketing advert is tailored for the customer. Related to the “costs” of sharing personal information it is as argued by Chellappa and Sin (2005, p. 9) and Bagozzi (1974) crucial to reflect on the fact that the “cost” of sharing private data may increase later on, since as soon as the data is shared, it may be used in the future as well. This is strengthened by Amin and Birgisdottir (2012, p. 34), which through their study showed that people today however want PM. As previously described one example of problems related to the data used for PM is the trust, which can be enhanced by better and clearer privacy policies. However most theories assumes that people does not want to share data, which makes PM hard, and it is crucial to always offer more value than the cost of revealing personal data. Amin and Birgisdottir argue for people to re-think these theories, due to the fact that people seem to demand personalized offers, they do not want to be anonymous. However they still argue for the importance of customers’ trust, implying that they recommend companies to, as they describe it, “inform and educate their customers on how their personal data is being collected and processed.”.

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White et al. (2008) further describes how PM has to be justified if the perceived utility is relatively low. If a marketing offer is not perceived as valuable the company has to explicitly describe why the personal data is used to avoid negative perception of the marketing itself. Respectively if the perceived utility is high, the use of personal data to create a PM advert does not have to be justified. This is strengthen by Awad and Krishnan (2006) and Chellappa and Sin (2005) which all describes that for example the psychological cost of sharing personal data has to be compensated by high value in the marketing offer.

As introduced in Chapter 2.6.2 customers’ attitude towards marketing can be thought of as an inverted u-curve. The basis of the findings are, as described by Meyers-Levy and Peracchio (1996) as well as by Alidoost and Lärkert (2008, p. 16), that self-referent messages are increasing the “persuasive effect” initially, but as soon as it get to personalized, it will sink. This decrease of effectiveness is strengthened by Mick (1993, p. 421) as well as by Brehm (1966) in his reactance theory and by Miron and Brehm (2006, p. 6), which shows how customers can feel threats to their own freedom. As previously described it is recommended to enhance the perceived utility of PM, as argued by White et al., (2008, p. 48), "firms hoping to deepen consumer relationships through personalization should maximize perceived utility before sending highly distinct personalized messages". However, the attempt of increasing utility should never risk making false assumptions of the customer, since this may damage the relationship between the customer and the company (Simonson, 2005, p. 43).

Based on these findings it is as argued by Meyers-Levy and Peracchio (1996) beneficial to use a moderate level of personalization in the marketing. People are getting relevant information which they can refer to, but it is not detailed to that extent that people feel insecure or that intrusion of their integrity and privacy occurs. As shown many authors argues for a moderate level of personalization. This is however partly denied by Pählman and Waldenskiöld (2013, p. 60-61) which based on their findings argue for that customer, if PM should be used, prefer specific personalization rather than targeting just based on for example demographical belonging. This recommendation is not dementing the previously described findings and theories, but should be taken into consideration. As described by the authors the main argument for this is the risk of incorrect targeting, which may occur when a group rather than a specific person is targeted. They further argue for that, when the targeting is performed correct, it may enhance the CRM activity, further described in Chapter 2.6.4.

2.6.4. Different Approaches

As described by Arora et al., (2008, p. 306), One-To-One (OTO) marketing, marketing performed by one company towards one specific customer, can be divided into two main parts, customized and personalized marketing. OTO advocates tailoring of one or several of the factors of the marketing mix to adapt to the specific individual the marketing is aiming for (Shaffer and Zhang, 2002, p. 1143; Peppers et al., 1999, p. 151; Peppers and Rogers, 1997a). The marketing mix can be seen as a set of factors used to attract customer in the desired target group, such as price, product, place and promotion Kotler (2000, p. 9).
The personalization approach is by Arora et al. (2008, p. 306) described as when companies adapt their marketing mix based on previously collected data about the customer, while the customization approach is based on that the customer itself can customize the product before buying it. As further described by the authors, personalization to one individual can be thought of as the extreme case, while targeting to a segment of customer is less extreme (2008, p. 310). Ward (2000, p. 445) describes customization as a form of personalization, while Peppers et al. (1999) argues that the difference between these two theories are not necessary to take into account.

Based on the authors’ work, they conclude that OTO marketing has grown recently mainly based on the data analysis that can be performed due to new technology. Further on they suggest personalization ahead of customization if reliable data and information about the customer is available, but that economic and psychological aspects play an important role in the decision. At last they identified that it seem favorable to personalize the price and customize the product in the marketing matrix, but that these decisions should be based on customer responses (2008, p. 318). As argued by Chellapa and Sin (2005, p. 182-183), there has during a long time of using personalization been common that offline vendors uses it mainly for exclusive premium offers, while it for online vendors has been more focused on price optimization. The price optimization has in many cases been seen as more or less necessary to be a valid competitor in the market. This is by Savadkoohi (2012, p. 17) called “price-customization”, to adjust the price of the product or the service based on who the customer is. The author describes how, using personal data, the service can be enhanced and more personalized based on which the prices can be increased, which is beneficial for the customers as well as for the companies.

As described above, marketing directed to specific customers or customer groups can be divided into customized and personalized approaches. Further on the actual personalization are in literature often divided into several other parts. According to Tam and Ho (2006) the many different terms in the theoretical area easily creates misunderstanding as well as confusion. Also the paper written by Vesanen (2007) highlights this issue. The terms personalization, service personalization as well as web personalization are in some literature used with equivalent meaning or with minor differentiation. Imhoff et al. defined in 2001 (p. 467) that personalization related to communication is the ability of a company to recognize and treat its customers as individuals using targeted banners, personal messages and other special offers on for example the bills from the company. This differs from how Thurman and Schiffers (2012) describe it, as the use of various technological features used to adapt the content, arrangement and delivery of a communication to individual users. Related to online purchases, Thirumalai and Sinha (2013) divides the process into two separate steps, the decision making step and the purchase step. These are built up by the actions of making the customer chose the specific company's product respectively to handle the actual purchase and after purchase activities. This theory is linked to the ones related to customer decision journey, described in Chapter 2.7.
Jackson (2007) argues that personalization should be combined and integrated with the Customer Relationship Management (CRM) in a company. CRM can be viewed as an approach of attracting, gaining and retaining customers. By Gummesson (2002) CRM is described as a win-win situation where customers can get better service, while the companies gets more relevant and useful information about the customers. As described by Savadkoohi (2012, p. 8) personalization often enhances the CRM, since more data is collected and can be used. Vice versa improved CRM will often lead to the possibility of better personalization (ibid, p. 10). The author further argues that the benefits are both short-term and long-term, since more knowledge implies better and more relevant marketing offers for the customer who in the long run leads to more satisfied customers due to the fact that the personalized offers more often will be perceived as good and as a good fit (ibid, p. 12).

As described, authors argue for a linkage between CRM and PM. Based on this, Figure 2.6 emphasizes this theoretical relations which can be thought of as a loop, going from CRM to PM.

![Figure 2.6: Trust loop, how different aspects affects the company as well as the customer. Data from: Savadkoohi (2012, p. 61-62)](image)

Figure 2.6 consists of six different aspects which are all argued by Savadkoohi (2012, p. 61-62) to affect a company as well as its customers. The sign related to every bridge going from aspect \( a \) to aspect \( b \) indicates how an increase of aspect \( a \) affects aspect \( b \). For example if the profitability in a company increases, more money can be used for PM, which implies better PM, an increase of trust implies less privacy concern and a decrease of privacy concern implies an increase of purchase intent of the customer. In other words, a minus sign neglects the change and a plus sign does not change it.

As described in Chapter 2.6.2 personalization is argued to affect the CRM mainly due to the fact that it increases the amount of useful personal data, in short term. In the long term the personalization leads to increased loyalty due to increased satisfaction based on better fit of the personalized offers. Better CRM and loyalty is argued to make customers’ trust companies more which is linked to the loyalty itself. The raising problem with customers feeling insecure and concerns related to privacy and integrity decreases while the trust
increases. In parallel with decreasing concern for the privacy, the intent to purchase increases, which in turn leads to increased profitability for the company. The loop is closed by the fact that increased profitability implies that more money can be used for personalization. (Savadkoohi, 2012, p. 61-62)

### 2.7. Customer Decision Journey

Since marketing is a tool for making customers willing to purchase products, it is essential to investigate the customer’s decision process towards a purchase. An often used model for describing a customer's journey towards a purchase of a product or service is the purchase funnel (Court et al., 2009, p. 1-2), seen in Figure 2.7. The original funnel was created by Townsend (1924) and was based on the AIDA-model (Attention, Interest, Action and Satisfaction) created by E. St. Elmo Lewis in 1898 (Joshi, 2010). As described by Court et al. (2009, p. 2) the first steps in the journey towards a purchase, namely awareness, is related to making customers aware of different companies, brands and products in the market. The models describe how the initial large number of aware customers is decreasing on the way towards the final purchase, due to increased knowledge based on gathered information.

After a purchase the customer can be seen as either defected or intended to perform a repurchase, which is based on how satisfied the customer feels after a purchase (THE PURCHASE FUNNEL, [no date]). If the customer is still interested in the brand, it can jump back in the funnel for another round for another or the same product, but are able to skip the first step since it is already aware of the brand. The after purchase experience is by the authors argued to be affected by for example service and warranty. Finally the authors emphasizes the growing importance of social media and that the linear model nowadays is too simple to explain all different paths a customer can take. The authors argues that this old and linear model is not enough today to describe the customers and the market, based on which they have come up with an improved model, called the consumer decision journey.

As can be seen in Figure 2.8, the new model is based on a circular journey, rather than a linear one. In the initial consideration phase, the consumer considers an initial set of brands, based on brand perceptions and exposure to recent touch points, during the start of the journey towards a purchase. During the journey, in the active evaluation phase, the consumers add or subtract brands as they evaluate what they want. Ultimately, the consumer selects a brand at the moment of purchase, in the final phase. In the post purchase experience phase, after purchasing a product or service, the consumer builds expectations based on experience to inform the next decision journey. (Court et al., 2009, p. 2-4)
The normal funnel approach is according to Court et al. (2009, p. 3-6) based on that consumers are systematically narrowing the initial set of brands down, and later on buys the products. The research performed by the authors shows that it is possible for customers to add other brands in the evaluation phase, implying that the original funnel approach is not correct, and that companies may benefit from performing pull marketing to be “added” by the customer to the set of interesting brands. Further on the default recommendation has been to push the products, using marketing, onto the customers. The authors stress that the customers nowadays are doing a lot more research, implying that the pull part is important as well, for making people spread the brand using word-of-mouth as well as monitoring information websites.

Court et al. (2009, p. 6-8) further describes that when a customer finally has purchased a product, it is especially important to keep on working to make the customer loyal. This since people nowadays is more willing to spread information about what they have bought, which may influence many others. The research also suggests that the proportion of attracting customers in the initial face versus keeping them later on differs a lot. A company just attracting people in the initial step and then losing them may want to focus their marketing on brand positioning, while the opposite may want to be broader in their marketing.

2.8. Marketing Strategy

Since PM is a sub part of the broader field of marketing, it is essential to investigate the subject of marketing strategy in general as well. There are two main strategies related to how companies can market their products, by using the push strategy or the pull strategy. As for
marketing strategies in general, the goal is to increase the number of sold products, implying increased revenue. Both strategies are focusing on attracting customers, but from two different directions. In the Marketing Communications Mix, as described by Kotler (2000, p. 278) one of the five main factors are the choice between push and pull strategy. As can be seen in Figure 2.9, the push strategy is a linear process pushing products all from the development process to the customer, while the customer demand in the pull strategy approach is affecting the development directly as well as indirectly by expression their demand for the marketing division.

As emphasized by Corniani (2008, p. 45), these two strategies are often seen as opposites, since the forces driving the development forward comes from different directions. She also highlight the fact that companies can use both approaches, on different parts, based on which is more suitable for that specific process and product (ibid, p. 47).

2.8.1. Push Strategy

As described by Kotler (2000, p. 278-279), the push strategy “involves the manufacturer using sales force and trade promotion to induce intermediaries to carry, promote, and sell the product to end users”. As further described this approach is often a good choice when there is a low brand loyalty in a product category, since the push strategy is focusing on purchase choices made in the store. Magloff ([no date]) stresses the fact that the push strategy often involves promotion or coupons for specific products, pushing a specific product to a customer in their choice between different products and different brands.

2.8.2. Pull Strategy

As described by Kotler (2000, p. 279), the pull strategy emphasizes to create a brand awareness, making customers actively seek for a specific product, before they even enter a store. Kotler stresses the fact that this strategy is especially useful when there is “high brand loyalty and high involvement in the category; people perceive differences between brands”. Magloff ([no date]) highlights the fact that the pull strategy is more long term work, based on building up a customer demand for a product or service.
2.9. Summary of Literature Study

As a basis to PM this literature study was initialized by investigating customer loyalty within the field of electronic commerce. Loyalty was shown to be built up by trust and satisfaction, which in turn is built up of service quality. These subjects are relatively old, but are developed into the field of electronic commerce, where for example trust for the company is of huge importance due to the fact that the communication is not performed face to face any more. Loyalty itself is in companies often created using loyalty programs, which aims to create a strong bond with the customers. Within the field of e-trust three important factors are confidentiality, integrity and availability which in combination make up the CIA triad, which can be seen as a model for important aspects to consider in the electronic commerce market related to data security, integrity and privacy.

In order to nowadays perform good PM it is valuable to use a lot of customer data, called Big Data, which can be gathered from various channels. Big Data within the field of PM is related to e-trust, since the data may be used in a harmful way if it for example is leaked to external parties. The two main subjects within this area is personal integrity and privacy, which is related to which data is gathered, how it is gathered, how it is stored as well as how it is used. The use of Big Data can be categorized, which is based on how it is used and how it is collected. Which data to store is decided by the company and should be based upon what should be achieved, while the actual storage and transmission of data is more related to good or bad approaches from a data security perspective. There exists several techniques for ensuring the security of the data, and the security itself has in many cases to be weighed against decreased speed and or increased need for storage.

Within the CGI a relatively new genre, namely freemium games, has evolved. These affect the subject of earning money in the industry. Related to the type of game is DLC which is additional features which can be bought or in some cases downloaded for free. Regardless of the type of game, it is crucial to maintain a good relation with the customers to keep them active and as returning customers.

Based on these investigated areas, the final part of this literature study is PM, which is marketing performed in order to target a specific person or group, which enables more accurate and relevant offers and communication. Targeted marketing has in several previous studies been divided into personalized and customized, where the customized approach is built upon that customers by them self are customizing the data, while the personalized approach is based on that people gets marketing performed just for them. As described by several authors too specific targeting may hurt the company and its reputation due to perceived privacy and integrity intrusion. Due to all new technology the PM has increased and it is shown that even though it seems more expensive than regular marketing, it is more cost efficient since the people exposed to the marketing is hopefully more interested in the subject than the commonage.
As with many approaches, this literature study showed how PM is related to both positive and negative aspects, for the customer as well as for the companies (Savadkoohi, 2012, p. 65). People are different, and therefore also differently willing to share personal information, which implies that companies have to adapt to this to keep a good relationship with the customers. What in some cases can be perceived as intrusion on personal integrity and privacy may be compensated by high value and utility, which can be linked to the need for personal data. Due to the fact that PM is affecting the relationship between customers and companies it is by some authors argued that PM should be integrated with the CRM in the company, since the data used for these two parts is related, and may imply even further knowledge about the customers.
3. Methodology

In this chapter the methodologies used to reach the goals of the study are presented. It is followed by an investigation of how these choices affect the perceived quality of the work in form of reliability, validity as well as generalizability. At first a clarification of the whole methodology is described, followed by an analysis of how the sought goals are linked to certain approaches. This is in turn followed by a description of the used approaches. At last the used approaches are analyzed in relation to quality aspects.

Data is collected both from previous research within the area as well as combined with empirical data to provide an answer to the research questions and meet the objectives. The study primarily uses qualitative research methods, with a literature study being the first milestone. The literature study is needed to collect theoretical information and frameworks related to customer loyalty and integrity, as well as PM. Relevant literature is found as articles in various management journals accessible through databases such as Science Direct, Research Gate and KTH-B Primo as well as in books. The methodology used in this study is mainly described and analyzed using the concepts presented in the book *Business Research - A practical guide for undergraduate & postgraduate students*, written by Jill Collis and Roger Hussey in 2009.

As a clarification of the structure of the used methodology further described in Chapter 3.3, 3.4 and 3.5, Figure 3.1 illustrates how the main components of the used methodology is built up and connected. The methodology consists of a case study of the CGI (chapter 3.4), a literature study (Chapter 3.5) as well as a benchmark of role models industries related to PM. The investigation of the CGI (Chapter 3.3) is divided into three main parts, a preliminary investigation based on unstructured interviews, an investigation based on semi structured interviews as well as an investigation of the customers to Paradox Interactive based on a survey and on collected data from the company. The investigation of the industry is extended with an internal investigation of information. In addition a literature study is performed which is linked to these both main components.

To meet the main objective stated in Chapter 1.2, at first other industries are investigated and analyzed to define an approach and general characteristics for these industries. Secondly the CGI is investigated and analyzed and thirdly, the characteristics from the other industries are compared to the CGI, based on which modifications of the identified approach can be performed. Based on the identified approach, which has been modified to be aligned with the CGI, recommendations for the companies in the CGI is presented. This workflow is described in the conceptual model in Figure 3.2.
3.1. Choice of Problem Area and Case Company

As previously mentioned an ongoing trend shift within the sales strategy of computer games is to, to a larger extent, involve a large amount of the selling into the actual software. This implies that computer game customers should be able to buy merchandise and other related game products. Companies in the industry is interested in getting prepared for the shift, and would therefore like to get increased knowledge about how such in-game purchasing can be performed. The general problem area was identified by the author in collaboration with Tobias Sjögren, the supervisor at Paradox Company. The author had an interest for marketing and IT, based on which the connection with the company Paradox Interactive was initiated by one of their employees.

Based on the area of interest, the author chose to examine the new paradigm and its possibilities from a sales and marketing strategy perspective, focusing on PM, privacy and integrity as well as related technical solutions. In collaboration with the supervisor at Paradox Interactive, Tobias Sjögren, the area of investigation was determined based on the identified problem area. The area of investigation was by the author split into four sub objectives as well as two general research questions. Based on the author’s interest for IT, the final area of investigation got focused on computer security related to customer integrity and privacy.
3.2. Research Approach

As described by Collis and Hussey (2009, p. 4) a study can be classified based on a number of different factors, such as the outcome of the research, the purpose of the study, in which directions the research logic moves as well as how the actual research process is actually performed. Based on these four main factors, this subchapter describes the characteristics of this study.

3.2.1. Purpose

As described by Collis and Hussey (2009, p. 4-6) the purpose of a scientific study can be divided into four main areas, exploratory, descriptive, analytical and predictive. The areas are in the presented order, going from a research area where little or no recent study has been performed and therefore the area has to be explored to the reader for further research, to predictive research where the information in the investigated area is sufficient for making prediction about related areas based on the information.

Based on this classification of purpose of research, this study is based on predictive research, since the goal is to, based on information about related industries and the CGI itself, predict how PM most favorable should be performed in the CGI. The prediction is related to the main objective of this study, to provide a recommendation of how companies in the CGI should implement PM. However the work is influenced by analytical work, since the industries using PM has been analyzed to identify how to implement PM most beneficially.

3.2.2. Research Process

Collis and Hussey (2009, p. 7) divides every scientific research into two main categories based on the method used for gathering and analyzing data, namely quantitative and qualitative research. The authors describes how a research can be a combination of the two approaches, but it should be obvious which is the main characterizing approach used during the work. A quantitative research is a research in which the findings are based on numerical data, from which results can be drawn based on a statistically ground. The qualitative approach on the other hand is based on non-numerical data, such as interviews or other observations not resulting in numerical data.

As described in Chapter 3.4 and Chapter 3.5 this is based on a qualitative approach, with minor quantitative elements to strengthen the findings and get a clearer insight into the basis of customers in the CGI. The two sub objectives O1 and O2 are both based on analysis of different industries. An analysis can be performed using different approaches, but as described the chosen approach is a mix between qualitative and quantitative techniques.

3.2.3. Outcome

As further described by Collis and Hussey (2009, p. 8) and by Bryman and Bell (2010, p. 23-26) the process in combination with the outcome of the research can be divided into two main categories, inductive and deductive. In a deductive research, as described by the authors, the
general approach is to move from general knowledge to a particular solution, which often is based on thoroughly investigation of theories and models in the area, which are tested and evaluated in a particular environment. The inductive research is moving in the opposite direction, based on an investigation of a particular area the outcome will be used to develop new theories generalizable for similar environments. In this inductive study the research of the specific computer game company Paradox Interactive is studied, based on which the findings are used for creation of theories in this industry, which are generalizable for the CGI as a whole, with a few exceptions. This outcome is related to the main objective as well as the second research question, linked to how PM should be used in the CGI.

3.2.4. Scientific Paradigm

The overall paradigm and process of a study can be put on a scale between positivistic and interpretivistic (Bryman and Bell, 2010, p. 27-32; Collis and Hussey, 2009, p. 55-64). The positivism was the initial paradigm, based on which the opposite paradigm interpretivism was built for creating a theoretical basis for non-natural science studies.

As described by the authors, using the positivistic paradigm the research is based on logical reasoning in several steps, where all results has to be thoroughly investigated and tested to prove the correctness of it. Since the main point of view using this approach is that everything in the world is fixed and cannot be changed or influenced by anything, there can only be one correct answer and result, the researcher can for example not be an influencing factor in the work. Since only fully measurable instances can be part of the results, a quantitative approach is often used in this paradigm. The research is often based on hypothesis, which are sought to be verified or falsified, based on logical reasoning. At last the positivistic research approach is often based on a formal style of writing using an especially passive voice. (Bryman and Bell, 2010, p. 27-32, 40; Collis and Hussey, 2009, p. 55-64)

Since many persons perceived the positivistic paradigm as insufficient in some research works, the interpretivistic paradigm was created as an alternative. One of the main arguments for the necessity of another paradigm was the fact that complex phenomenon did not have a single measurable factor. The used approach in this paradigm is often qualitative, since for example the importance of getting a thorough understanding of the environment is larger than the importance of getting measurable individual factors. The research strive for unbiased results, but instead of using only fully objective methods, the research is involving the subjectiveness in the research, based on the faith that there exists different truths, which are depending on the researcher. The research in interpretivistic research is often inductive, analyzing smaller samples for a longer time to get a generalizable understanding, useful for similar environments. At last the interpretivistic approach is based on an informal style using the author’s personal voice. (Bryman and Bell, 2010, p. 27-32; Collis and Hussey, 2009, p. 55-64)

As described by Collis and Hussey (2009, p. 57) almost none research is exclusively positivistic or interpretivistic, but rather a mix of them, more or less on one specific side of
the scale between the two extremities. As described by the authors, it is critical to identify an approximate location on the scale to create a structure of the work. This study is on the interpretivist side of the scale, this since it is based on a qualitative research focusing on one small sample, the computer game company Paradox Interactive, from which the findings in combination with the study of other industries using PM, results in generalizable theories for companies in the CGI. Most of the findings are fully measurable which in combination with the described inductive research approach indicates an interpretivist research style. However the study is presented using a formal voice, moving the study from a fully subjective research to the more objective side.

3.2.5. Investigation Model

There are several different methods useful for positivistic respectively interpretivist research, from which a case study is a suitable approach for an interpretivist paradigm. As described by Collis and Hussey (2009, p. 82-83) the approach is used “to obtain in-depth knowledge” within for example a business or phenomenon. As described by Yin (1994, p. 97) it is useful to combine different sources into a case study to obtain a broad and deep knowledge. As described by Scapens in 1990 there are four different types of case studies, descriptive, illustrative, experimental and exploratory (Collis and Hussey, 2009, p. 82). The case study used in this study is descriptive, since it is the basis of describing the CGI. This is performed to deepen the knowledge used for reaching the objectives and answering the research questions. This study investigates a business, namely the CGI as well as other industries to get an understanding of how PM can be applied in the CGI.

Collis and Hussey (2009, p. 83) describes how the process of a case study can be performed, which is divided into five steps. At first the environment of the case should be chosen, what context will actually be studied. It is described that the study can be represented by several minor cases, which is the approach used in this study. This is in this research represented by the several external studies of industries using PM, as well as the thoroughly investigation of the CGI. Secondly it is common to perform a preliminary investigation of the area as well as finding and analyzing related theories and models. This part is in the study performed in the literature study, further described in Chapter 3.4.

As soon as the case area is decided and the environment is briefly investigated, the following step is by Collis and Hussey (2009, p. 83) described to handle the actual choice of how to perform the study. It is stressed that the use of several different methods, such as interviews and surveys are common and a preferable approach. Based on this proposal of mixing data gathering methods, it was decided to combine a customer survey with interviews and external sources in this study to investigate the CGI. The related industries using PM was, due to the presented delimitations mainly based on external sources. Collis and Hussey further describes how the following step is based on analyzing the identified data in a systematic way, which in this study is performed by analyzing the customer survey result as well as analyzing and examining the interviews and external sources. At last the analyzed data is written into the report, which is an ongoing work throughout this research. The performed case studies in this
interpretivistic study are focused on sub objective O1 and O2, to analyze business in relation to personalized marketing.

3.3. Investigation of Computer Game Industry

In order to get an understanding of the game industry as a whole, a case study based on interviews at Paradox Interactive is performed, as well as a customer survey directed towards their customers. This study is performed to reach sub objective O2, to analyze the CGI based on which it was possible to identify how it differs from the other industries studied. The interviews at Paradox Interactive are divided into two parts, a preliminary investigation with unstructured interviews as well as an investigation based on semi structured interviews.

The preliminary investigation as well as the in depth investigation of the CGI is described in Chapter 3.3.1 respectively 3.3.2, which both consist of qualitative approaches in the form of personal interviews. This qualitative part of the methodology is based on the process of Prasads from 1993 described by Bryman and Bell (2010, p. 300-301), which consist of six steps. The first steps is related to the choice of problem formulations, which is described in Chapter 1.1 and further described as research questions and objectives in Chapter 1.3 respectively 1.2, which is related to what actually should be investigated.

The second step is described as the choice of where to perform the study and with which people. These aspects are described in respectively chapter below, where the choice of place is Paradox Interactive and the choice of people to interview is based on recommendations from the company. The third step is the actual performing of the interviews, which all are performed with employees at Paradox Interactive from which the data is gathered and described in Appendix 7.2. The fourth step handles the analysis of the data, which is performed in Chapter 4.2.1.

The fifth step is related to how the results are related to theory, and can involve two sub steps involving further data gathering as well as narrowing down the problem formulation. In this study the theoretical connection was performed by, as described in Chapter 3.5, continue the literature study during the whole process of this thesis. Additional data gathering was also performed, in this study by performing sequential interviews where the for example the questions for the in depth investigation was built on findings from the preliminary investigation. The final step is the conclusion of the data and report writing, which is the process of this whole thesis.

3.3.1. Preliminary Investigation

In order to get an understanding of Paradox Interactive as a company as well as an insight into the CGI as a whole, the investigation of the CGI is initiated by unstructured interviews with employees at Paradox Interactive. The choice of interviewees is performed based on suggestions made by the supervisor Tobias Sjögren at Paradox Interactive. Based on the recommendations the chosen areas of employees to find interviewees within are limited to business, development, marketing and technology.
Business is chosen due to the need of information related to sales strategy within the company as well as further information about sale trend in the market. The interviews performed with people within the development team are performed to get further information about the core product of Paradox Interactive, the software. People within the marketing department is interviewed due to the need of further investigation of how marketing is performed as well as further information about marketing in general in the CGI. These interviews are also performed to contribute with information to the customer investigation described in Chapter 3.3.3. At last people within the technology department are interviewed to get further information about the technical aspects related to customer integrity and privacy.

The preliminary investigation is initiated with interviews with every head officer in the specified departments, except for the development department, marked with bold text in Table 3.1. The decision to exclude the head officer of the development department was intentional, and based on the fact that this study is not focused on the actual product. Instead these interviews are performed to get a brief introduction of the games. Based on this it is favorable to get information from the actual developers, rather than from their bosses.

As described by Collis and Hussey (2009, p. 144) interviews can be performed in different ways, but are focused on asking questions to selected people to obtain useful data. The authors stresses that a structured approach is often used for positivistic studies, but unstructured are more common for an interpetivistic studies as this work is. As the authors describe, interviews are time consuming and has to be stored, based on which it is crucial to set up a structure for the interview process as a whole. It is also stressed that the questions for the interview are wisely chosen to not bias the interviewee in any way.

Since this is a preliminary investigation of the CGI, used as a basis for the investigation of the company (Chapter 3.3.2), the industry as well as for the customer investigation described in Chapter 3.3.3. This approach implies that the answers are rather hard to compare, but since this was not the goal in this phase of the investigation, it does not lead to further problems.

The interviews are documented and the used material is sent to the specific interviewee for confirmation or declination of the perceived information, before using it in the thesis. During this confirmation process the interviewees are also asked if their name could be presented in the study or if it should be anonymized. All of the interviewees accepted the use of their name in the report. The length of the interviews varies between 30 and 50 minutes, notes are taken during interviews and they are not recorded. All interviews are held in Swedish, which by all is the preferred language out of Swedish and English. The interviews are held in meeting rooms at the Paradox Interactive office, at Götgatan 78 in Stockholm, Sweden.

The main system used for communication at Paradox Interactive is Skype, which is used to invite employees to the interviews. The three invited head officers are invited and all of them accepted to be interviewed. The two developers are randomly chosen and the contact is
initiated during lunch break. Since these interviews are only performed to get a brief insight, the choice of these people should not negatively affect the results.

As soon as the interviews have been performed, it is described by Collis and Hussey (2009, p. 163) important to analyze the identified qualitative data. These methods can be divided into two main categories according to the authors, quantifying and non-quantifying, where the non-quantifying approach is more suitable for interpretivistic studies as this one (ibid, p. 166-167). As described by the authors a critical part of the analysis is based on reducing the data, to sort out the relevant part to not get overwhelmed by the data as well as to get actual results from which conclusions can be drawn. In this process it is stressed by the authors that detextualizing data is a good way of reducing data to relevant data. This approach is used in this study, and detextualizing is performed when suitable to describe the CGI and its internal components.

In summary this phase of the investigation of the CGI is limited to the head officers of the relevant departments based on recommendations from Tobias Sjögren. As a supplement two persons from the development team is interviewed as well. The interviews in this phase is shown in Table 3.1, and marked with “X” in the column “Preliminary”.

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<thead>
<tr>
<th>Name</th>
<th>Official Position</th>
<th>Area</th>
<th>Preliminary</th>
<th>In Depth</th>
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<tbody>
<tr>
<td>Tobias Sjögren</td>
<td>Executive Vice President</td>
<td>Business</td>
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<td></td>
<td>Business Development</td>
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<td>Daniel Lagergren</td>
<td>Business Developer</td>
<td>Business</td>
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<td>Daniela Sjunnesson</td>
<td>Vice President Marketing</td>
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<td>Björn Blomberg</td>
<td>Community Manager</td>
<td>Marketing</td>
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<td>Mats Wall</td>
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<td>Christian Westman</td>
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<td>Technology</td>
<td>X</td>
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<tr>
<td>Brynjólfur Erlingsson</td>
<td>Tech Platform Lead</td>
<td>Technology</td>
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<td>Johan Andersson</td>
<td>Executive Vice President</td>
<td>Development</td>
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In Depth Investigation

Based on the preliminary investigation, the in depth investigation is performed using semi structured interviews. The interviews are performed at first with the same persons as in the preliminary investigation described in Chapter 3.3.1. Based on their suggestions relevant people within their department is chosen as well, as candidates for the interviews. This implies that the choice of population of persons invited to interviews is sound from the point of view that every suggested people within this area within Paradox Interactive are invited to an interview. Bryman and Bell (2010, p. 320) describes the possible lack of knowledge about how to replicate the study as one of the major drawbacks with a quantitative study. The described approach for finding people to interview is performed to increase the transparency and make it easier to replicate the study. As described in Chapter 3.3.1 the main system used for communication at Paradox Interactive is Skype, which is used to invite employees to the interviews. The nine requests for interviews are sent using Skype, and all of them accept to become interviewed.

The interviews are documented and the used material is sent to the specific interviewee for confirmation or declination of the perceived information, before using it in the thesis. During this confirmation process the interviewees are also asked if their name could be presented in the study or if it should be anonymized. The interviewees are asked if the interview can be recorded, which is accepted by everyone. Besides from recording, notes are taken during all of the interviews, which last between 30 and 50 minutes. As suggested by Collis and Hussey and described in Chapter 3.3.1 the answers are detextualized and mapped into a result table. All interviews are held in Swedish, which by all are the preferred language out of Swedish and English. The interviews are held in meeting rooms at the Paradox Interactive office, at Götgatan 78 in Stockholm, Sweden. All interviewees are asked if their name can be published in the report or if they prefer it anonymized. All of the interviewees accept the use of their names in the report.

As previously mentioned in Chapter 3.3.1 unstructured interviews are often used in interpretivistic studies as this one, however the author choose to use semi structured interviews in this phase to get data easier to detextualized and find patterns in. A semi structured interview is an interview based on topics which will be discussed about in the interview, but no specific questions (Bryman and Bell, 2010, p. 362-363). The questions are as in the preliminary investigation open ended, no specific answers are demanded, which makes it less likely to miss relevant information due errors in the choice of answer alternatives. The work of detextualizing this investigation is mainly performed by summarizing the interviews in a matrix of persons respectively the semi structure questions in

<table>
<thead>
<tr>
<th>Tronde Mehnnaz Amanat Bari</th>
<th>Programmer</th>
<th>Development</th>
<th>X</th>
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Table 3.1: Overview of interviewees at Paradox Interactive
a table, discussed in Chapter 5 and shown in Appendix 7.2. The recorded data is used for filling in the matrix, but not used for citations in the study.

As described by Bryman and Bell (2010, p. 369) an interview guide is used for structured interviews and semi structured interviews. For a structured interview it consist of the actual questions, while it for a semi structured interview consist of areas to touch upon on general questions made for leading the conversation into different areas. This is performed using information from the literature study as well as from the preliminary investigation of the CGI and is presented in Appendix 7.3.

### 3.3.3. Customer Investigation

The third step of the CGI investigation is based on an investigation of the customers to Paradox Interactive, focused on loyalty. This is performed as a quantitative approach based on a survey performed in collaboration with Paradox Interactive and following the eleven-step process described by Bryman and Bell (2010, p. 86-88). The first and second step is about the choice of theory respectively a hypothesis, which is related to a deductive approach. As described by the authors this is in most cases performed by reading about theories in the subject area and based on this the hypothesis is an area of interest. In this study the first step is performed by doing the literature study, in which it was identified that customer loyalty is of interest. The survey investigates customer loyalty in general, in parallel with their perception and opinion about PM. Since this study is focusing on technical aspects of PM, mainly how technical solutions are affecting customer integrity and privacy, the survey also investigates the customers’ technical knowledge and brand awareness.

The third step covers research design, which is related to the investigation model described in Chapter 3.2.5, namely a descriptive approach. The fourth step is related to the measurements of the respondents, which is described at the end of this chapter. The two following steps are related to where the investigation is performed as well as to whom. The survey is directed towards customers currently playing strategy games created or published by Paradox Interactive, resulting in primary data about the customers. Therefore the place is Paradox Interactive and the population is their customers. The seventh step is related to administrations of the investigation tools, which in this case is an online survey. The two following steps are related to codification of the data, to make it purely quantitative and easy to handle, as well as the analysis of the data, which will be described at the end of this chapter.

The two last steps involve interpretation of the results as well writing them down. The interpretation of the results is discussed in Chapter 5 while the last step is handled by the finalizing of this report as a whole, where the results are presented as a conclusion is Chapter 6.

In order to get quantitative results, two common approaches are structured interviews and surveys, and according to Bryman and Bell (2010, p. 161-164) there are several differences
between these approaches. Some of the factors described by the authors implying this choice of method are that it is easier and faster to administer, no affecting influences by the interviewer and no variation of the asked questions. However, as stressed by the authors, it is important to keep the negative aspects in mind, such as that the respondent can read all questions on beforehand and that it is hard to know who is actually responding.

As previously described this quantitative approach is used as a complement to the qualitative findings described in Chapter 3.3.1 and 3.3.2, and is as argued by Collis and Hussey (2009, p. 76) linked to a more positivistic paradigm. The authors categorize surveys into two main parts, descriptive and analytical surveys. The descriptive survey is focused on gathering information about a specific phenomenon at a specific time, while the analytical survey is used to find relations between variables using specific frameworks. The used type of survey in this study is descriptive, and provides the study with information about the computer game customers related on the PM and loyalty, at this specific time.

**Sample and Population Size**

The survey is spread to customers related to Paradox Interactive using social media channels such as Facebook as well as related internet forums. The questions are presented in Appendix 7.1.2 and every question in the survey is mandatory. Based on previous survey results, the expected amount of answers is 4000 to 6000, implying that the chance of high statistical significance is high. This due to the fact that the total size of the population of computer game customers are around 700.000.000 worldwide (Diele, 2013, p. 7). As described by Collis and Hussey (2009, p. 211) it is critical to use a sufficient large sample to reach the desired level credibility. However this sample is not representative for the whole worlds computer game customers, but for all active customers to Paradox Interactive, which in total is approximately 1.500.000. Even though the sample probably is enough for the number of all players in the world, the Paradox Interactive customers may not be representative for it. In order to calculate the minimum number of people in the sample, some critical info about the target group has to be determined (Smith, 2013, p. 2). The four needed factors are:

1. **Population Size**: “How many total people fit your demographic?” (ibid) The population size in this study is as presented 1.500.000, the number of active computer game players that actively interacts with Paradox Interactive and their games. As shown by Dessel (2013), the population does not affect the result when the population is rather high and the sample is less than a few percentage of the whole population size.

2. **Margin of Error (Confidence Interval)**: “The confidence interval determines how much higher or lower than the population mean you are willing to let your sample mean fall.” (ibid) As described by Smith it is common to use five per cent as margin of error, but lower is better. The author chose to use two per cent (M1) as the margin of error, implying that for example a result in the survey indicating that five per cent has some specific answer, the world population had answered 3-7 per cent (5-2 = 3 and 5+2=7). Since, as described, the respondents will take two different paths, implying that the number of respondents taking
each track is lower than the whole sample. Therefore a second calculation will be performed with a higher margin of error, five per cent (M2).

3. **Confidence Level**: “How confident do you want to be that the actual mean falls within your confidence interval?” (ibid) As described by Smith the most common value for the confidence level is 95 per cent, but the higher the better. The author chose to use 95 per cent as the confidence level in this study. This indicates that it is with 95 per cent of secureness that the whole population had answered as the sample does, including the margin of error.

4. **Standard of Deviation**: “How much variance do you expect in your responses?” (ibid) As described by Smith the standard of deviation depends on the respondents. Since the survey was not performed when this calculation were performed, it is as argued by smith most favorable to choose a value of 0.5 (S), which the author did.

Smith (2013, p. 7) describes how the confidence level can be converted to a Z-value, which is used in the calculation of the needed size of sample. A confidence level of 95 per cent corresponds to a Z-value of 1.96 (Z). As further described by smith the following formula is used to calculate the smallest sample needed to fulfill the set criteria:

\[
\frac{Z^2 \times S \times (1-S)}{M_1^2} = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.02^2} = 2401
\]

As can be seen the smallest size of the sample is 2401 people, which is lower than the expected number of responding persons. This implies that the set values of margin of error (2 per cent) and confidence level (95 per cent) will hold.

For the questions with fewer respondents due to the dividing of paths, the following formula calculates the desired number of answers.

\[
\frac{Z^2 \times S \times (1-S)}{M_2^2} = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.05^2} = 384.16
\]

As can be seen 385 responses are needed. This implies that the set values of margin of error (5 per cent) and confidence level (95 per cent) will hold.

**Choice of Structure**

The questions in the survey are developed in collaboration between the author and the marketing department at Paradox Interactive, mainly Daniela Sjunnesson. The survey was focused on customer loyalty and consists of questions of a more general type at the end. It consisted of 13, 28 or 29 questions, based on which answer was chosen during the process. After the loyal part of the survey, question number 1-12, the respondent can choose to either continue with general questions or finish the survey. This choice was implemented to provide the respondent with the possibility to end the survey early, since it can be argued to be rather long in its full length, and was performed to maintain a high quality provided to the customer. In question 19 the respondent should describe its perception of PM, based on which it was either one or two direct follow-up questions. The questions along with the answer are fully presented in Appendix 7.1.2, but as described the 12 first questions handles customer loyalty, including general questions about the customer, the attitude towards a loyalty program and
the attitude to the performed marketing. The following seven is related to further questions about the customer, brand awareness as well as the attitude towards PM.

The question determining the number of questions in the following part is handling the attitude towards personal marketing, which can be ranked from very negative to very positive, on a five level scale with a neutral choice in the middle. A neutral, positive or very positive answer results in two questions related to where PM offers fine to display, while a negative answer to the question results in one question related to what the reason is for the negative perception of PM. The final part consists of seven questions related to data security and personal integrity and privacy. The structure including these main four parts is presented as a flowchart in Figure 3.3, in which the number encased by parenthesis symbolizes the number of questions in that part.

All questions are mandatory, but of varying type, built mainly upon open ended text questions, five-option-questions as well as three-option-questions. The five-option-questions have a neutral option, as well as two options on the positive respectively negative side. The three-option-questions have a neutral option, but only one per side. In addition there are several questions with multiple options where there are no direct scale, but just pure information such as questions about where the person live. All questions in the survey are limited to one answer, disregarding three questions in which the respondent can choose zero or more alternatives, for example handling where personalized marking is should be displayed.
Choice of Questions

Most questions in the survey are close ended, which as described by Collis and Hussey (2009, p. 200-201) is related to a positivistic study, since the respondent cannot choose an own alternative, which may fit the respondent’s mind the best, but has to adapt to the preset alternatives. The authors further describe how these close ended questions are easy to understand, but as mentioned it should be observed that it is crucial to choose correct and relevant answer options. For some of the questions where only one answer is wanted, but the options are not on a scale, an “other” alternative exists, in which the respondent can write an own alternative. In order to get as relevant and correct alternatives as possible, the survey is reviewed by three persons from the marketing department at Paradox Interactive as well as by the author of the thesis.

As described by Collis and Hussey (2009, p. 202-203) the used questions going from for example very negative to very positive is called a scale question, in which every option can be related to a number, for example reaching from one to five, where three is a neutral choice, which is referred to as coding the answers. As described by Krosnick and Fabrigar (1997) the optimal number of answer options is between 5-7, since it provides better insight than just three alternatives, and the human is not able to hold many more than seven alternatives in mind at the same time. Garland (2011) further argues that it is beneficial to provide the respondent with the possibility of being right in the middle, implying that an odd number of answer options is to prefer. This information has been used in this study, and the choice of five alternatives for the scale questions is argued to be most beneficial in this case. The three-option-questions are only used in questions based on “yes” and “no” questions, along with an answer option in the middle.

The questions based entirely on open ended text boxes are used to get broader information about the respondents thought, which are not supposed to be able to codify and analyze statistically. However it might be able to, as described by Collis and Hussey (2009, p., 209), count the number of similar answers and compare the results.

3.3.4. Further Company Investigation

Further information related to Paradox Interactive as well as the market itself is collected internally from the company. This information is mainly based on the result of a previously performed customer survey but also internal data related to sales. The performed customer survey is public data while the internal data partly is confidential. The protection of the confidential data is performed by not providing confidential data in the thesis, only the non-confidential parts.

3.4. Investigation of Role Model Industries

To get an insight into different industries in which PM has been performed with positive results, a benchmark of the chosen industries is performed. The investigation of every single industry is used to generate key findings of how PM within these industries is performed.
beneficially. This investigation is performed to reach sub objective O1, to at first identify relevant industries (Chapter 3.4.1), analyze them as described in Chapter 3.4.2 and find a general PM approach.

3.4.1. Choice of Industries

The choice of industries to investigate is based on published articles within the field of PM, the preliminary investigation at Paradox Interactive described in Chapter 3.3 as well as various sources on the internet. The chosen industries are diverse to get a broad understanding of the identified available approach of performing PM. In total three different industries are chosen, which provides the study with general information related to the actual use of PM. Since the resulting general practice of PM is based on the identified approaches within every single market, the actual choice of specific market is not as important as finding a beneficially approach in every industry.

3.4.2. Execution

The investigation is performed using published data about related companies, as well as published data from the companies itself, such as from their own official websites. No interviews are performed during this investigation. The data is mainly based on published articles related to how PM has been performed in that specific industry, as well as reports from companies which has performed PM internally or for a client. As described by Collis and Hussey (2009, p. 166-169) it is crucial to structure the qualitative data well. Morse (1994) describes how this process can be divided into three separated parts, in which the first one is based on getting knowledge about theory related to the subject. This is followed by synthesizing, where patterns in the identified subjects are categorized and identified. At last the findings are theorized. Based on the earlier found theory, the patterns are combined into new theories or models related to the area.

The literature study described in Chapter 3.5 is in this study representing the first phase described by Moore (1994), while the synthesizing phase is based on this investigation of the role model industries. The actual theorizing of the findings is mainly performed in the discussion and conclusion, Chapter 5 and 6. As described by Collis and Hussey (2009, p. 167) it is favorable to detextualized the findings to provide a structure of the found data. This is presented in a matrix divided by the industries as well as the characterizing factors differing and/or joining them.

3.5. Literature Study

For the author to get an understanding of the area of PM a literature study was performed, focusing on customer loyalty as well as integrity and privacy issues. In order to not get overwhelmed by the large amount of related data, the scope is narrowed down during the process, as suggested by Collis and Hussey (2009, p. 91-105). The authors describe how relevant information among other can be found in books and research articles as well as in various media and governmental statistic reports. These are the main sources used in this literature study, which proceeded during the whole work, but was in the initial phase focused
on building a general basis of knowledge within the theoretical areas mentioned and connected with the stated research questions and objectives. The study is part of the background of the work, as well as a source of theoretical models used to theoretically answer the stated research questions and meets the objectives.

The scope of the literature study is set during a process of an initial investigation of articles and works performed within the field of PM in general as well as in combination with Big Data analysis and the IT sector. The findings are described in the initial part of Chapter 2, which is the basis used for the literature study. The broad field of marketing is narrowed down to the area of PM which includes aspects of customer loyalty, brand awareness as well as trust, focused on personal integrity and privacy. Due to the fact that marketing itself is a large subject based on many new as well as old articles and theories, and e-commerce is a relatively new subject, the literature review scope is not delimited by time. Instead relevant articles from the perspective found while performing the initial research phase is use to thoroughly investigate the areas of PM within the set delimitations. The initial literature study is based on academic articles while the literature study as a whole is based on academic articles, books, consultancy reports as well as online posts.

As described by Collis and Hussey (2009, p. 92-93) it is crucial to use a systematic approach when analyzing literature, which can be performed by defining the scope as well as using specific keywords in the search terms. As further described the choice of scope and places to search for information is depending on the subject, as an example it is stressed that new subjects are rarely discussed in books. In this study the subject of marketing is relatively old and can therefore be found in books, while the subject of PM in combination with the use of Big Data is a new phenomenon most probably found in online articles and online media. This part of the method used in this study is as previously described linked to the first phase recommended by Moore (1994), to get an understanding of the subject. This is mainly linked to the qualitative parts, in the work of analyzing the CGI as well as the role model industries.

The used keywords and the combination of them are depending on where the search is performed, but is based on the following terms:

*Personalized marketing, marketing, Big Data, travel and hospitality industry, CGI, online gambling industry, grocery store industry, direct marketing, loyalty, trust, integrity and privacy.*

### 3.6. Quality of Research

As described by Gibbert et al., (2008, p. 1466) the quality of a research in which case studies are used as the method can be divided into reliability, internal validity, external validity and construct validity. This can be thought of as a framework, seen in Figure 3.4. The framework is based on individual findings by Yin (1994) and Cook and Campbell (1979). These four factors are in combination affecting the quality of the study, and in the presented figure, aspects increasing the general quality, divided into the four areas are presented. The external
validity, also called generalizability, describes how well the findings or results are valid and applicable for other environments than the one studied (Collis and Hussey, 2009, p. 65-66; Gibbert et al., 2008, p. 1468). According to Collis and Hussey (2009, p. 63-65) the reliability describes the accuracy of the measurement, while the validity describes how well the measured behavior or data describes what it is supposed to describe.

![Diagram of validity types]

Figure 3.4: Applied framework for analyzing quality of research. Data from: Gibbert et al., 2008, p. 1467

### 3.6.1. Internal Validity

Internal validity is by Gibbert et al. (2008) described as "causal relationships between variables and results" and often used in empirical case studies where some kind of behavior is tested. This is supported by Bryman and Bell (2010, p. 49) as well, which describes internal validity as if a conclusion based on causal relationship between two variables is correct or not. In such investigation the internal validity describes how well the changed behavior is actually caused by the performed changes. Since this is not the approach used in this work, internal validity is of minor interest. This is supported by Yin (1994, p. 35) who describes that internal validity is only of interest when the study is “trying to determine whether event x led to event y”. This kind of relationships are neither suitable for the CGI investigation nor the investigation of role model industries in the area of PM.

### 3.6.2. Construct Validity

Construct validity measures, as described by Collis and Hussey (2009, p. 65) how well the measured data actually describes what it is expected to describe. Even though the reliability in a specific study is high, approaches with low validity decreases the quality and credibility of the research since the findings does not describe the behavior in the expected area. The quantitative approach used in this research, based on customer surveys aims to increase the construct validity since it will measure the behavior of customers in the CGI, resulting in a broader view of the industry.
The choice of performing a mix of quantitative and qualitative approaches is a common way to achieve higher construct validity, according to Voss et al. (2002). This method is by many formulated as data triangulation, since the findings are triangulated to find the valid results somewhere in the middle of the “triangle” (Collis and Hussey, 2009, p. 85). The quantitative research of customers' perception and behavior supports the qualitative findings from the personal interviews. In this study the triangulated data is mainly based on the relation between computer game companies and their customers, focused on loyalty as well as data security and technology. The performed interviews at Paradox Interactive are one part of this investigation, which is combined with the collected archival data and the performed customer investigation. These three factors make the basis of the data triangulation performed in this study.

The validity is not only affected by low causality, but also by how questions in surveys and interviews are formulated. A bad formulated question may result in findings not describing the expected behavior. The quantitative research is thoroughly examined by several employees at Paradox Interactive as well as by the author before releasing it, this to minimize the risk of bad formulated questions, which otherwise in the long run may lead to low construct validity. Due to this, no structured or closed ended question are used in the interviews, to not lose possible answers outside the scope of answer options. This to strive for high construct validity. The questions in the survey are however mainly closed ended, possibly implying that relevant answers are missed, since the respondent in these cases are not able to provide individual answers.

The investigation of role model industries in the area of PM is not performed using an identical approach to the one used for analyzing the CGI, implying that the construct validity is differing. In the investigation of how PM is favorable implemented, data triangulation is used in this case study as well. As described by Yin (1994, p. 34), construct validity can be achieved by using different sources of information to perform data triangulation. The different data does not have to be collected related to the same specific subject, but can be collected in different industries. In this study the data is gathered from different industries, implying that the information related to PM is based on a broad field of data sources.

Another important aspect of reaching high construct validity is, as described by Yin (1994, p. 34-35), to clearly describe the “chain of evidence”, to describe in detail how the research is performed to let a reader easily reconstruct the study. Chapter 3.3, 3.4 and 3.5 aims to in a systematic and thoroughly way describe how the three main investigation parts within this study is performed, this to provide the reader with details related to how to duplicate the study. As further described by Yin (2003, p. 83), the requested chain should provide a linkage between the performed studies, the objectives and research questions as well as the final results and conclusion. The performed studies are therefore in Chapter 3.3, 3.4 and 3.5 linked to the objectives in Chapter 1.2 as well as to the research questions presented in Chapter 1.3. The results of the performed studies are thoroughly described and presented in chapter 4, summarized and linked to the objectives and research questions in Chapter 5 and finally
concluded in Chapter 6.1. Based on the findings and limitations of the work, recommendations for further research are provided in Chapter 6.2.

Since only a minor part of the collected data, namely parts of the internal documents from Paradox Interactive are confidential, it is possible for the reader to thoroughly analyze all findings and identify the chain of evidence in a majority of all parts of the work. The minor anonymized data is as described in Chapter 3.3.4 not affecting the results in this study and therefore not the validity either. However it should be emphasized that the qualitative parts of the study is harder to replicate with identical findings, based on the nature of qualitative studies, that for example in this case depends on people's’ thoughts and wordings.

### 3.6.3. External Validity

Generalizability, which is also called external validity describes as mentioned how well the finding are applicable to external environments (Bryman and Bell, 2010, p. 49; Collis and Hussey, 2009, p. 65-66; Gibbert et al., 2008, p. 1468). If a specific part of the whole is investigated, the external validity is argued high if the results are valid for the area in total.

In this research the investigated industry is the CGI, which is mainly investigated by performing a study using one specific company in the industry, Paradox Interactive. As described by Yin (1994, p. 35-36) case studies are argued by many to be hard to generalize, since the investigation is focused on one specific company or subject. This is further strengthened by Bryman and Bell (2010, p. 73), which describes how a case study cannot be generalizable, no matter which case is chosen. They further argue that the most important aspect is to always keep in mind that the generalizability of a single case is low. The benchmark of role model industries related to PM is in this study, consisting of several industries, is performed to increase the generalizability of the findings related to how PM is performed in a beneficial way. An example of this delimited generalizability is the performed CLS, which is argued to be generalizable for the performed case, the customers to Paradox Interactive, but not fully for all computer game players in the world.

The investigation of the CGI is in contrast only performed on one company which may decrease the generalizability of the related findings. However the performed investigation is as described in Chapter 3.3 mainly focused on the CGI rather than on how it works at this specific company. This in combination with the data triangulation described in Chapter 3.6.1 is performed to aim for increased generalizability. As previously described Bryman and Bell (2010, p. 73) stresses the importance of keeping in mind that the generalizability is low, which is one of the key factors implying that data triangulation is used. Yin argues that the generalizability of case studies is increased by performing the same study in the area the theories should be generalized to. This is not performed in this study, but is as described in Chapter 6.2 a suggestion for further research.

The quantitative approach, the customer survey is, as part of the data triangulation affecting the generalizability (Bryman and bell, 2010, p. 100). As described by the authors it is important that the sample is representative for the population. As described in Chapter 3.3.3
the sample is large and representative for the population (the customer group of Paradox Interactive). However it should be noted that this sample of the population of all customers in the whole CGI may not be representative, even though it is an enough large sample. This was stressed by Bryman and Bell (2010, p. 129-130) to be an important factor affecting the generalizability.

The fact that Paradox Interactive has customers around the world as well as the fact that they are mainly focused on strategy games is two aspects affecting the generalization of the study. The information from the company is based on this covering the world market of the CGI, but may be biased by the relatively narrow group of customers. This critical fact will be taken in consideration throughout the work, and be suggested as further research in Chapter 6.2.

3.6.4. Reliability

As described by Collis and Hussey (2009, p. 64), reliability describes accuracy and precision of a given measurement. High reliability is achieved if the differences in the result are low when the data processing and gathering is performed the same way as before. In order to achieve this, it is critical to thoroughly describe the used approach and also base the result on data, than if gathered and processed once again gives the same result. High reliability is achieved by describing the performed actions well, as well as by using data and information available for access later on to validate the accuracy of the results. A critical part related to this is that anonymized data and information decreases the reliability, since no external party is able to access it again. (Bryman and Bell, 2010, p. 48; Collis and Hussey, 2009, p. 64)

The quantitative part of this research, based on the customer surveys, aims to increase the reliability by presenting a thorough description of the approach and questions as well as the results. The population, sample and the used approach is described in Chapter 3.3.3, which according to Bryman and Bell (2010, p. 67) are important factors to maintain high reliability. Also the qualitative part of the case study of the CGI is aimed to increase the reliability of the study, this by describing how the investigation mainly based on interviews and data collection is performed. All findings are well documented and linked to sources, making it easy to validate. Even though parts of the internal data from the case company, as described in Chapter 3.3.4, is confidential and cannot be displayed fully in the report makes it easier for a reader to identify and track the chain from findings to results.

The qualitative investigation of the CGI, mainly based on personal interviews at Paradox Interactive as well as company data can be argued to negatively affect the reliability. This since the interviews as described in Chapter 3.3.1 and 3.3.2 is not structured, but unstructured in the preliminary investigation respectively semi structured in the in depth investigation. Due to the lack of structured in the questions, the interviews are harder to duplicate and less likely to receive identical answers. Further on the choice to not use citations in the text may negatively affect the reliability since no authentic data is used. However it is argued that the choice to let every interviewee confirm all data from the interviews in turn may increase the reliability, since the data is confirmed to be authentic to the persons thought.
As Collis and Hussey (2009, p. 64) describes, reliability is not as critical for an interpretivistic study, as it is for a positivistic study. This is mainly because of the fact that an interpretivistic study is based on the point of view that results are not fixed in all environments, making it less necessary to be able to duplicate the study with identical results. Since this study is interpretivistic, the low reliability in parts of the study is aimed to not be devastating for the study as well as be compensated by the more reliable parts.

As described by Yin (2003, p. 105) the presentation of the whole linkage between goals, findings and the results is called “chain of evidence”. A description of such chain aims to provide the reader with thoroughly descriptions of the process, making it possible to duplicate and thereby verify the results. As described in Chapter 3.6.2 the Chapters 3.3, 3.4 and 3.5 aims to thoroughly describe all the performed approaches, how they are linked to the objectives in Chapter 1.2 and the research questions in Chapter 1.3. The results of the performed studies are thoroughly described and presented in Chapter 3, summarized and linked to the objectives and research questions in Chapter 5 and finally concluded in Chapter 6.1.

3.6.5. Summary of Quality Analysis

The internal validity is not specifically influencing the quality of the research, based on the theories related to the type of the study. The internal validity is related to the causal relationships between variables, which is not affecting this work.

The construct validity on the other hand is related to how the findings in general describe what they are perceived to describe and affect. This is in the study aimed to be high by performing several methods covering the same area (data triangulation) as well as by providing the reader with a description of the workflow. This is further strengthened by continuously referring to the problem formulation, research questions as well as the objectives. The choice of not using structured interviews as well as open ended questions is argued to increase construct validity, while the close ended questions may decrease it. The issues related to closed ended questions in the surveys is argued to be partly solved by performing thorough reviews of them before sending them to the respondents. The anonymized data is argued to not be a problem, since the data is thoroughly described and only makes up for a minor part of the data. However it should be emphasized that the construct validity of a mainly qualitative study always is relatively low, since the replication is hard due to the nature of a qualitative approach.

The generalizability, how well the results can be applied to other similar companies or industries, is negatively affected by the fact that a case study is used. This since, as argued in presented theories, they can never describe the whole environment. However it is argued that the use of several industries in the role model investigation may increase the generalizability. Also the fact that the computer game case company has customers worldwide is argued to partly increase the generalizability, since it covers customers from more than just one country. The generalizability is argued to be increased by using a same large enough for the
population, in this case all customers to the case company. However it should as mentioned be taken into consideration that these customers may not be a valid sample of all computer game customers.

The reliability, how well the same results should be received if the workflow is duplicated is argued to be increased by the fact that a majority of all used data is not anonymized and all sources are provided. It is further argued to be positive that the large number of respondents in the surveys is statistically significant, due to the larger number of responses. This also holds for the interview part, in which all, by the company recommended people, are interviewed. The reliability is also in general argued to be increased by describing the previously mentioned workflow in detail, and by document and present all results. The not structured parts of the interviews are argued to decrease the reliability, since it is hard to get comparable answers, but this is partly solved by using semi structured interviews where an interview guide is used and provided to the reader.

In summary, as seen in Figure 3.4 showing the model by Gibbert et al. (2008), the quality of the study is argued to be high, for being a qualitative study. The parts related to the choice of a qualitative method that decreases the quality, is argued to be improved by multiple cases, clear workflow description as well as clear and non-anonymized or hidden data.
4. Empirical Data Result and Analysis

This chapter presents the results of the empirical study performed during the work. The results will be linked to the structure of the objectives and research questions for this study.

As described in Chapter 1.2 sub objective O1 is addressed by finding and analyzing industries in which PM has been successfully implemented. This data is presented beneath in Chapter 4.1. This is followed, in Chapter 4.2, by the work of fulfilling sub objective O2, the analysis of the CGI focused on customers' privacy and integrity. Based on these findings the differences between the investigated industries and the CGI will be presented, which will answer the first research question, RQ1, and therefore address sub objective O3. Based on these findings the second research question, RQ2, will be answered in Chapter 5.2, which will lead to the addressing of sub objective O4 and in turn to the addressing of the main objective, presented in Chapter 5.3.

4.1. Analysis of Role Model Industries

The three chosen industries for the role model investigation are the travel and hospitality industry, the online gambling industry as well as the grocery store industry. For every specific industry, relevant factors will be investigated and exemplified by relevant minor cases such as specific companies and what they have achieved. The study will further make up the basis of the identified approach related to the implementation of PM. This chapter aims to address sub objective O1, by analyzing the role model industries and identify the general PM approach.

4.1.1. Travel and Hospitality Industry

The travel and hospitality industry is characterized by a lot of knowledge among the customers, which want even more knowledge and often like to plan a lot (O'Flanagan, 2014, p. 4). From a travel company’s perspective, this implies that it is beneficial to provide the customers with individual information using which they can plan a trip. This personalization of knowledge and information can be created by using personal collected data, Big Data. As described by O’Flanagan (2014, p. 8-9) one major aspect to keep in mind when performing marketing is to limit the amount of offers, but those left should be relevant for the customer, which increases the likelihood for a purchase. It is further described that this approach is used by the online store of Amazon, which on every visit shows product offers based on the previous purchase. O’Flanagan further describes that the use of PM may reduce marketing costs in media by 21 per cent by reaching the right people with relevant offers as well as an increase of cross-selling possibilities by 17 per cent, is possible. O’Flanagan further describes how the collected Big Data cannot just be used for attracting customers to one specific product, but to perform analytical work as well as developing newsletters and other front-facing display materials.
An important factor to keep in mind while trying to implement PM is the need for much personal data, which may be collected from different sources (*Personalized marketing and web analytics*, 2012, p. 8). As further described by the authors, this can be thought of as moving from multi-channel marketing to cross channel marketing. In the multi-channel marketing data is collected from different sources, such as the website and email communication and later on stored separately, while the cross channel approach implies that all the data is stored together, making it easier to merge it and get relevant and more detailed data. Companies in the industry are constantly moving towards using a more flexible pool of data, for increased knowledge about the customers. One of the largest companies in the industry, Travelplanet24/Tripsta, started a collaboration with Boxer to increase this possibility of using several data sources and to analyze it (Barr, 2015).

Related to marketing in general, it is critical to monitor how well the campaigns and offers are working, if they really are increasing the profits (O'Flanagan, 2014, p. 21; *Personalized marketing and web analytics*, 2012, p. 10). As described by Firdausy (2012, p. 109), the customers seem very interested in a website with customized travel material, 78 per cent of the customer responding in the survey was positive to the personalized model. The results of the work also verifies that PM may increase the customer loyalty, as identified by Anderson and Selö (2012, p.2).

In the traveling and hospitality industry it is common to put much resource into branding, this since it is argued that high brand awareness increases the retention rate (*TripAdvisor tops*, 2014). The brand awareness differs a lot, but for the most used and trusted travel and hospitality companies the brand awareness is up to 88 per cent.

Wham (2013) argues that companies within the travel and hospitality industry are insufficient to create customer loyalty. The companies have been working hard with loyalty program, but he still argues that they just “created repeat purchase, not true loyalty”. He also stresses the importance of determine places for improvement to fulfill the demands and needs of the customers. According to Wham the loyalty may also be increased by collecting a lot of customer data, based on which relevant data can be presented to the customer at the right time. Further on it is crucial to inform the customers of unexpected changes to keep them loyal to the company. At last he stresses the importance of good service and support during the whole process. Romero (2012) stresses the importance of listening to the customers, when using loyalty programs not overwhelm them with spam emails and low value offers. He further describes how loyalty programs in this industry are costly, up to 5 per cent of the revenue is used, but still it is important to maintain the loyal and most valuable customers. Simmons (2014) describes how up to 50 per cent of the revenue from travel companies are driven by loyalty programs.

The importance of collecting a lot of customer data for meeting the customers’ expectations of relevant information is supported by Simpson ([no date]), the founder of a customer experience optimization company. He emphasizes that companies in the travel and hospitality industry collects a lot of useful data using from for example loyalty programs which is stored
as CRM data, but that the data is not efficiently used for improving the customer experience. He stresses that the data can be used for much more than it is used for today, such as: “more precise targeting, predictive personalization and consumer connections across all media channels, and delivered at the time most appropriate to increasing conversion”. This can according to Simpson increase retention and loyalty as well as the general lifetime value of a customer, this based on the findings that organizations that have implemented predictive solutions have multiplied their conversions. Simmons (2014) argues that the travel industry uses a lot of data to deliver useful and beneficial offers to their customers. The use of data and information for customizing the prices in almost real time are as described by Simmons called “revenue management”. He further describes how some companies even delivers specific price offers to specific customers, all this to maximize the revenue. Based on a performed investigation, Simmons further emphasizes that customers' demand to know if they have got the lowest price, which is related to the offered simplicity of comparing prices.

Personalization and knowledge about the customers can be used for providing the customers with merchandise (Thinking like a retailer - Airline merchandising, 2014, p. 9). As described by the authors personalization for merchandise is already in use in the travel industry, but can be dramatically improved if more personal data is used. It is argued that the most important aspect in this work in the industry is to inform the customer about which data that is used, since the customer already has indicated that they want more personalization, which is supported by Simpson ([no date]). The approach of using personalized merchandise packages has been shown to increase the value of the product basket with 30 to 35 euro in average per customer. In the travel industry it has been shown that customers' demand clear information about the actual value of a bundle pack, and information about how it differs from other packages (Thinking like a retailer - Airline merchandising, 2014, p. 9). In relation to loyalty and satisfaction it has been shown that it is important to offer concrete value to the customer, in order for them to not feel exploited (Thinking like a retailer - Airline merchandising, 2014, p. 6).

4.1.2. Online Gambling Industry

The general PM approach used for retail and travelling have much in common, while it for online gambling differs in a few aspects (Tips to personalize a gambling website, 2013). As further described, most gambling websites are focused on the registered members, to whom the personalization is targeted. The authors argues for that also the non-registered customers should be taken in consideration, by for example remembering and presenting games they played last time they visited. As for the travel industry they also argue for using PM related to cross selling. However it should be observed that customers are often unwilling to interact with offers focused on products they do not know.

In order to make them interested in other games, the company should involve an opening to the new game, within the one the like the most. At last it is argued that all the personal data used for personalization should be used for relevant information as well, not just for marketing, but for a genuine and good purpose, such as help to balance a gambling addiction (Tips to personalize a gambling website, 2013). The focus on non-registered customers are
strengthened by the authors of *Money on the table* (2013) as well, which recommends gambling companies to use browser history, online as well as offline data to be able to personalize a customer’s first impression of the site as well. Also the previously mentioned recommendation of using personal data for more than marketing is supported by these authors, which argues that it should be used to determine experience level, so a new customer does not be discouraged by meeting too good players in the first rounds.

As described, the cross marketing within the online gambling industry is related to one specific product, and the people are aware of the brand of the website itself and does not be affected by specific product brands. The brand awareness of the different companies is however high as well, and as described by LaSala (2014) related to the high use of “TV advertising”, which drives a lot of traffic to their websites but is not very personalized and therefore also expensive.

As described by Griffiths (2013) the most important factor affecting customers’ choice of a specific online gambling company is trust and the feeling of security, this ahead of recommendations from friends, forums and magazines as well as online adverts. The feeling is as argued by the author related to the unwillingness of risking personal data to be spread. Related to personalization is the large amount of data needed. As argued by the author it may be hard to know how to use all the data, since it may be overwhelming. In order to make it efficient, it is crucial to extract relevant information.

A few years ago, online gambling companies could base their recommendations and style on which games people previously played, while it nowadays because of all competitors is crucial to take several steps further (*Money on the table*, 2013). The personalization has according to the authors to be much more sophisticated to keep customers. The authors argues for analysis of search terms, web history as well as “many other data points”, all this to create a full profile of the customer.

As described by Haried (2014, p. 363) the customer loyalty related to online gambling is not fully clear. As further described by the author (ibid, p. 368), the general theory of how important loyalty is for e-commerce in general, should be reviewed with online gambling in mind. This is related to “problem gamblers”, from which the return of a loyalty programs is low. However LaSala (2014) describes how the loyalty in the online gambling industry is relative high, that the customer in average uses three different websites in parallel. The author further argues that the marketers in the industry keeps trying to increase brand loyalty, mainly because it is more efficient than to acquire new customers. As described by Griffiths (2012) the online gambling industry is known for being related to criminal scams. Many of these scams are in turn related to merchandise, based on for example bundle packs of bonuses.

### 4.1.3. Grocery Store Industry

In Sweden the two large grocery store companies ICA and Coop are using PM, but at the moment in a slightly different way (Andersson and Selö, 2012; Jireskog and Larsson, 2011).
ICA is creating a thoroughly CRM database, based on which individual personalized offers can be sent out to the customers. Coop is segmenting the customers into different groups, implying that no offers are individually customized, but customized for a group of people. Even though ICA is tracking the individuals, it has been shown that they process the results on group level, indicating that some useful data might get lost, which by Andersson and Selö (2012, p. 43) is described as a problem that has to be solved to get personalized information. They further argue that the well performed personalization used by ICA is related to their good CRM database. This is partly differing from what Reinartz et al. (2004, p. 293) argues, who describes how CRM systems often generates losses for the company. Andersson and Selö (2012, p. 43) argues that a less developed CRM system might decrease the risk of intruding on customers' integrity and privacy, but instead might generate irrelevant offers which are not satisfying. The approach used by Coop, to segment the customers into only seven groups, has instead been argued to be risky, since people might get irrelevant marketing offers which in turn decreases satisfaction and loyalty (ibid, p. 40-41).

High customer loyalty for a grocery store implies that the customers are not spreading the purchases to many different stores, but are focusing them to the specific company. Research has shown that companies using PM are increasing the customer loyalty, implying that the interest for PM is continuously increasing (Andersson and Selö, 2012, p. 2).

One of the largest retailers in the world, the multinational company Tesco, started already in 1995 with PM, based on a customer loyalty program (Tesco: Every Little Bit, 2013). This, as mentioned in Chapter 2.2, is a beneficial way of getting valuable data about the customers, not just used for providing them with discounts. One of the findings during the process was that: “We also realized that customers actually like to belong to things, they like to be recognized, they like to be valued, and they're very responsive. They want to be involved in a relationship or give information or give feedback.”. Based on the data they started to gather, they could later on start an online shop as well. As described by McElhatton (2002) Tesco realized that all data they could gather about the customer thanks to the collaboration and later on partly take-over of the data analysis company dunnhumby, was too overwhelming to be able to analyze using traditional methods. In order to solve this they started to analyze the data by hand to find similarities and patterns, which could be used for categorizing customers and the behavior for further automatic analysis.

As further described the grocery store products also could be classified based on the found dimension, describing how well they matched for example a low calorie diet lifestyle. Based on the manually found dimensions, dunnhumby could continue to broaden the area of related products, based on further gathered data. However it should be noticed that the process had to be stopped on a well-chosen spot to not go too broad. Based on the analysis Tesco could perform PM, but it should be noted that one critical problem is to keep a good balance between thanking the customer for the purchase and at the same time try to affect their future behavior.
Another finding Tesco did during their adoption to PM was that customers in general should not be persuading customers to buy other products, but “reward and reinforce what they're already doing”. This is by the authors related to providing customers with relevant information and keeping them satisfied, which is not the most common approach in the market. Further on the authors describes how Tesco during this transformation realized the differences between pure e-commerce companies which just are online, and other companies which are both online and offline, so called multi-channel marketing. E-commerce companies has the advantage related to previous knowledge of data gathering and search data, but using the modern platforms, a multi-channel marketing strategy is relatively easy to adapt to for offline retailer nowadays. The e-commerce companies may on the other hand get serious problem of visibility, since they are entirely online, based on which the authors recommends them to adopt a multi-channel strategy. This to become more visible as well as increase the personality and convenience offered to the customers. The authors has identified tendencies of increased acceptance level of privacy intrusion and data gathering amongst customers while interacting with e-commerce companies in contrast to other business. However the authors stress that the trend in changing and customers dramatically will increase their demand for service and transparency related to use of personal data.

Highley et al. (2015, p. 10) describes that the online shoppers in the grocery store industry are very likely to buy products they have bought before, and relatively unaffected by specific promotions. 53 per cent of the purchases in the study were performed based on favorite products, while just 6 per cent were related to specific offers. Online search for products resulted in 31 per cent of the purchases. The authors (ibid, p. 11-13) further describes that the individual categories of the products are affecting these numbers.

As described by Clark and Clark (2012, p. 18-19) an often beneficial approached used in relation to the loyalty program is to create coalitions with partners to amongst other offer good rewards for the customer and get new communication channels. Maione (2014) argues for a “gamified” loyalty program in the grocery store industry for increased satisfaction and loyalty, which is created by involving competitional parts in the program, such as event where prizes can be won. Related to the use of personalization of the marketing and loyalty programs is the actual interaction with the customers. As described by Maione (2014) people in this industry demand a personal and human tone in the interaction to get a real feeling of brand loyalty. As further described by Maione the contact information stored in the personalization process can be used to, by for example email, ask what can be changed for the customer to be more satisfied by the store, and later on publish the results. This will argued by the author make the customers feel more specialized. Also personalized offers in general will increase this feeling of personal contact.

As described by Ingram ([no date]), brand awareness within the grocery store industry is related to the specific products sold in the stores. It is common that stores sell similar products with different brands, where for example the cheaper one can be branded by the store itself while the other one is a more luxurious brand. Even though the customer recognizes the brand of the cheaper product, the more expensive product is often bought just
because of a brand more easily related to good quality. Jireskog and Larsson (2011, p. 17-18) further describes how PM can be used to increase the brand awareness for a specific product.

As described by Mills ([no date]) cross marketing and cross selling in the grocery store industry is argued to be efficient. This kind of product information is related to how specific products are encouraged to be bought by using an existing interest for another product as an opening. The encouraging techniques can involve placing relevant products near to each other or to supply the customer with recipes in which featured products are involved. The cross functions are according to Wickford ([no date]) related to merchandise in the grocery store industry, since it is mainly built up of smart placement of products, rather than selling specific bundle packs.

4.1.4. Identified Patterns in the Industries

Based on the investigation of the three role model industries, some mutual factors were identified, based on which patterns could be seen. In Table 4.1 this is described in a detextualized table with the factors and every investigated industry. The detextualized results makes up for the main results used for addressing sub objective O1.

<table>
<thead>
<tr>
<th>Cross Function</th>
<th>Travel and Hospitality</th>
<th>Online Gambling</th>
<th>Grocery Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Possible to cross market and cross sell for example hotel nights when a flight is booked. Due to relatively high brand awareness people perceive it as safe.</td>
<td>Possible to cross market other games, preferable by making an introduction in a favorite game. Since all games are on the same website, brand awareness should not negatively affect it.</td>
<td>Possible to cross sell products by placing them at a tactical place or by cross market them by creating and spread recipes including specific products.</td>
</tr>
<tr>
<td>Customer Loyalty</td>
<td>Much resource is used for loyalty and is necessary for keeping the best customers. People seem more satisfied and loyal if they get relevant offers with high values, not overwhelming, which may be the case since all companies uses loyalty program with a lot of offers included.</td>
<td>Desirable, but may be lacking of efficiency due to “problem gamblers”. It is relatively high, and companies try to increase since it is more efficient then to get new customers.</td>
<td>Very important since it implies that the majority of a customer’s purchases is focused to the company. It can be increased by making the interaction with the customers human and personal.</td>
</tr>
</tbody>
</table>
Brand Awareness
The brand awareness is high, especially for the largest actors in the market. Much resource are used, as for the loyalty, since it is shown that high brand awareness effectively increases the retention rate.

Specific products have high brand awareness because they are one the same website. The general brand awareness is high as well, which is desired for attracting customers to the specific website amongst all competitors.

Related to specific products. More expensive, but besides from that identical products can be sold because the brand awareness is higher.

Working Area
Mainly online nowadays, which is crucial since it implies that customers can gather a lot of information by them self, which has been shown to be demanded.

Only online.

Mainly offline, but it is going towards more and more online activities.

Merchandising
Heavily used during the whole customer journey. Consists of bundle packages and other extra value.

Not used much, mainly based on starting bonus packages.

Strongly related to cross functions, making the customers buy other products related to another, by placing them smart.

| Table 4.1: Detextualized table of identified patterns and factors in the investigated role model industries |

4.2. Analysis of Computer Game Industry

The previous Chapter, 4.1, aimed to address sub objective O1 while sub objective O2 is sought to be addressed by, in this chapter, analyze the CGI. The CGI is as mentioned a part of the broader video game industry. The whole game industry is increasing its revenue, and it is estimated to continue with that progression (Global Games Investment Review 2015, 2015).

As further seen the CGI constitutes to a relatively small part of the whole revenue, but as described by Blau et al. (2013) the CGI is growing in approximately the same magnitude as the total. Electronic Arts, one of the largest computer game publishing companies in the world according to Martin (2013), has continuously increased their revenue of digital products which during the few past years has passed the revenue from packaged goods and other net revenue, as can be seen in Figure 4.1.
The CGI can be divided into studios, publishers, distributors and developers (Amanat Bari, 2015). The publisher may sell games by their own (1), or letting distributors (2) or larger publishers distribute (3) the games to the customers. The publisher may create the games by them self, using an internal studio (B), or using external developers (A). This process is illustrated in Figure 4.2.

The dominating online distributor, in 2013 holding 75 per cent of the online selling market of computer games, is Steam, created by Valve Corporation (Edwards, 2013). As described by Senior (2013), they are taking approximately 30 per cent commission from every sold article in their own store. Steam is a distributor but the Valve Corporation does also act as a publisher. Steam reached out to more than 25 million people using their services, which are free to use and includes several administrational benefits for the game developer (Business, [no date]; Welcome to Steamworks, [no date]). The income source of Steam is as mentioned their commission. As described by Protalinski (2012) Steam started in 2012 to analyze customers’ wish lists to use it for PM. The wish list was initially used to pinpoint interesting games to remember them in the future. This feature is by default switched on, but can by the customer be switched off. Steam is truly in the forefront of marketing in the CGI which is supported by Wong (2015) who also describes how people are encouraged to interact with each other using the friend list and forum as well as to sell products designed by them self in the Steam shop for particular games.

As described by Tronde (2015), there is however several benefits related to the use of an external distribution system such as Steam. Tronde describes how the transformation in the whole market, from developers distributing their own games using their own systems to a more general and overall covering system was criticized by several customers, but beneficial for the developers. According to Tronde a major source of the customer complaints were connected to the use of a specific external system, in this case Steam. However Tronde describes the huge benefits related to Steam, which is especially clear in the multiplayer
game sphere. Since large parts of the communication and multiplayer system are hosted by Steam, it is a large decrease of workload and complexity for the computer game developers.

4.2.1. Interviews

Mainly based on the in depth interviews, but also the preliminary interviews, the findings is divided into areas and linked to the investigated literature. A table of some of the interview subjects is presented in Appendix 7.3.

Customers’ Awareness

Sjögren (2015c) describes the customer within the CGI as relatively unaware of brands. In just a few cases it has been shown that customers is searching for a specific product based on the developer, which Sjögren related to how aware people are of the brands. Sjögren also describes how the value chain in the CGI can be thought of as in terms of the movie industry, and based on this a possible explanation of the unawareness can be explained. The work of increasing the brand awareness is ongoing by working with corporate branding (Wall, 2015) as well as with the general and fully covering “Paradox Account” (Blomberg, 2015).

Sjögren describes how the CGI publisher can be thought of as the film producer, while the developer or studio can be thought of as the director of a movie. His opinion is that few people choses a movie based on which company has produced it, but may chose it based on the director. However Sjögren stresses that the awareness of computer game developers is not high, with Obsidian as an exception, which is one of the recent partners to Paradox Interactive (Grayson, 2014). Sjögren also stresses that the only publisher on the market with high brand awareness is Electronic Arts. Further on Sjögren states that customers instead are more aware about the hardware, such as the gaming consoles. Blomberg (2015) further argues that even Blizzard has high brand awareness, which can be linked to the fact that they have an own portal where they sell their games, called “battle.net”. He also describes that customers are not aware of the differences between published game titles and actually created ones. Even though for example the new game “Cities: Skylines” is only published by Paradox Interactive and actually developed by “Colossal Order”, it is likely that many loyal Paradox Interactive customers buys it since they think that it was created by Paradox Interactive.
According to Sjunnesson (2015a) the CGI customers are a relatively loyal customer group, which is especially visible with the customers to Paradox Interactive. This is supported by Blomberg (2015) and Erlingsson (2015). Westman (2015) argues that most players has high brand awareness, especially the real “hard core” gamers, which is supported by Lagergren (2015) who describes how the learning curve is very steep which implies that most customers to Paradox Interactive actually can be classified as “hard core” gamers. Wall (2015) describes how a lot of effort nowadays is put into increasing brand value.

Products and Merchandise

Sjögren (2015c) describes that the CGI are offering relatively few product choices to the customer. In a majority of all cases the offered games are based on one single product, with no possibility of choice. Sjögren explains that packages of several games and expansion packs have been offered earlier, but the possible options have always been absent or very low. Sjögren explains that Paradox Interactive recently is moving towards offering more choices, by creating different packages. Related to how many choices of products the customer has, is how cross selling and cross marketing can be performed. Sjögren explains that cross marketing, within the games has been used for a while in the industry, but relatively rarely. As described by Sjögren (2015b) a coming trend is to be able to sell other products directly to the customer, within the games, as cross selling.

Related to the choice of products is the product itself, which according to Lagergren (2015) has a too low price, in relation to what is offered and how much resources are used to create it. He describes how the price of a normal computer game in Sweden has had approximately the same price the past 20 years, this even though the production costs has increased dramatically and the offered game experience is much higher. The increased production cost is much related to the more complex content of the game as well as the much higher demand for marketing since the market is crowded and it is necessary to be seen by the customers.

According to Lagergren, one of the only factors making the business profitable today is the possibility to reach a lot of customers using internet, since an increased price of the product has been shown to upset the customers, this since they for a long time have been used to the relatively low price for many hours of entertainment. Lagergren describes how increased use of DLC sales can decrease the low profitability, but as Blomberg (2015) describes people are already complaining about the massive use of DLC, they argue that the full game content should be included in the main price, and if released as DLC it should be free. Blomberg further describes how the truly loyal customers seem to buy many DLC based on their loyalty rather on the actual demand for the content. He further describes how a distinct low price of the base product may increase the willingness to buy DLC content. For example the newly released game “Cities: Skylines” has been highlighted for the low price, which Blomberg thinks is a good long term strategy, instead of using high prices of the base product which may decrease the DLC sales. Some DLC can be seen as merchandise, among other such as t-shirts, coffee mugs, robes, game music and posters (Sjögren, 2014).
As described by Erlingsson (2015) the famous computer game EVE Online got in a serious crisis by trying to sell overpriced merchandise. The problem was further described by Drain (2011) who explains how merchandise within the game, with only visual purpose, no real benefit, was sold for high prices. He explains that the problem was not directly related to the high price, which many companies uses for making an article exclusive, but because all products got these high prices. The tactic of setting a high initial price is clever, since more people have been shown to be willing to pay 50 per cent of the price, rather than 100 per cent of a higher price. This small action was shown to lower the trust and loyalty for the company dramatically.

Customer Interaction

The interaction with the customers in the CGI is linked to the interaction among the customers, and is based on several parts. At first one important channel is the forums, which related to Paradox Interactive is located on their own website, their games websites as well as on the website of Steam, one of their portals used for publishing (Blomberg, 2015). Blomberg further describes how the interaction on the forums is not directly related to how much people play the games, some people are very active on the forums but does not play the games equally much, and vice versa.

The interaction with the customers has been shown to affect the loyalty, based on which Paradox Interactive at this very moment will start a two way conversation with the customers to games created by Paradox Studio (Blomberg, 2015). Paradox will request information about which problems in the games the player perceive as most critical, and in return Paradox will provide the customers with real time information about which parts the studio is currently working with. These actions strive to increase the loyalty and satisfaction further. As described by Lagergren (2015) the customer loyalty for Paradox Interactive is high, which also in turn is related to that customers always demand high quality delivered. Besides from interaction with customers using forums, the communication is performed at game websites, social media, and email as well as at physical events and meetings (Sjunnesson, 2015a).

As identified in the CLS only 12 per cent are positive towards PM on during their time on the Facebook website, which was much lower than the acceptance for PM in for example an in-game shop and on forums. Hargelid (2015b) emphasizes that such behavior may be related to the relevance as well as the advertise layout. Even though marketing is relevant, which according to several previous studies makes customers more positive towards it, as described in Chapter 2.6.1, it may be perceived as negative if it is too obvious that it is based on stored information. As argued by Hargelid, layout based on directed marketing, including for example the customer’s name in the text may be perceived as more intrusive than just an advert showing a product.

Privacy and Integrity

The customers within the CGI are aware of computer security, which makes them impacted by how privacy and integrity is handled (Sjunnesson, 2015a). Sjunnesson further describes that this behavior may be influenced by how much they are interacting with the internet.
Computer gamers are forced to interact and use internet in a less restricted way than the console players. One example of this increased awareness of integrity and privacy is their relatively high use of so called “ad-blockers”, software removing advertisements during their time online. Sjunnesson further describes this customer group as conservative in general. Their increased awareness of privacy and integrity related to computer security is according to Sjunneson related to their high knowledge in the field. She also stresses that this behavior implies that relatively many customers are deliberative related to creation of personal accounts and share personal data.

The fact that the customers are conservative is supported by Blomberg (2015), who further describes that things seem to be more accepted after a while. An example of this is the previous opposition to the use of tracking cookies on websites. Before it became regulated by law that information about it should be explicit, people were critical, but as soon as people noticed that they were used all over internet the hysteria decreased (Blomberg, 2015). The customers also seem to have more technology knowledge than the average person, as argued by Wall (2015). He further describes how use of tracking data on the website immediately led to a protest thread about it in the forum, which indicates how fast this use of new technology was discovered.

The high knowledge of technology amongst the customers is strengthened by Erlingsson (2015), who however further thinks that customers are not positively affected by more and clearer information about used data security techniques. This since they are aware of that even companies using what seem to be fully secure solutions, may lose data. This is further supported by Andersson (2015), who argues that those customers that do not appreciate customized marketing are not affected by data security related issues, but by the monitoring itself. This may be related to the fact that people nowadays are aware of that companies such as Google, which already has enormous knowledge about people on the internet. Also Westman (2015) argues that the unwillingness to be monitored by companies does not seem to be related to data security, but to the bad feeling of being controlled. He also stresses that the need for explicitly describe data security techniques and security certificates are unnecessary, since they know enough about security and the drawbacks of respectively. They know that data is not safe even though good approaches are used. Wall (2015) supports the fact that many customers has high technology knowledge, and emphasizes the importance of keeping the level of data security high. He describes how for example some content on the website was not showed using a secure connection (TLS) during a short period of time, which almost immediately led to that a forum post related to the security issue was started. He stresses that this is just an example of the high knowledge and interest the customer have.

Besides from the marketing related issues in the area of privacy and integrity, as described by Blomberg (2015) the protection of the products is important and affects customers' perception of the company. Many companies uses “DRM protection” to manage the protection of the digital products, which in many cases makes the process of using the product more complicated, and may delimit fully legal actions. Blomberg describes how Paradox Interactive does not use any kind of DRM, this to meet the demand of high quality from the
customers, and by so strive for increasing customer satisfaction further. The DRM is related to privacy and integrity and has during several occasions been criticized (Blomberg, 2015). As described by Pearson (2012) and Kingsley-Hughes (2012) the DRM protection used by Ubisoft in their game portal called “Uplay” could imply that doors opens for malicious websites, which in turn can affects customers’ privacy and integrity in a negative way. Kingsley-Hughes stresses that it can be thought of as a “rootkit”, which as described by the author is software that hides the actual behavior from other software, making it hard to detect and letting it get direct access to the core of the system.

Rootkits threatens the first important aspect of secure data transmission, that data should only be sent when the sender intend to. As described by Sjögren (2015d), the DRM protection used in the industry, related to use of game portals such as Steam, seem to be confusing for the customers. DRM was from the beginning a technique for preventing illegal copying of the software, but is as described above perceived as the software used as game portals. Sjögren further describes how DRM can be shut off in for example Steam, which makes steam just a deliverer of social and communicational tools, but still are it in many eyes seen as irritating DRM software. He further describe how DRM today at for example Paradox Interactive describes much more than just copy protection, such as the possibility of storing current game data online, in the cloud, making it possible to access from any computer just by using the personal game account. These are all features providing the customers with additional value, which many of them does not seem to understand.

Also the computer game company Electronic Arts has a game portal called “Origin”, as described by Sasaki (2013) was released in 2011 to not be forced to use the third party game portal Steam. Since Steam already existed, Electronic Arts chose to force their customers to use Origin for their games, otherwise they were not playable, which argued by Sasaki was their only choice since they could not deliver any extra value than Steam did not have. However this forced use of another game portal was not positively perceived by the customer, which by the authors could be seen as moving the real Electronic Arts fans to normal customers, instead of as Valve did with Steam, moving customers to loyal fans by offer additional value. Sjögren (2015d) describes how this was a bad choice made by EA, but emphasizes that the real problem was because of the choice to abandon Steam totally, instead of offering it as an additional portal. By forcing customers to use an external game portal more useful data can be gathered, which hopefully does not bother the customers as long as the signup and login process is simple and fast (Sjögren, 2015d).

As described in the interview with Blomberg (2015), customers are aware of the value of email addresses, which can be sold to companies for spamming and are therefore not visible on websites. He describes how people objected to the change from using a nickname to email address as login name. This even though the email address always have been stored by the company. Paradox Interactive describes in their privacy policy that the addresses will not be spread, this in order to make the customers feel safe. This is however a relatively complex contract, which is probably not red by all users.
Ethical issues are related to privacy and integrity, and as described by Hargelid (2015a) Paradox Interactive always strives for clear and open information to stay true to what we perceive as ethical values, and to avoid ethical issues to begin with. He further exemplifies the importance of helping the customer to understand which information they provide the company with and how it is used. He emphasizes that it is not perceived as ethical just because the information exists, since for example the information can be complex and hard to read, which in turn may imply that the customer allows that kind of use automatically. Hargelid describes how Facebook is clear with all used data and information, but that most customers does not read but, but instead just clicks away the information boxes since they want the actual content. In summary he emphasizes that Paradox Interactive wants high transparency and being ethical, but not on a false basis. The importance of simple and informative privacy policies are strengthened by Wall (2015), who argues that many customers are interested in this kind of information.

Technical Solutions

As described by Hargelid (2015a) the Big Data Paradox Interactive store about the customers can be divided into three main categories: “user data”, “account data” and “telemetric data”. The user data contains the most sensitive data, such as name and age. What should be observed is that no payment information is directly stored, since a third party payment company is used (Westman, 2015). As described by Hargelid the account data contains data about the game account, such as what they own in the game and what their level or rank is. The telemetric data contains everything else, such as information about the customers used hardware, how they play and where they play. This is not stored together with individually identifiable data.

As described by Westman (2015) it is not uncommon in the CGI that much or all of this data is stored unencrypted, which however is argued to be safe since secured authentication techniques are used. Westman explains that encryption of the data should be unnecessary, since the authentication techniques are that safe, that if someone manages to break it the decryption of encrypted data is relatively simple to break in comparison. All the data during transmission from and to Paradox Interactive is encrypted using TLS, implying that it is not readable for a third party (Westman, 2015). The data is as described by Erlingsson (2015) stored separately in accordance with the laws, but can be merged by combining the databases. All data is stored using a large third party storage provider, implying that physical security is handled by them which in turn is argued to be safe. Related to security and authentication it has been identified that Paradox Interactive does not use complex rules for their customers’ passwords. As stated by Brolin and Karlsson (2015, p. 14), the rule of minimum six characters is not enough.

As identified in the literature study the perception of encryption and the necessity of it are differing. Even though it may be possible to use fully secure encryption techniques for storage of all data, it is for some of the data too slow since the data has to be decrypted all the time, and fully secure data takes long time to decrypt. Based on this Hargelid (2015b) argues
that some content cannot be beneficially encrypted, and instead it is secured by other strong access control security techniques.

As described by Hargelid (2015a), an often highlighted occurrence related to customer integrity and privacy, technical solutions and the CGI was the big leak of Sony Entertainment in 2011. As described by (Takahashi, 2011) approximately 77 million customers to the Sony PlayStation Network got their data stolen, which affected the customers’ trust in a negative way. Sony presented information about the attack, and described how all personal data except for the credit card information was not encrypted (Seybold, 2011). Seybold further recommended the customers that possibly got their encrypted credit card to get a new one, which can be thought of as related to what Westman (2015) described, that encryption is not sufficient and can be broken. Westman argues that even though the encryption techniques are theoretically safe, which they can be with sufficient length of the key, it can be broken by analyzing the encryption algorithm itself. This implies that encryption should be perceived as bought time, rather than perfectly safe.

### 4.2.2. General Customer Survey

In 2014 Paradox Interactive performed a user experience survey which was posted on various social media channels such as Facebook as well as internet forums related to Paradox Interactive. Until a limit of 700 people had answered, the respondents were rewarded with a free computer game for answering the survey. The survey was developed using the survey tool surveymonkey and was active for ten days, which resulted in 7938 answers. The total results of the survey along with the questions and answer options are presented in Appendix 7.1.1. Based on the high number of responses, the result are representative for the whole population of customers to Paradox Interactive.

At first, the results shows that 80 per cent of the customers are in the age span of 16 to 35 years old, 97 per cent men and almost 90 per cent of them are living in Europe or Northern America. Further on the results shows that not even half of the customers bought their first game from the company during the two last year. This shows that a large group of the customers are loyal to the company and has owned a Paradox Interactive game for a long time.

Based on the answers of questions related to how satisfied customers are with Paradox Interactive and its games, it is reasonable to argue that the high and long term loyalty are related to the positive answers related to the company and the products. More than 80 per cent of the customers are very satisfied (the best option) with the company's games and 85 per cent of them are happy or very happy with the company as a whole. Further interesting is the fact that almost 90 per cent of all the customers are buying their games using Steam, which is close to the market share Steam has on the online market in general. Even though Steam has a majority of the sales, only 6 per cent of the information about the games is found on Steam related sites, while 23 per cent is gathered on Paradox Interactive related sites.
4.2.3. Customer Loyalty Survey

The questions along with the answers are as previously mentioned fully presented in Appendix 7.2. 4221 people in total responded to the survey, active from the 5th of May 2015 to 11th of May 2015, out of which 3801, 89 per cent, choose to complete the whole survey including the general questions while the rest, 11 per cent, choose to only answer the loyalty related questions and then quit the survey. The amount of responses, for the first part as well as for the general questions, exceeded the limit of 2401 which was needed to fulfill the, in Chapter 3.3.3 stated confidence interval (two per cent) and confidence level (95 per cent). For the part where the respondents got divided into two different paths, the path with the lower amount of respondents got 446 responses, which is above the desired limit of 385 responses, based on which the a confidence level of 95 per cent and a confidence interval of five holds.

As can be seen, 98 per cent of the respondents were men and most of them were living in Europe (55 per cent) and North America (30 per cent). 85 per cent of the respondents were in the age span between 16 and 35. All these results matches well with the once from the general customer experience survey, described in Chapter 3.2.2. Almost 75 per cent of the respondents consider their own technology knowledge higher than the commonage as can be seen in Figure 4.3. Many of the respondents has been Paradox customers for a long time, over 25 per cent of them has owned a game from Paradox for over 10 years, as seen in Figure 4.4. As seen in Figure 4.5 they spend a lot of time to play computer games, in average they play at least two hours per day, but as can be seen almost 50 per cent play more. They further on spend several hours per week at the Paradox forum, as seen in Figure 4.6.
As seen in Figure 4.7 more than 60 per cent consider an in-game shop as positive, but most of them emphasizes that it has to be discrete. Further on almost 25 per cent has a negative attitude towards it. The attitude towards a loyalty program is approximately the same, but only 15 per cent consider it as negative, as seen in Figure 4.8. In question 10 and question 11 the respondents were asked how points or levels should be earned in a loyalty program as well as which benefits they should earn. In the free text answers from these questions many with a negative attitude towards the program were afraid that it would become too easy and naive to earn loyalty, as well as afraid that the benefits should give the player an unfair advantage in the game.
As seen in Figure 4.9 the marketing used today is perceived as good by the respondents. In every of the three categories 70-80 per cent think it is “good” or “very good”. The most of the rest has a neutral perception of it and only 2-3 per cent thinks it is “bad” or “very bad”. Related to marketing it was asked what the attitude for PM is, and as seen in Figure 4.10. 12 per cent perceive it as negative, and almost 60 per cent thinks it is positive. As seen in Figure 4.11 more than 50 per cent perceive the option of being able to set where the personalized offers should be shown as something positive and less than 10 per cent perceives that option as something negative. This implied that 446 people takes one specific path including questions related to why they do not like personalization, while the rest responds to where it should be shown.

As seen in Figure 4.12 50-60 per cent of the respondents having a positive or neutral view of personalization think that personalized offers can be provided to the customer in the Paradox shop, in a potentially in-game shop, at the forum website, at the Paradox website as well as by email. Less than 15 per cent want it on Facebook and in the free text answer field many also wanted it shown on Steam. Figure 4.13 shows how email was the most popular alternative when only one option could be answered, but as further seen the second choice
was the potential in-game shop. Also here Steam was entered by many as a free text alternative.

**21. Where are personalized offers ok?**

![Chart](image)

**22. Where do you prefer personalized offers the most?**

![Chart](image)

Among those who perceive personalization as something negative they could rank three possible affecting factors depending on how much that factor was the cause for their concern, as seen in Figure 4.14. At first it can be seen that for all factors the single option most people choose was “very much”. Related to the feeling of being monitored almost 50 per cent thinks it affects the perception of personalization “very much”, while it for the actual security of the data is just around 30 per cent. The fear for data spread is in the middle, at around 42 per cent. The same order holds for a combination of option “5” and “4”. In total 60-70 per cent perceive all these three factors as “5” or “4”.

**23. How does these factors affect your perception of personalized offers? We would like to know why you do not like personalized offers.**

![Chart](image)

Related to data security it is in Figure 4.15 shown that almost 60 per cent has a negative attitude towards DRM protection but almost 10 per cent are positive towards it. Further on Figure 4.16 shows how the respondents in average feel 30 per cent more safe and secure at
Paradox Interactive websites than online in general. The charts shows how the responses are opposite for Paradox Interactive in comparison to the general online feeling.

18. What’s your attitude towards use of DRM protection for computer games?

![Chart showing attitudes towards DRM protection for computer games](image)

**Concern online: q24 and q25**

![Charts showing concern over information stored](image)

Among the respondents an interest for explicit data security information and data has been shown, as seen in Figure 4.17 and Figure 4.18. The charts are similar to each other and shows that more than 50 per cent of the respondents are or probably are interested in getting explicit data security information. Question 26, “Is there anything you would prefer us to change for you to feel more safe and secure?”, was a free text question highlighting what should be changed in relation to security, out of which a few often mentioned factors are summed up in Table 4.2: Table describing what the respondents want the company to change in relation to data security.

28. Would you like explicit information about how data is stored in order to feel more secure? E.g. information related to encryption techniques, authentication and storage location.

![Chart showing preference for data security information](image)
Encrypt all (most) data

Use Secure HTTP (HTTPS) for all connections

Increase transparency

Use data security certificates

Use simple policy contracts

Use two-step verification for login

Implement a possibility to delete account data and forum data

Use rules for the passwords

Hash the passwords and “salt” them

Do not send passwords in plain-text in emails during password recovery processes

Table 4.2: Table describing what the respondents want the company to change in relation to data security

As seen in Figure 4.19 the developer studio of a game affects the customers' willingness to purchase more than which the publisher company is. More than 65 per cent are on the “positive” side indicating that the developer affects the choice, while the same value for the publishing company is 40 per cent. As seen in Figure 4.20 the developer studio and ability to watch a video online of someone playing the game affects the most. Among the free text answers dominated rumors from friends as answer.
5. Discussion

Based on the results and the followed analysis, this chapter contains a thorough discussion of aspects touched upon as well as alignment with the stated research questions and objectives. Further on theoretical contributions are presented and recommendations in the form of empirical contributions for companies in the CGI are given.

As shown in Figure 3.2, the main objective the results sum up to is recommendations for companies in the computer game industry, which are presented in Chapter 5.3. This is as shown in the figure built upon a modified identified approach, which is described in Chapter 5.1.4. In turn this approach is built upon findings about the CGI (chapter 5.1.2), the findings about the role model industries (Chapter 5.1.2) as well as the identified differing aspects (Chapter 5.1.3). Further on the theoretical contribution the findings results in are discussed and described in Chapter 5.2.

5.1. Empirical Results Linked to Theory

The empirical results in this chapter will be presented, analyzed as well as linked to used theories. In order to create a structure easy to follow, it follows the same pattern as the objectives presented in Chapter 1.2, initialized by the sub objectives and finalized with the main objective of this thesis. Chapter 5.1.2 is performed to meet sub objective O1, by investigating the role models, while Chapter 5.1.2 is performed to meet sub objective O2 by investigating the CGI itself. Chapter 5.1.3 aims to meet the sub objective of finding differences between the role model industries and the CGI, O3, as well as answering research question RQ1. The second research question, RQ2 is answered by Chapter 5.1.4, which leads to that sub objective O4 is addressed, by identifying how to modify the general approach.

The summary of the empirical results are presented below:

- **Role Model Industries**
  - **The Choice**
    - The choice is not based on where PM is used most beneficially, but where it is beneficially used and implemented
    - Grocery store industry
    - Travel and hospitality industry
    - Online gambling industry
  - **Characterizing Factors**
    - Personal data is used to increase relevance
    - Cross marketing and cross selling is used
    - Brand awareness is high
    - Customer loyalty is important for the PM strategy
    - Marketing strategy is pull focused
  - **The Identified General Approach**
    - Use personal data, such as CRM data, to improve personalization
- Work for high loyalty
- Use cross marketing and cross selling
- Work for making the customers trust the company
- High transparency is desirable
- Increase brand awareness by using pull focused marketing

**Computer Game Industry**
- Brand awareness is low
- Customer loyalty is high
- Cross marketing and cross selling is not used
- Many customers are conservative and does not like changes
- High level of technology knowledge
- Demand high security and information about the used approaches
- The use and storage of personal data is demanded to be transparent
- The marketing strategy is push focused

**Differing Aspects**
- Brand awareness
- The use of cross marketing and cross selling
- The level of technology knowledge
- The customer loyalty
- The work for increasing loyalty

**Modification of the Identified Approach**
- In-Game Shop
  - Make the implementation discrete
  - Make the offers relevant using personalization
- Loyalty Program
  - Deal with the conservatism by making it well aligned with the company’s image
  - Use it to increase loyalty
  - Use it to collect more personal data
- General Technology Impact
  - Do not use the term “DRM” protection since it is perceived as negative
- Data Security Impact
  - Describe the value of PM for the customers
  - Use secure and well known data security techniques
  - Describe the used techniques for the customers
- Personal Data Access and Transparency
  - Be transparent with the stored personal data and about how it is used
  - Let the customers modify or delete their stored personal data
  - Use simple policies related to how personal data is stored and handled
  - Be transparent with the gathering of personal data
- Cross Functions
  - Do not use cross functions until the brand awareness is high
  - Increase brand awareness by using pull focused marketing
5.1.1. Role Model Industries

The empirical results of the investigation of the role model industries are discussed below, describing how the industries were chosen, what is characterizing for them as well as what identifies the approach for the investigated industries. By discussing the role model industries and the related findings sub objective O1 is addressed. This is performed by primarily identifying the characteristic factors as well as the general approach, which are used in order to compare it to the CGI respectively to get base approach that can be modified for matching the CGI. Before these findings are discussed, the actual choice of role model industries is discussed.

The Choice

There are several industries today beneficially using personalization as one of the major components of their marketing as well as of their business in general. The choice of three role model companies was not based on a fully investigation of all industries using personalization, but as a sample of them based on the performed literature study of PM and related subjects. The choice, to not investigate all industries and based on that chose those using personalization best or most, was argued to be fair since the goal was not to investigate the best use of personalization. Instead the goal is to investigate how some industries uses personalization, and based on this develop a general understanding that after modification can be adopted by the CGI. Hence the choice of industries aimed to find industries that uses personalization and is relatively diverse from each other.

The first industry chosen was the grocery store industry, mostly based on the fact that companies in this business early adapted to PM and that companies today uses it thoroughly to attract customers due to valuable and relevant offers. Already in 1995 the multinational company Tesco started to use PM in their customer loyalty program, based on a customer club membership. Secondly the online gambling industry was chosen, mainly based on the fact that it is a growing business in which it is argued that personalization is the key to attract and keep the customers. Online gambling differs from grocery stores by being online instead of offline as the core of grocery stores is. Thirdly the traveling and hospitality industry was chosen, which as argued is an initially offline business which more and more has moved online. It is argued to be especially interesting since cross marketing and cross selling is a useful approach, where for examples hotels can be offered as a supplement to a booked flight.

Characterizing Factors

In all investigated industries PM was argued to be valuable to be able to perform cross marketing and cross selling, to make the customer interested in other products using the fact that the customer is one specific product. It is stressed that all kind of marketing should strive for being relevant to reach maximum efficiency and to keep the customers satisfied. This is supported by the earlier studies, where for example Tam and Ho (2006) stresses the importance of relevance in general and Meyers-Levy and Peracchio (1996) as well as Sujan et al., (1992) argues that it is important to use relevant marketing to keep the customers interested. The PM enhances the possibility of creating relevant information, and from a
customer’s perspective the satisfaction seem to be positively affected by high personalization and much knowledge, since it increases the relevance. At for example the grocery store company Tesco, they started to analyze the large amount of data by hand to find interesting patterns. This may be a critical part of the analysis work, since regular methods may not suit all demands and all companies.

In the traveling and hospitality industry it is argued that cross marketing and cross selling can be performed by providing the customer with recommendations for, for example hospitality when a trip is booked, or vice versa. The brand awareness differs a lot, but for the most famous companies in the industry it is high. Further on the trend in the industry is to use much resource for making the customers aware of the brand, which implies that the brand awareness is sought to be high. In the online gambling industry the possibility for cross selling and cross marketing is on a lower level and more related to attracting customers to other games on the website itself. Since the all the products in most cases are collected on one webpage, the brand awareness of every specific product is high. In the grocery store industry cross marketing and cross selling are often performed on specific products, where an interest for one product can be increased by promoting it by for example recipes involving it or by placing it near another related product. Brand awareness in the grocery store industry can be related to specific products, were similar ones has different price. As shown in the benchmark it is shown that PM within the grocery store industry can be used for increasing this kind of brand awareness.

For all investigated industries the brand awareness is important and related to PM as well as to cross marketing and cross selling. Brand awareness is related to cross selling and cross marketing since it is stressed by several previous studies, presented in Chapter 2.6.4, that cross marketing and cross selling has to be relevant to be efficient, and the relevancy can be enhanced by making people aware of the products and thereby by increasing brand awareness. Cross marketing and cross selling itself is also used in the industries, even though the approaches differ.

Merchandising was identified to be used in the travel and hospitality industry as well as in the grocery store using cross functions and briefly in the online gambling industry. However it was not related to PM in all cases, even though it was one of the main factors used in the travel and hospitality industry merchandise process.

Customer loyalty was in many of the investigated industries identified as a factor linked to PM as well as to satisfaction of the customers. The customer loyalty in the travel and hospitality industry is important and the companies are using much resource for keeping the best and most valuable customers. The loyalty is related to the marketing, and it has been shown that people demand high quality offers with high value, instead of spam emails. This can be an implication of the fact that most companies in the industry uses loyalty programs, and then email spam may be a influenced by offers from different companies. Some people argue that it does not exist real loyalty in this industry, but instead just repeated purchases, which may be hard to separate. In the online gambling industry the loyal customers are
desirable since the cost of keeping customers is much lower than for acquiring new ones. However “problem gamblers” may have negative effects on the efficiency of the programs, especially for companies with many of those customers. Also in the grocery store industry the loyalty is of high importance. This since a loyal customer may perform all or most of their purchases in that specific store which is valuable. It has been shown that people want a human relation to feel satisfied and be loyal, which can be performed using personalization. Based on this, customer loyalty is shown to be important for all investigated industries, even though the impact may differ. However the border between fully loyal customers and customers that just repeat their purchase because it seems like the best offer for the moment may be hard to identify.

In all industries a lot of effort is put into branding, to make customers aware of the brand itself as well as the company’s products. Even though the marketing strategy in many cases may be related to push strategy, including direct offers for specific product, it is influenced by pull strategy as well. Pull strategy implies that a lot of resources are put into branding to make customer aware of the brand, which in turn makes them look for specific company’s products. This instead of, as a company, always have to push the specific product to the customer during every possible purchase.

The identified most interesting factors from the investigated role model industries are brand awareness, customer loyalty and cross functions. All of these factors are related to PM as well as partly linked together. These findings are a part of the sub objective O1, which are used for comparing the role model industries with the CGI.

The Identified General Approach

Based on the performed investigation of three role model industries which are using PM as a main factor in their daily work, several differences but also similarities could be identified. PM was during the investigation shown to be useful for many different aspects including CRM, increase of revenue as well as differentiating. The relation between CRM and PM was illustrated by Savadkoohi in the trust loop, Chapter 2.6.4, which emphasized how PM can lead to increased CRM, which can be directly linked to the increased knowledge about the customers the personalization leads to. On the other hand improved CRM can help companies to deliver better offers due to the increased knowledge, which will improve trust and satisfaction and in turn increase the revenue of the company. Even though the loop describe how this can lead to improved PM due to more resources, it should also be taken into consideration that improved CRM can directly improve the personalization due to increased knowledge as well.

As described in the industries, customers’ demand relevant marketing offers, which can be achieved by combining other data with the CRM data. In for example the grocery store industry one of the main grocery store companies in Sweden, ICA, put a large amount of resources into developing their CRM system, for enhanced personalized offers. In the traveling and hospitality industry it was identified that several companies are using CRM data and also are working for getting better data, but still the data itself could be used in more
efficient ways, for even more personalized offers and especially for predictive personalization. Based on this particular findings related to the CRM, it can be concluded that in these investigated industries CRM is of large importance, and can be used for enhancing customer experience, by improving the personalization.

By analyzing the industries related to PM, much comes back to customer loyalty and the importance of it. It has in all industries been shown that companies are working for increasing the loyalty, by using for example loyalty programs for the customer. However previous studies, presented in Chapter 2.2, has in several cases argued that, what is perceived as loyalty, it nothing more than repeated purchases, which may be related just to the fact that the customer has not found any better deal. Specific loyalty programs have been shown to be widely used in the travel and hospitality industry as well as in the grocery store industry. The used approach can in the majority of the cases be traced back to the first loyalty program, started by Tesco in 1995, and be based on points the customer earn by buying products, which later on gives value back such as discount coupons. In all investigated industries it is further emphasized that loyalty is achieved by providing customers with relevant offers and products, implying increased satisfaction. In the travel and hospitality this is often performed by merging stored data with the CRM data, while it in the grocery store industry is emphasized that companies should work for more personal and human interaction with the customer, for increasing loyalty. Related to loyalty and satisfaction for the customer, it has been shown in the role model investigation how important price and especially the way of finding the lowest price are. As identified, especially in the travel industry, it is important to provide the customer with information about the lowest price and if they have it.

The investigation further showed that PM in many cases can be used for performing cross selling and for providing the customers with cross marketing offers. The major factor identified, describing how personalization can enhance cross functions, is that the knowledge gained by improved personalization can enable more relevant cross marketing and cross selling. As identified in the investigation and which is supported by previous studies as presented in Chapter 2.2.1, customers demand relevant information.

In the traveling and hospitality industry it is beneficially to use cross channels instead of multi channels, which is defined by data gathered from various places and stored together instead of stored separately. This change has been shown to improve the data itself as well as the relevance of the data, which in turn implies that cross functions can be used in a more accurate way. As described the online gambling industry has relatively high brand awareness of specific products on websites, however it is argued that customer are unwilling to interact with new products on the site without a relevant and well described path. For increasing the chance of customers trying other products, cross marketing can be performed by describe how the new product is similar or related to the used product, which is easier to do if more knowledge about the customer and its behavior exists. It can further on also be promoted by offers combining the new and already used product. In the grocery store industry the cross marketing and cross selling approach is relatively similar to the other industries, it is argued to be efficient and widely used. As an example it is argued that cross selling can be
beneficially performed by placing related products near to each other in a store, while cross marketing beneficially can be performed by including the marketed products as part of recipes or equal.

As shown, cross marketing as well as cross selling is performed in all investigated industries and is argued to be beneficially for the companies. Different approaches are used in all industries, but for all of them relevance is of high importance. Cross functions are not beneficial unless the promoted products are related to the customer and its previously used products and behavior patterns. For enabling the possibility of making relevant offers, it is beneficial to store and analyze data about the customer. This identified general approach is as mentioned used as a basis for the further on modified PM approach created for the CGI, and is the final part of the sub objective O1.

5.1.2. Computer Game Industry

This chapter describes the CGI as well as the characteristics for it, which is the final part of addressing sub objective O2 and used for answering RQ2 and meeting sub objective O4 as well as addressing O3 by comparing the characteristics from the role model industries with the ones identified here.

The CGI, as part of the broader video game industry, is an increasing industry based on several large as well as small actors, nowadays working mostly online. Even though the dividing of different parts in the industry is similar to for example the book and movie industry, customers are argued to not have high brand awareness. People does in many cases not even be aware of which category a certain company belongs to, which likely is an indicator of that customers in most cases do not primarily chose a product based on brand of the publisher or development studio. There exists a minority of companies which are argued to have a loyal fan club, which is likely to be based on a strong brand which in turn is argued to provide the companies with several positive effects. The customer loyalty in the CGI differs a lot, but is argued to be high for those people that are aware of brands. Many case company customers are loyal, which may be an implication of their relatively hard games that takes a long time to get familiar with. One factor likely to influence the amount of loyal customers is the interaction between companies and their customers. This communication is performed using various channels, such as forums, game websites, emails and physical events. It should be noticed that the wanted interaction with companies and each other may depend on the category of games. Many games published by the case company are high level strategy games, which may encourage people to communicate with each other more than in other game genres.

In the area of publishers Steam is the undoubtedly the leader, having a clear majority of the online computer game sales. As described by many employees at the case company, Steam is not just a portal for selling games, but is making up for a large part of the backbone of the game systems as well. Even though it theoretically is possible to create an in house game portal used for selling, it is not an option to abandon Steam, even though the loss of direct
income may decrease by leaving Steam. Related to game portals and loyalty and satisfaction of the customers is DRM protection, which amongst many customers is perceived as something negative since it is argued to lower the game experience. Even though it should be perceived as techniques used for preventing illegal copying of the software, it nowadays gets related to game portals and therefore also the tools and techniques for delivering personal content in a flexible way to the customers. In order to get useful data for the personalization process it is beneficial to make the customer register themselves and log in. One useful approach for collecting data is to, as a publisher, use an own game portal which the customer is forced to use for playing the games. The possible drawback is if customers perceive the extra login process as a barrier rather than additional value.

Most sales in the CGI are argued to be based on one single product. Even though bundle packs exist, they are rare. The offered packs are static, implying that customers are not offered to set up their own pack of games and merchandise to a beneficial price. Cross marketing of computer games has been more and more popular, but is still not performed by all companies, which may be linked to the fact that people are not aware of the related products, which in turn therefor could be perceived as irrelevant. The use of merchandise has been shown to be crucial in this industry, but as mentioned the prices should be carefully set.

Related to data security and customer integrity and privacy, the customers in the CGI is argued to have more technology knowledge than the commonage, implying that they, beside other, are more aware of the security risks that exists. Some customers are in general conservative, implying that they complain about most changes performed by the companies. It is argued by employees in the case company that most customers that perceive personalization as negative are influenced by the feeling of being monitored, rather than feeling scared for the data to be spread. Based on this and in combination with the high technology knowledge, it is argued that explicitly descriptions of used data security techniques will not make customers more accepting to personalization. However the performed customer investigation showed that the feelings of being monitored, data security as well as the fear for data spread are all affecting aspects.

The data security as well as the customer integrity and privacy part can be discussed in relation to the five aspects described by Stallings and Brown: access control, cryptography, physical security, security architecture and design and telecommunications and network security. This is touched upon from the perspective of the case company, implying that the techniques may differ between different companies, but are likely to be similar. As described, the data stored by the case company is argued to be safely accessible due to the use of an acknowledged and famous third party companies, implying that the physical security and the access control is handled by them. However the access by for example customers is handled by entering a combination of a username and a password, which may imply risks, which in turn may lead to that data can be leaked. This is related to the confidentiality part of the CIA triad, covering aspects of keeping data away from unauthorized people.
As argued, it is critical to help the customers to create safe passwords to avoid unauthorized access to the data, which also can be combined with technical solutions related to avoid password guessing techniques, as part of the security architecture and design part. The cryptography part handles how secure the data is as soon as it is stored, which is argued to be more secure by encrypting it, even though it may be sufficient to use secure authorization, since the encryption can be forced. If enough security for the encryption is used, it is argued to be too slow for use. Finally the telecommunications and network security part relates to the transmission of data, which as described is fully secured using TLS technique in for example the case company. This in turn handles the integrity as well as the confidentiality aspects in the CIA triad, since it makes it impossible, or at least hard to read as well as to modify the data during transmission from the customer to the company and vice versa. Further on the use of TLS partly makes up for the three described important aspects of data transmission, namely the second and third part, that the sent data is identical to the received data respectively that the sent data should not be able to read by a third party. This is accomplished by the encryption techniques of TLS.

As identified during the benchmark a specific marketing strategy was hard to identify, for the company as well as for the industry as a whole. A distinction between a push strategy and a pull strategy is not clear, but several factors indicate that the strategy is more push related. Even though companies in the industry seem to work with branding, and the case company for the moment puts resources into branding and making the brand itself more known and attractive, it is argued that the marketing strategy is more related to the push strategy. Offers are in most cases linked to direct products, and just a minority is related to increase of the brand value. High brand value is related to customer loyalty, which in the case company is argued to be high, but may vary in the industry as a whole.

5.1.3. Differing Aspects

Based on the discussion in Chapter 5.1.2, which addressed sub objective O1 and O2, this chapter addresses sub objective O3 and answers RQ1 by analyzing the identified characterizing aspects in the role model industries as well as in the CGI. These will in turn be used in order to modify the, in Chapter 5.1.1, identified general approach of implementing and using PM.

One major aspect that is argued to differ the investigated role model industries from the CGI is brand awareness, which in turn has large implications for how personalization can be performed. In all investigated role model industries brand awareness was shown to be relatively high implying that customers in many cases are aware of products created by the same company. This in turn implies that companies can use cross functions, such as cross marketing and cross selling between a, to the customer, already known product and another from the same company without high risk of being perceived as irrelevant. In contrast, the brand awareness in the CGI is argued to, in most cases, be low. Even though some companies have an actual group of real fans, most companies, regardless of if they are publishers, developer studios or distributors, have products that are far more known than the underlying
brands. Based on this, a push marketing strategy is more suitable for the CGI, while the role model industries uses pull strategy in a larger extent.

Related to brand awareness is customer loyalty, which in all role model industries is shown to be desirable but in some cases is hard to specify as high versus many repeated purchases. In the CGI it is diversified, but argued to be high for the case company. As shown in theories, loyalty is related to trust for the company, and for the case company it was also shown to be related to the high demand of high quality deliver. It has been identified that the most distinct difference is the companies in the investigated role model industries works hard for increasing the loyalty, while the CGI has a relatively high level of loyalty, but does not in particular work hard for increasing it. However the case company is starting to work with loyalty, by investigating the possibility of implementing a loyalty program and they have as Steam started to use a wish list helping customers make good deals for products they want.

As mentioned, cross functions are related to the brand awareness, and therefore in turn with loyalty. One differing aspect is therefore that to keep the relevance high, cross marketing can only be performed towards the loyal customers in the CGI, while it in the role model industries could be used by default.

As identified during the interviews as well as in the CLS, people in the CGI seem to have higher technology knowledge than the commonage. No similar patterns were identified in the role model industry investigations and the people in all these three industries are argued to not be differing from the commonage. Based on this it can be argued that another differing aspect is the level of technology knowledge, where people in the CGI has more knowledge and are more interested into technology, than people in the role model industries. This in turn is according to the performed interviews linked to a higher consciousness for data security, which in turn is related to personal integrity and privacy online. Related to the level of technology knowledge is the working area for the role model industries as well as for the CGI. The online gambling industry as well as the CGI was shown to be almost excluding working online, while the grocery was mainly offline and the travel and hospitality industry is working online as well as offline.

5.1.4. Modification of the Identified Approach

To answer RQ2 and address sub objective O4 which in turn leads to the possibility to address the main objective, this chapter presents, based on the identified general approach (Chapter 5.1.1) and the differing aspects (Chapter 5.1.3), how the identified approach should be modified to match the CGI. The main objective in Chapter 5.3 by presenting the empirical contributions, in the form of recommendations to companies in the CGI, related to how they should implement a PM strategy.

Customer loyalty was identified as important for the personalization and was in the role model industries a coveted asset. Even though loyalty was identified to be relatively high in some parts of the CGI, it is argued to be beneficial to increase it further, which is not a direct
modification of the identified approach, but is built up of factors specific for the CGI. As identified in the investigation it was shown that several companies uses their own game portals, which offers additional value and in some cases is optional while in other cases is mandatory for being able to play the games. As identified Steam is the largest game portal in the industry, which gives the customer much value. Even though individual game portals during the case study has been shown to increase customer loyalty, it was further identified that customer in this business does not want to be forced into anything. Instead it is argued to create own game portals, beneficially in combination with a general loyalty program, but not force customers into it, but make them want to join because of the additional offered value. As shown the general customer experience survey a clear majority uses Steam to purchase the games, but over three times more people gets their information about the games on Paradox Interactive related sites than on Steam related sites. Based on the shown willingness to use Paradox Interactive relation, the recommendation to develop the own internal sales channel more is supported. Even though some approaches differs between online and offline in relation to personalization, the differing between the investigated industries did not reveal any clear distinctions based on which a modification could be made.

In-Game Shop

Even though the use of merchandise was not a clear aspect related to PM in the investigated role models, it was shown to be used in the CGI and further on shown to be affecting the loyalty. One of the major merchandise components in the CGI, DLC, has during the investigation been shown to affect loyalty. On the one hand the fix for the relatively low prices of computer games, by using purchasable DLC has been shown to irritate the customer, while on the other hand the release of DLC has been shown to create a loyal customer base. As identified during this investigation the pricing of computer games is low, but an increase of the base price does not seem to be a solution since the customers are described as unwilling to pay more than the prices of today. Even though the interviews further revealed that some customers have a negative attitude towards paid DLC, it is based on the findings argued to be the most convenient approach. This DLC offering can beneficially be combined with other merchandise and it is argued to positive to offer it within the games, due to the argued increased buy power for the specific moment in the game. In the longer perspective more merchandise and DLC sales may change or even solve the whole problem with price setting in the business, by making customers more used to this new approach, where a specific amount of entertainment hours is more bound to a specific cost of for example a DLC product.

As the investigation shown, people perceive offers and related components as discrete and not disturbing as long as they are relevant for them. The relevance has been shown to be increased by using personalization as presented in Chapter 2.6.3, which in turn becomes more accurate if the information is more detailed. Based on this and the interviews it is important to make the in-game shop discrete. From this perspective the personalization should be as detailed as possible and all available data should be collected and used. However it should be noted that too much personalization has been shown to have negative impact on the
customers, due to the increased feeling of monitoring and the fear related to data leaks and data security.

Loyalty Program

As was identified mostly in the performed customer survey statistically significant results showed that more than 60 per cent perceive a loyalty program as something positive. However it should be noted that approximately 15 per cent perceive it as negative, which should be taken into consideration. Based on the performed study as a whole it is argued that this resistance for a loyalty program is partly linked to the conservative spirit in this industry as well as to the resistance for sharing more personal data which may imply an increased feeling of being monitored. It is however argued that the conservative part may be able to ignore this approach, since on the one hand people seem to adjust to the new after a while and, on the other hand the relatively small part of the customers that dislike this idea will probably not abandon the company just because of that.

The integrity problem is argued to be more critical, but may be possible to resolve by being transparent with the stored data, describe which data is stored as well as describe why it is beneficially for the customer. As identified in the survey it was shown that several people were afraid that the loyalty program would be unserious and provide for example people spamming the forum with advantages. Based on this it is argued that a loyalty program in this industry has to be aligned with the image of the company, which in the Paradox Interactive case is a serious image related to high quality. Loyalty points should be earned by performing serious efforts and the benefits should not affect the actual game experience.

As have been argued in several previous studies and theoretical models, as presented in Chapter 2.2, the important aspect of a successful company in several industries, customer loyalty, is in many cases a direct effect of customer satisfaction. As have been identified during the interviews the customers to Paradox Interactive are particularly demanding in the sense of quality and service related to the delivered products. Even though this can be linked to several positive aspects such as the willing to interact with the company, it also increases the pressure on the company. The model by Spreng and Mackoy (1996) describes how the customers' expectations and the perceived quality of the delivered product differed the most in those areas the customer perceived as most important. Based on this it is argued that the model is applicable for the CGI and its customers, which in turn is argued to imply that the important areas for the customer should be prioritized. The loyalty program is argued to affect the perceived quality of service as well as the customer satisfaction.

General Technology Impact

As was shown in the CLS a majority of the customers have an interest in technology as well as a lot of knowledge in the area. Further on, based on the findings, it is argued that this interest and knowledge covers data security issues as well. Based on this the personalization approach for the CGI should emphasize technology issues, and especially data security which as further described below is an important subject. The theory linked to the model further emphasizes that the high expectations implies that better service has to be provided to
increase the “overall service quality”, which is a major part of what builds up the “overall satisfaction”.

As identified customers in the CGI has more knowledge about technology, which in turn is argued to imply higher consciousness for data security, which has been shown to be linked to personal integrity and privacy, especially in the online commerce. Since personal integrity and privacy issues in turn are linked to personalization, this differing technology knowledge is argued to have an impact on the identified approach of personalization. The author Mostaghel (2006) describes how it has been shown that satisfaction and the factors having an impact on the satisfaction is mostly related to those areas the customer perceive as most important. Based on this it is argued that these integrity and privacy issues are important for the customers in the CGI, and has a large impact on perceived quality and satisfaction.

One often discussed subject is as shown the DRM protection which is related to data security but which also has been shown to have positive impact on customer loyalty if it is avoided, and vice versa. DRM has been accused for jeopardize the data confidentiality and integrity, this even though companies in the CGI sometimes today uses the term as an umbrella term where the potential data security risks are just a minor part. Based on this it is argued to, as a computer game company, stop using the possible integrity and privacy jeopardizing technologies which however is described as relatively easy to bypass, and for the other parts of DRM a another name should be used. All this to provide the customers with satisfying content that is easy to use, which in turn should improve customer loyalty.

Besides from the DRM protection, the security of data handling is related to the customer integrity and privacy and is argued to be especially important in the CGI since the knowledge of such areas is relatively high. The three aspects that have been shown to be most important is the transmission of data back and forth between the company and the customer, the storage of data and at last the tracking of user data for example on the company's website. Related to transmission and storage, one of the most often used techniques is encryption, which as shown in the Sony Entertainment case was argued to be an affecting factor giving the case so much attention and decreasing customers' trust.

Data Security Impact

As shown in the CLS surprisingly many answered that they perceive personalized offers as something positive, but still 12 per cent thinks it is negative which has to be taken into consideration. The decision to let the respondents answer different questions based on what they think of personalization was taken to investigated why they who do not like it has this perception, without providing the others with factors possibly making them more negative towards it. On the other hand the once perceiving it as negative should not be asked where it should be shown, since it is contradictory. As identified the feeling of being monitored was the most affecting factor, but still the data security and fear for data spread to third parties were large as well. For all these three factors 60-70 per cent rank it has a “5” or “4” on a 5-scale, describing how much it concerns them, which indicates that all these factors affects the people having a negative attitude towards personalization.
It can be argued that the feeling of being monitored may be decreased by increasing the acceptancy limit, this in turn by increasing the acceptance for personalization. A loyalty program is argued to be perceived as linked to data storage, which it often is and which in turn makes it related to data security. One approach is to clearly describe the gained value by letting the company use and store data, since more relevant and accurate offers can be shown. The importance of this is emphasized by White et al. (2008), and argued to be especially important if the perceived utility is relatively low. Related to the data security issues the techniques mentioned in the literature study were all emphasized as important for feeling safe, as shown in the survey. This includes data encryption, password rules, safe password storage using hash and salt, encryption during transmission as well as the ability to delete data. As soon as such data security techniques are in use, it can be public information which may increase the trust as well as the willingness to share data.

The fear of data spread is related to how complex versus simple the policy contracts are. To solve it, they should write it in a simple style, and maybe even get them certified by well-known policy certification companies. In summary this part of the modification of the identified approach is built upon that a loyalty program should be implemented as mentioned in the identified approach. To satisfy as many as possible of those whom does not like to share personal data, the data security should be high, information should be transparent related to data security and it should be argued why the stored data implies something positive for the customer.

As identified during the interviews in combination with the literature study, besides from data storage, the data transmission is of high importance. Based on the findings the first important factor handles that the data should only be sent when the sender intent to, which has been shown to be possibly threatened by bad DRM solutions. Even though a DRM system is safe, some people still perceive it as a threat, as shown in the customer investigation. Secondly the data should not be able to be altered by a third party during transmission and it should not be able to read by a third party. Both these factors can be solved by using an encrypted transmission technique, such as TLS which Paradox Interactive uses. Since people perceive data security as important, as was shown in the CLS, which in turn should be taken in consideration when going for a more personalized approach which requires much personal data. Based on this the storage of data as well as the transmission of data should be performed in a secure way and be aligned with these three factors, which can be achieved by fulfilling the above mentioned factors.

Even though encryption sometimes is criticized for being possible to break and useless if the outer security systems are strong enough, it may be beneficial to use encryption, not least for, in case of a leak, being able to proof that all reasonable security approaches has been used. If it is used it is argued to be beneficial to provide the customers, that has knowledge in this area, with explicit information about this how it is performed. These actions in combination are argued to increase the trust for the company, by default but also in case of crisis such as a data leak. As described in the Sony case the credit card information was encrypted, which
made it a bit less “dangerous”, but still all personal data was stored in clear text. Since the personal data has been shown in this study to be valuable and important to the customers, it is argued to be an important aspect that made the Sony case known as a leak affecting personal integrity and privacy.

Besides from storage and transmission security, as has been shown in this study access control is important to maintain high confidentiality. As demanded by the customers as well as highlighted by the authors of the security analysis report, password security has to be high. As stated this can be achieved by implementing password rules as well as login control. Both these approaches aim to primarily keep the customers’ data and accounts safe. The report also emphasized the importance of hashing and salting the passwords, which was demanded by the customers as well.

**Personal Data Access and Transparency**

As shown in the role model industry investigation customers' demand clear information and as argued in several previous studies, presented in Chapter 2.2, the customer loyalty and satisfaction is positively affected by letting the customers know what kind of data is stored about them. According to EU law the customer should also be able to get the data deleted, as well as get clear information about all stored data and which of the data that is used for which purpose. The importance of providing the customers with knowledge and information is argued to be related to trust, as for example Cripe (2013) describes in the model. The increased trust is beneficial and as shown in the model it makes the customers more willing to share data, which in turn makes the personalization process easier and more accurate, which in turn implies more satisfied customers and increased revenue. All this is stated in the five important aspects highlighted by Wirtz et al. (2007), which is argued to be beneficial to have as guidelines when developing a personalization strategy in relation to technology.

At first, as mentioned, the customer should be provided with clear information about stored data and how it is used. Secondly the choice of receiving personalized offers or not should be provided to the customer, as supported by the interviews as well as by EU regulations. Thirdly high security should be used, which is argued to be valuable only if the customer knows about it, which in turn implies that it is beneficial to provide them with clear data security information, possibly in the form of certificates. Fourthly the stored and used data related to the customer is able to edit, which can be argued to be related to the possibility of deleting data. If the data cannot be deleted, which several customer has been shown to demand, it should be clearly explained and suggested that the data can be edited into nonsense data, which implies the same effect. Finally, counseling regulations and laws should be followed, which as for example includes the already mentioned EU law.

The possibility to delete data was mentioned as a request in the CLS as well as by Blomberg (2015) who emphasizes that it has been mentioned several times on the Paradox forum. To meet the customers’ demands may increase the loyalty and trust, but as mentioned by Blomberg (2015) it is technically difficult to let the users delete data. Instead he emphasized that the data can be edited. To partly satisfy the customers, without having to implement
these technical solutions, a simple explanation of the problem as well as the solution (to edit the data) should be provided on the website. This is well aligned with the other parts of transparency work, which has been shown to increase customer satisfaction and trust. As shown in the survey more than 50 per cent would like explicit information and be provided with data security certificates, which if provided increases the transparency of what the data is used for, which in turn may move the boundary. Further on people requested the ability to see which data is stored, as well as the possibility to edit and delete it. Related to the transparency of the data and the interaction by the customers, is the approach to let the customers decide which data is used for personalization, as well as where such offers are shown. This is based on the performed CLS argued to be important for customers in the CGI, which in turn may improve loyalty and the willing to share personal data. It is further strengthened by Påhlman and Waldenskiöld (2013) as described in the literature study.

As identified ICA has partly managed to obey the EU regulations related to transparency by include it in a complex contract, which is argued to not be made for the commonage to read, but just as a legal solution. Even though this approach may be legal and possible for obeying the EU regulations, it is not recommended in industry where the customers' demand transparent information written in a simple way. Instead it is argued that the information should be explicitly stated to increase the trust for the company.

By being more transparent with the gathering and use of personal data, it is argued that the acceptance boundary may be raised, as it became due to the regulation of explicitly state the use of cookies on website. Clear and informative data may make the customer more used to the use of Big Data, which in turn may make them being able to share more data, without feeling monitored or feeling lack of trust for the company. This is argued to affect the whole CGI in the long run.

**Cross Functions**

One of the major recommendations in the travel and hospitality industries to be able to attract people by PM is to perform cross selling and cross marketing. This implies that customer data gathered from across locations is merged, based on which products can be marketed as well as sold across the products. This approach is not suitable for all industries, since if low brand awareness exists, the marketing and offers may be perceived as irrelevant. As described general brand awareness across products in the CGI is low, people buys a specific product but are rarely aware of all the products published by the same company.

As identified the case company has for example recently started to working with improving their brand reputation and brand awareness, which is good. This can be further improved by focus the marketing strategy towards pull rather than push, implying that the company brand and product brands gets more known to the customers. From a long term perspective this implies that every specific product does not have to be pushed to the customers, but the knowledge about the company will make the customer aware of what exists. This in turn implies that cross marketing and cross selling can be used to a much larger extent. Since the cross functions can be improved by PM, it is a waste of resources if it cannot be used for it.
Summary of Modification of Identified Approach

Several theoretical models and previous studies, presented in Chapter 2.6.3, along with information from the interviews have indicated that PM is a beneficially and efficient marketing approach where the level of personalized is important to choose correctly. The described model of Alidoost and Läerkert (2011) describes this phenomenon as an inverted u-curve, in which the sought approach, level of personalization, is the peak within the area, called “semi personalized”. This lies between the “not personalized” area in which the risk of irrelevant offers are common and the “very personalized” area in which customer may be negatively affected by integrity and privacy intruding monitoring approach.

Mainly from the literature study it was shown that the main negative effect of a “not personalized” approach, the risk of irrelevant offers, is decreasing customers' satisfaction which in turn may decrease customer loyalty. It is argued that the main problem is not the non-personalized offers in general, but offers with a clear target group that misses and is shown to the wrong people. As was shown in the loyalty survey a majority had a positive view of personalized offers, which supports the model by indicating that personalization is positive. The survey further showed how a clear majority of the persons being most critical to personalization emphasized that the feeling of being monitored, risk of data spread and data security were all affecting factors. However it should be observed that these results are only based on approximately 10 per cent of the respondents, implying that no direct conclusions can be drawn, but still it indicates that the problem with too much personalization exists in the CGI as well. Based on this it is argued that the inverted u-curve model holds for the CGI. Since this usage where shown in the role model industries as well, no need for change of the identified approach in this area is argued to be needed.

Mainly based on the performed interviews, but supported by the CLS as well, many people seem to enjoy personally designed offers, but a lot fewer seem to have a positive attitude towards the collecting and use of personal data. Based on this reasoning it is argued that the computer game companies more explicitly should describe which data is used, how it is used as well as the additional value this implies for the specific customer. This goes hand in hand with the recommended transparency related to data security and the used security technologies. The increased transparency may from a long term perspective indirectly raise the boundary for how much personal data that can be used and gathered by the companies.

The identified general approach emphasizes that cross functions should be used, since it can be improved by PM. However it may be negative to use cross functions if the brand awareness is low, since the offers can be perceived as irrelevant. Based on this the general approach should be modified in such way that cross functions are not argued to be used before the brand awareness is increased, which it can be by focus the marketing strategy towards more pull rather than push.
5.2. Theoretical Contribution

The contributions to the knowledge areas touched upon in this study is primarily focused on PM with focus on data security in relation to the CGI. This implies that this study does not primarily focus on contribution to the general subject of PM and data security, but those two subjects combined with the CGI. It has during the literature study been shown that several other theoretical subjects are related to PM, primarily customer loyalty as well as Big Data handling, which all in turn are related to personal data with related regulations. Within the subject of data security, cryptography makes up for a significant part, including encryption techniques, password hashing as well as parts of the data transmission approach.

Based on the discussion of verified, falsified, modified and created theories below, the following four factors are the main theoretical contributions of this study.

1. It is verified that data security is an important factor in the CGI, which falsifies theories that denies it.
2. The relation between loyalty, trust and satisfaction is verified for the CGI, but the actual connections could not be identified.
3. The theory emphasizing that the level of personalization has to be in the middle is verified for the CGI, which falsifies the theory arguing that increased personalization always is better.
4. For the CGI it was identified that three important aspects to keep in mind while implementing or modifying PM are:
   - The feeling of being monitored
   - Data security
   - Fear for data spread

The theoretical contributions are based on the findings related to the main objective and the answer to RQ2. Below are the three theoretical areas presented in relation to the findings and investigated theories.

5.2.1. Loyalty

The customer loyalty theories, which according to several previous studies, presented in Chapter 2.2, is related to trust as well as to satisfaction, has in this study been shown to partly differ for the CGI when related to PM. Among other, Anderson et al. (1993) argues that increased loyalty increases the company's revenue, which is argued to be true in the CGI as well, based on the fact that companies in this industry strive for increased loyalty. Anderson and Srinivasan (2003) argues that satisfaction directly affect loyalty, Srinivasan et al. (2002) argues that trust directly affects loyalty while Gummerus et al. (2004) argues that trust affects satisfaction which in turn affects loyalty. All these three theories are strengthened by Jiyoung et al. (2009).
As was shown in the general customer experience survey the customers are satisfied with the games as well as with the case company as a whole. In the CLS it was further shown that many of the customers have had games from the same company for many years, which is argued to demonstrate high loyalty. This survey also showed that the customers feel approximately 30 per cent more safe and secure in relations with the case company than online in general, which is argued to indicate trust for the company. Based on this it is argued that trust, satisfaction and loyalty is relatively high in the CGI and that those factors with high probability affects each other, but no significant relationships could be identified.

The theories related to that loyalty programs directly increases loyalty can neither be verified nor falsified in this study, since a loyalty program has not yet been implemented in the case company. However it has been shown that a poorly implemented program that is not aligned with the image of the company may be harmful in the CGI, mainly based on the conservative spirit.

The performed case study has shown that a decrease of trust from the customers negatively affects the brand reputation in the CGI, which as a general theory is confirmed by Regalado (2014). Based on this it is recommended to strive for minimizing possible causes for decreased trust, such as low security which may be a serious problem in case of a crisis. Regalado further specifically emphasizes the importance of high data security related to data storage and data transmission, which based on the survey has been shown to be correct for the customers in the CGI.

Many respondents to the CLS would like simpler privacy policies, which partly confirms the theories by Cripe (2013) and Amin and Birgisdottir (2012) for the CGI, which emphasized that simple policies should be used to increase trust. Amin and Birgisdottir argued that simple policies directly imply increased trust, but this theory has not been able to explicitly investigate further in this study. The model by Cripe defining mutual positive effects of trust can neither be fully verified or fully falsified in this study, however the part related to that increased trust from the customer implies more data which in turn can be used for better personalization, has been shown to be correct in the CGI.

Several authors links loyalty to personalization, based on which Savadkoohi (2012) created a circular model which emphasizes that loyalty and CRM increases trust which in turn, via some other steps leads to increased personalization. This closes the circle by improving loyalty, by providing the customer with better personalized offers. The model as a whole has not been possible to verify or falsify in this study, but parts of it has. Further it is argued that the model could be modified by adding a direct connection back from loyalty and CRM to personalization, since customers has been shown to be more willing to receive personalized offers based on the fact that they are loyal in the CGI. Further on the increased CRM data, as argued by several other authors as well, has indicated improved personalization.

Based on the empirical results related to the shown interest for getting clear information, the choice to set where PM is used as well as the demand for high data security is well aligned
the model by Wirtz et al. (2007). The five aspects defined as important by the authors are all verified to be true for the CGI.

The performed case study showed that many customers have a high demand with specific requests and the perceived quality has to be very high to satisfy the customers. This supports and verifies the theory by Spreng and Mackoy (1996) for the CGI, since the theory described how high perceived quality is harder to acquire if the customer has high expectations and are well known of the area, which the investigated customers are within the CGI.

As described in the literature study, the model used related to customer's decision journey for a long time has been argued to be outdated, and by several authors argued to be too simple to describe all the forces of today's society. The old model has been neither verified nor falsified in the CGI or in general, but parts of the more complex and circular model by Court et al. (2009) have been shown to be correct for the investigated industry.

What is described in the model and argued to be confirmed for the CGI is the high importance of actions performed after a purchase, which the old model did not even cover. The theories emphasize how the post purchase experience has an impact on the customer's decision to add the company or product to the initial set of possible options for the next purchase. Further on it also emphasizes that if customers becomes loyal, they may purchase again without going through the whole loop. This is based on the performed case study of the CGI argued to be verified as crucial. If companies provide the customers with a good post purchase experiences, such as good service, forums and DLC, they are argued to be more willing to buy more from the same company which may be referred to as loyalty towards the company. The model further emphasizes the increased importance of a pull strategy nowadays, which is well aligned with the recommendations to companies in the CGI, based on this study.

5.2.2. Big Data Handling

The handling of Big Data in relation to PM has mainly based on the performed literature study been shown to be related to data security. The performed case study verifies the theory by Yu (2013), related to the emphasizing the importance of structuring all the collected Big Data well. It has in the CGI been shown that the structure is importance for maintaining high efficiency. Suri (2013) described how the data sometimes is used for detect cheating in the CGI, but this phenomenon was could not be verified based on the findings.

A clear majority of the respondents to the CLS believed that they have higher level of technology knowledge than the commonage and many of them specifically demanded encryption of plaintext. This is argued to falsify the theory by Wayner (2014), which emphasized that the use of such data security techniques is outdated, especially in industries where people has a lot technology knowledge. The use of security techniques such as encryption, password rules, and safe password storage etcetera has not been statistically proven to be demanded, but still the theory by Wayner is argued to be falsified in the
investigated industry. This is based on the fact that the survey showed statistically significant results showing that a major problem related to why people do not want personalization is the concern related to data security in combination with the free text results that showed that people demand the previously mentioned security techniques.

Based on the findings that customers in the CGI have a high level of technology knowledge, it is argued to be important to maintain a high level of data security as well as to provide them with information about used techniques. Based on the interview results as well as the CLS, all the five key factors presented by Stallings and Brown (2012, p. 3-5); “access control”, “cryptography”, “physical security”, “security architecture and design” and “telecommunications and network security”, are argued to be important when implementing PM in the CGI. Based on this the “golden standard” related to the, by the authors, presented key factors is argued to be verified as important in the CGI when implementing PM.

The first aspect is related to how access to how sensitive or valuable data is managed, which includes hashing and salting of passwords, password rules, and brute force protection for login as well as general security when storing data. The general safety is especially important when encryption is not sufficient due to the need of quick access. The second aspect is related to cryptography, which in this work has been mainly focused on data encryption during storage and transmission, as well as the actual technique of password hashing and salting. Since the customers are argued to know a lot of the techniques, it is argued to use techniques which are well known and perceived as secure to at first keep the data safe, as well as to in case of a crisis be able to claim that one of the best known approaches has been used. The third aspect is related to how the physical storage of data is maintained, which during this investigation has not been thoroughly investigated. However this security has been argued to be managed by the use of external storage companies, which are argued to be safe enough. The fourth aspect is related to general security approaches, which can be related to for example how deletion of personal data and user accounts are handled. The fifth and last aspect is related to how the transmission of data is secured, which is argued to be related to cryptography since encryption is part of the transmission, as of the storage. Also this aspect has by the investigation been shown to be crucial for the companies to maintain trust from the customers. In summary all these five aspects are argued to be true and verified for the CGI, based on the performed investigation.

Based on the study as a whole it was identified that three main aspects crucial to take into consideration when implementing or modifying a PM strategy in a computer game company. At first the fear related to how data is handled and shared with third parties has to be taken into consideration, which can be formulated as “fear for data spread”. The solution of this is for example related to policies describing how the data is used and to which it is shared. Secondly the actual security of the data has to be taken into consideration, related to how well the data is secured from attacks from the outside, which can be formulated as “data security”. Thirdly the negative aspect of customers’ feeling of being monitored by the company has to be taken into consideration, in order to maximize the willingness of sharing data and to not decrease loyalty. This can be formulated as the “feeling of being monitored”.

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5.2.3. Personalized Marketing

Based on the performed case study, mainly the CLS, it is argued that a significant amount of the customers in the CGI has a negative perception of the personalization related to the three identified areas, the fear for data spread data security as well as the feeling of being monitored. These findings confirm the theories by Yu (2011) and Chellapa and Sin (2005) which emphasizes the importance of the privacy concern when storing and using personal data. Based on this, it has been argued that the personalization approach has to take all these three aspects into consideration, which supports the mentioned theories. Even though a full investigation of possible concerns was not performed, it is argued that these three factors makes up for a significant part of the privacy concern. As identified the feeling of being monitored may be directly increased by the relevance and accuracy of the marketing, based on which it should be taken into consideration that even relevant marketing may be perceived as something negative. An example of this is how many of the marketing campaigns used on the Facebook website, which is obviously personalized and linked to products previously investigated on the internet, according to the CLS are not popular.

This study shows that customers can perceive personalization as something positive, which is identified in the CLS. The statistically significant results showed that more than 50 per cent related personalization as something positive. This supports and verifies the theory by Fan and Poole (1996), which emphasized in their theories that customers like personalization since they may get a better experience in the relation with the company. The theories related to how aspects of how personalization should be performed to attract most people has not been further investigated in this study, based on which it is neither verified or falsified. However, the performed CLS showed statistically significant results of how more than one third of the customers prefer the email technique when receiving personalized offers, which partly supports the theory by Jen-Hung and Shyu (2009), which argued that email communication enhances the quality of the relationship between the customer and the company. Based on this it is argued that this positive factor among other makes customers in the CGI positively set towards email marketing with personal offers.

The performed CLS in this study shows that more than 10 per cent of the customers dislike personalization and many of them related it to the fear of data being stolen or spread. These findings supports the theory by Alidoost and Lärkert (2008), which emphasizes that a major concern holding people back from sharing data useful for personalization is the privacy issue. Related to this, Awad and Krishnan (2006) described a theoretical paradox, implying that customers want personalized offers but does not want to share data. This phenomenon could neither be verified or falsified for the CGI, since the respondents to the CLS that perceived personalization as positive was not asked if and why they do not want to share data. This choice related to the structure of the survey was as previously mentioned based on the fact that the case company did not want to make these customers concerned about aspects they have not thought about before. The CLS further showed that many customers demand the possibility to see and manage data stored about them. This supports the theory by Savadkoohi
(2012), who argued that the problems related to privacy concerns can be solved by letting the customers see and manage what is stored about them.

Based on the CLS it is argued that customers to the case company perceives the current marketing and advertisement as relevant, which shows that the case company performs good marketing nowadays. This does however neither verify nor falsify the theories by Tam and Ho (2006) and Sujan et al. (1992), which emphasized that an advert has to be relevant to wake interest and be perceived positively. It is further, in several previous studies, presented in Chapter 2.6.2, emphasized that the value of the offer has to exceed the “cost” of sharing data, but this has not been further investigated in this study. This is related to the findings by Yu (2011), who identified that too personalized emails, for example initialized with a greeting, may have a negative impact on the customers’ experience of the offer. However, as Kircher et al. (2000) describes, self-referent messages are in the brain perceived differently from general impressions. Even though no full investigation of this theory has been performed, it is argued that there are several aspects to weight in, handling positive as well as negative implications related to the level of personalization. In summary it is still argued that too relevant offers are not perceived positive, if they trigger the feeling of being monitored.

The theories related to the inverted u-curve by Alidoost and Lärkert (2011), which is argued to hold for PM and implying that personalization is perceived positively to some limit, after which it is negatively perceived since customers get the feeling of being monitored. This theoretical model was not fully investigated in this study, but none of the gathered knowledge and information indicates that it should not hold for the CGI.

5.2.4. Summary of Theoretical Contribution

The primarily goal of this study was to, by investigating the CGI, contribute to the theories related to PM focused on data security in the CGI. The theoretical contributions can be divided into three main categories, namely data security which is related to integrity and privacy, loyalty and trust as well as PM in general. PM in general is related to development and verifying analysis of PM in general, related to how it can be implemented in the CGI. The data security is related to a focus area within PM, which for the CGI has been shown to be important, mainly due to the shown high level of technology knowledge and the nature of the industry. The loyalty and trust part is related to PM, but makes up for an individual part focused on the customer. In these areas theories can be verified, falsified or modified for the CGI, but since several theories are exclusively used and not investigated or tested, no significant results can be drawn for all of them.

Data Security, Integrity and Privacy

Data security is related to PM by being linked to the handling of Big Data. As shown in the literature study customers' integrity and privacy is important when handling this type of data. Based on this, pure data security theories can be linked to PM and the integrity and privacy part.
Stallings and Brown (2012) presented a data security theory based on five key aspects which are argued to be essential. All of the aspects are argued to be true and verified for the CGI, based on the performed study. This implies that the defined key aspects should be taken into consideration when implementing a PM strategy in a computer game company.

Wayner (2014) argued that encryption as part of data security is outdated and not wanted nowadays, which based on the interviews as well as on the empirical data from the CLS has been shown to be false for the CGI and their customers. Even though some people argue that it is useless, it has been shown to be a demand from the customers, which in turn if it is implemented is argued to increase trust. Based on this the stated theory is argued to not hold for the customers in the CGI, which have an argued high level of technology knowledge. This implies that computer game companies should continue the use of encryption, for increased security as well as for increasing customers’ trust.

Yu (2011) as well as Chellappa and Sin (2005) emphasizes in their theories that the privacy is a big concern related to PM, which is confirmed for the CGI. In the investigated industry it is argued that the privacy concern mainly is related to data security, fear for data spread to third parties as well as the feeling of being monitored. This verified and further developed theory emphasizes that the importance of privacy implies that the three mentioned factors are especially important in the CGI and should be taken into consideration when implementing a PM strategy.

Related to data security and the handling of Big Data in combination with PM a theory, based on three aspects to consideration, was developed. The theory emphasizes that companies implementing or modifying a PM strategy, should emphasize the “feeling of being monitored”, “data security” as well as “fear for data spread”.

Loyalty and Trust

Regalado (2014) emphasized that a decrease of trust implies decreased brand reputation, which has been shown to be correct in the CGI, based on the investigation of the industry and based on several cases. The verification of this theory implies that computer game companies should be careful with actions that may affect the trust. This in turn makes up for a large part of the work as a whole, since trust is related to PM and the brand reputation is critical for the companies.

The five factor model by Wirtz et al. (2007) defining factors important for customers to perceive trust has been shown to be correct for the CGI, based on empirical data from the CLS. Since the theoretical aspects are shown to be true, it implies that companies in this industry should take them into consideration and as mentioned above, trust is important to maintain high.

The modern circular model related to customer’s decision journey by Court et al. (2009) is argued to be true for the CGI, mainly based on the high importance of putting resources into the post purchase experience to gain loyalty as well as the recommendation to use a pull
marketing strategy more. Customers’ willing to purchase as well as the loyalty itself is related to PM, which makes this new decision journey model useful. The verified model emphasizes an approach highlighting the importance of post purchase actions as well as how important loyalty can be. This implies that computer game companies can use this model as a backbone for their PM strategy, which in turn for example emphasizes a more pull focused marketing strategy.

The importance of trust and loyalty for PM has been shown in this study, and the above verified theories can be used as a backbone for the implementation of a PM strategy in a computer game company.

**Personalized Marketing**

Savadkoohi (2012) argued that the problem related to unwillingness to share data used for personalization can be partly or fully solved by being transparent with the stored data, which based on the performed case study is argued to be true for the customers in the CGI. The verification of this theory for the CGI implies that this factor can be used as a solution to the unwillingness of sharing personal data and to increase the trust and loyalty.

Tam and Ho (2006) and Sujan et al. (1992) emphasizes that one of the most critical aspects related to PM is relevance of the content, increased relevance implies a more positive perception of the offer. This theory is argued to be partly correct for the CGI, but too relevant and personal offers can decrease the positive perception due to triggering of the feeling of being monitored. The inverted u-curve theory by Alidoost and Lärkert (2011) is based on this argued to be verified for the CGI, while the theories by Tam and Ho as well as by Sujan et al. is partly verified.

This implies that computer game companies should keep the importance of finding a good balance in mind, which is a main aspect related to PM in general as well as in the CGI.

**5.3. Empirical Contribution**

As the final results of this recommendative research this chapter presents recommendations to companies in the CGI. In the introduction, Chapter 1, the coming sales paradigm within the CGI was described, which in turn was the background to this thesis. Partly because of the found problem related to too low prices for games, the paradigm shift towards a sale approach based on a full in-game shop is recommended to go towards.

1. **Computer game companies should adapt to the paradigm based on full in-game shops by implementing a discrete in-game shop.**

The attitude for an in-game shop was shown to be positive based on the CLS results, and most of them emphasized that it has to be discrete. It should however be taken into consideration that some perceives it as negative, based on which it should be performed with especially high level of discreteness to not disturb those who do not want it. The possibility to
hide it is recommended to be implemented. These empirical contributions in the form of recommendations to companies in the CGI makes up for the final addressing of the main objective, and is based on the findings from addressing the four sub objectives as well as answering the two research questions.

2. **Computer game companies should strive for collecting much data about the customer and put a lot of effort into the data analysis.**

Since the major problem related to an in-game shop is to satisfy the customers and not disturb them, it has to be discretely implemented, which in turn has been shown to be able by providing the customer with relevant offers, besides from making it visually discrete. Personalization makes offers relevant and increased data collection and tracking improves the relevance further. Based on this companies in the CGI should collect much data about the customers and analyze it well.

3. **Computer game companies should make the customer aware of how they get additional value and improved service by agreeing to share personal data and letting the companies collect, store and analyze it.**

However it should be observed that several parts of this investigation emphasized the problems that can occur by performing too much personalization, namely that customers lose loyalty due to the feeling of monitoring and the fear for data spread. At first, explicit information about the additional value personalization can offer the customers may increase the limit for how much personalization and data collection that is fine, due to the fact that they understand why the data collection is needed. Secondly, since the computer game customers has a high level of technology and security knowledge, they should be provided with explicit information related to which security technologies that are used. Thirdly, sufficient technologies used for transmission and storage of data should be used, otherwise the explicit information will decrease customers trust rather than increase it.

4. **Computer game companies should provide the customers with explicit information about technologies used for securing the collected data and with simple contracts describing what the data is and is not used for.**

Even though it is argued that some of the common security technologies are able to break, it will provide the customer if faith into that the customer has done as much as possible to secure the data, which in turn increases trust. As identified all data cannot be encrypted with sufficient safety, due to the need for quick access. Based on this it is argued to be transparent with this information and explain why, as well as provide the customers with information related to how it is secured using other techniques. However it should be taken into consideration that to explicit data may be harmful, since it may be valuable to a hacker who tries to reach the data. Related to the transparency it is based on the investigation and related to EU regulations recommended to provide the customers with knowledge about which data is used and what it is used for. Further on the data should for the customer be able to modify
or delete to maintain high privacy. Related to the trust as well as to the transparency and interaction by the customers, it is based on the performed investigation argued to be beneficial to let the customers decide which data is used for personalization as well as where such offers are shown.

5. **Computer game companies should use efficient, well known, best practice and secure technologies for secured data transmission as well as data storage.**

As identified in the investigation there exist several different encryption techniques which are built upon different technical and mathematical approaches. Even though all data is not encrypted, the encrypted data should be secured with a safe technique. It is based on the investigation argued that AES encryption with sufficient amount of bits for the required time of secure storage should be used. AES is not built upon a probably hard mathematical problem, but a complex bit shifting technique which is argued to be safe. This is a standard well known technique, which in case of a crisis can be argued as being the best known technique, implying that the negative impact on the trust is minimized. It is argued to be one of the best practices known today.

6. **Computer game companies should implement a, with the company's image, well aligned loyalty program for increasing customer loyalty and improve cross data collection.**

The investigation has further showed that loyal customers tend to share more data, which in turn makes the personalization process easier and more accurate. The explicit information is argued to increase loyalty due to increased trust, but it is further recommended that computer game companies should adopt loyalty program in similarity with the grocery store industry as well as the travel and hospitality industry. Since a loyalty program has been shown to increase the possibility of collecting data from different sources and merge it together, it indirectly simplifies the personalization by creating an overall account for the customer. Further on the increases loyalty has several other benefits since it may directly lead to increased willing to purchase. Since customers in the CGI has been shown to be conservative and demands high quality of services and products, the loyalty program has to be aligned with the image of the company. Based on this, the actions used for earning “loyalty points” should be serious actions that cannot be performed by cheating, while the earned benefits also should be serious products which not should provide the customer with unique and exclusive content that affects the game experience and cannot be bought by all players.

7. **Modification or implementation of a personalized marketing strategy in computer game companies should keep the level of personalization on an acceptable level, not irrelevant and not too personal.**

The PM strategy in general used by computer game companies should take the u-curve into account. Marketing is perceived as positive if it is personal but not too clearly based on gathered data. The specific borders are not fully investigated in this study, but as performed in this study it is recommended to continuously perform customer investigations for
analyzing how the marketing is perceived. As identified three relevant aspects to take into consideration when implementing or modifying a PM strategy are data security, the feeling of being monitored as well as the fear of data spread. Data security as well as the fear for data spread is taken into consideration above, but the feeling of being monitored is argued to be linked to how personalized the marketing is. Further on the investigation has shown that data from different sources is valuable, based on which it is recommended to store customer data from online as well as offline actions. This in order to get a broader image of the customer, for further more accurate and personalized marketing. Still all collected data and the, by analysis created, results should not be used in such way that customers feel monitored.

8. Computer game companies should focus their marketing strategy towards pull to make the brands more know which in turn implies that personalized marketing can be used even more, by performing cross marketing and cross selling.

As identified cross functions are beneficial to combine with PM, but is hard to use if the brand awareness is low since the offers can be perceived as irrelevant. The investigation further showed that the CGI uses a marketing strategy focused on push rather than pull. Since pull marketing was shown to be able to increase the brand awareness computer game companies should put more resources into making their brand and product brands more known to more of the customers.

5.4. Ethical and Sustainability Aspects

The empirical and theoretical contributions of this study touches several subjects related to ethics as well as sustainability, which both are related to each other. As described by Chen, Olhager and Tang (2012, p. 158), sustainability can be divided into three categories, namely “social”, “economical” and “ecological”. The economical part is related to for example bribing bribery and corruption, investment in infrastructure, creating jobs and generating sales and profit (The OECD Sustainable Manufacturing Toolkit, 2011, p. 4). The social part is related to for example respecting human rights, complying with law, good working conditions and good community relations (ibid, p. 4). The ecological part is related to for example protecting biodiversity, minimizing waste and emission and using energy and resources efficiency (ibid, p. 4).

One subject related to ethical work and the results of this study is the transparency possibly offered by the computer game companies to the customers, which involves privacy policies. As identified EU regulations demand transparent use of personal data, and it should by a customer be able to edit or delete the data stored by companies, which also was demanded by the customers. Further on it was shown that people demand transparent and simple policy contracts related to how their personal data is shared with other companies. On the one hand it is social sustainable to follow the law and use contracts, even though the contracts are long, complex and hard to read. On the other hand it is argued to not be ethically correct, since most people will neither understand nor read the contracts, implying that the companies can obey that customers gets aware of the actual meaning of it, but still follow the law. In order
to, as a computer game company, be ethical correct it is recommended that they should use simple contracts or certify the policies by third party companies, which ensures that the policy does not contain odd aspects.

Related to the transparency is the explicit information about the use of personalization in general, which can be linked to the laws regulating the explicit information about cookies. By providing explicit information about the use of cookies, it has become more or less accepted in the CGI. If a similar approach is used for personalization it is argued to imply, from a long term perspective, increased trust which implies increased willingness to share data, which in turn can be used for more accurate PM. This is argued to be social sustainable since it increases the community relations and is related to fair relationships with the customers.

The positive aspects of personalization can be linked to economical as well as ecological sustainability due to the hopefully decreased amount of irrelevant offers. Such that does neither provide the customer with any value nor result in increased revenue for the company. Since PM is argued to be more accurate and relevant that regular marketing, it is argued that the amount of “wasted” marketing offers and marketing costs is decreased. From an ecological perspective the decreased amount of needed marketing offers to reach the same number of customers, it is argued that the impact on the environment is decreased. The same reasoning holds from an economical perspective, since it decreased the needed amount of needed money spent on marketing, which in turn increases revenue. For the CGI it should however be observed that most of the marketing is performed online, which may imply less difference of environment impact.

As briefly mentioned it was identified during the literature study that the cost of acquiring new customers is high, implying that it is economical sustainable to work for keeping customers. This was during the study shown to be performed by increasing customer loyalty. Based on this it is argued that the implementation of a loyalty program is economical sustainable, since the revenue is increased due to the decreased costs of acquiring new customers.
6. Conclusion

This chapter presents a conclusion of the findings in this study and describes how they are aligned with the stated objectives and research questions of the thesis. Further on the limitations of the study are presented, based on which recommendations for further research is provided.

As described in Chapter 1.1 the identified problem is based on the fact that no direct guidelines for how to adapt to PM in the CGI exists. To solve this problem, the main objective presented in Chapter 1.2 was to provide a recommendation for companies in the CGI related to how they should use PM. The work contains several limitations which have been used related to the set delimitations as well as the identified results. Based on these several subjects are recommended to investigate in future research, in order to get additional value and knowledge for the investigated area.

6.1. Summary

As an initializing part of the summary, the strive to fulfill the four sub objectives and the main objective is addressed, which in turn is based on the answers to the two research questions. O1 and O2 were in this study addressed first, since it makes up for the basis for answering RQ1, which in turn made it possible to address O3. This led to the possibility of answering RQ2 which addresses O4. The addressing of the sub objectives led to the main objective.

O1: Identify and analyze industries, other than the CGI, that successfully have implemented PM as well as identify a general PM approach.

O1 is addressed by finding and analyzing three industries in the form of a benchmark, namely:
- Grocery store industry
- Travel and hospitality industry
- Online gambling industry

Based on the benchmark the identified general approach was emphasizing:
- The use of cross functions
- The strive for high customer loyalty
- The importance of high trust

O2: Analyze the CGI from a customer relation perspective, focusing on privacy and integrity.

O2 is addressed by identifying the following major aspects in the CGI:
- Level of technology knowledge is high
- Brand awareness is low
• Loyalty is high
• Transparency and security related information is demanded

**RQ1:** “Which are the main aspects differing the CGI from the other identified industries?”

Based on the findings from the addressing of O1 and O2 the answer to RQ1 is identified as: “The level of technology knowledge, brand awareness and customer loyalty.”.

**O3:** Identify aspect differing the identified and investigated industries and the CGI related to customer relations and PM.

O3 is addressed by the answering of RQ1, namely by identifying the following aspects differs between the investigated role model industries and the CGI:
• Level of technology knowledge
• Brand awareness
• Loyalty

**RQ2:** “How should the identified solution of PM be modified to match the CGI?”

Based on the findings from the addressing of O1 and the answer to RQ1, the answer to RQ2 is: “Pull marketing should be used to increase brand awareness, after which cross functions should be used. Secure and well known data security should be used, and the use of them should be described for the customers. The storing and use of personal data should be transparent and the additional value given to the customer by using PM should be explicit.”.

**O4:** Modify the identified general approach to match the CGI.

O4 is addressed by the answering of RQ2, namely by identifying how the general approach of PM should be modified to match the CGI, as presented below:
• Use pull marketing
• When high brand awareness is achieved, use cross functions
• Use secure and well known data security techniques
• Be transparent with the used techniques
• Be transparent with the used personal data and the use of it

**Main objective:** Provide a recommendation of how companies in the CGI should implement PM.

The main objective is addressed by providing computer game companies with the empirical contributions of this study, in the form of recommendations as presented below:
• Implement a discrete in-game shop
• Collect much personal data and analyze it well
• Describe the value of PM for the customers
• Use secure and well know data security techniques
• Describe the use of data security techniques for the customers
• Implement a loyalty program
• Identify and use a balanced level of personalization
• Strive for a pull focused marketing strategy

Below are the addressing of the objectives and answers to the research questions further described and linked to the results of this study.

As part of addressing sub objective O1, related to finding and analyzing other industries that uses PM, the characterizing factors for the role model industries were identified. At first brand awareness was identified as an interesting factor due to the fact that using PM, cross selling and cross marketing can be performed more efficiently. Secondly, customer loyalty was identified as a factor related to PM. Based on the findings it was shown to be related to trust and in turn making the PM approach easier due to increased willingness to share data amongst the customers. The third aspect argued to affect how PM can be used is cross functions. Due to the relatively high brand awareness, all the investigated industries could perform cross functions in different ways.

Based on the identified characterizing aspects as well as the role model industry investigation, a general approach for PM was developed. It was used as a basis modified to match computer game companies. This makes up for the second part of addressing sub objective O1. The identified general approach emphasizes that CRM should be a clear part of the PM work since it can be used as a source of data as well as that itself gets more data. High customer loyalty is needed to make customers willing to share data, which in this approach can be achieved by implementing a loyalty program. Further on cross functions should also be used, since it using the personalization approach can be very accurate and beneficial due to the high relevance. At last, cross channel sources should be used instead of multi-channel or single channel sources, implying that data is gathered from a lot of different channels, but merged and analyzed together, which leads to enriched and deep knowledge.

Sub objective O2, to analyze the CGI focused on privacy and integrity, was addressed by analyzing the CGI, which is an industry with relatively low brand awareness and low use of cross functions. The technology knowledge amongst the customers is identified to be higher than the commonage and many customers demand much information from the companies. The customers were further shown to be conservative, implying that general modifications related to the games or how they are sold is not perceived positively in the beginning. Related to the high technology knowledge and wanted information is transparency, especially related to data security, which was shown to be high. The customers want explicit information about how their data is used, what is stored about them as well as how it is kept safe. Personalization in general is by many perceived as positive, but for the rest the feeling of being monitored, risk for data spread as well as the security of the data is emphasized. It was indicated that push marketing was more common than pull marketing. At last the loyalty in the industry was shown to be relatively high, many players interacts with the company, purchases games from the same company during several years and are satisfied with the delivered service and quality.
Based on the investigation of the CGI as well as of the role model industries, sub objective O3, to find aspects differing the role models industries from the CGI, could be addressed by answering RQ1, namely which the main differing aspects are. At first, brand awareness was shown to be low in the CGI but relatively high in all role model industries. Secondly, loyalty was shown to be higher in the CGI than in a general company in the role model industries. Thirdly, cross functions are more used in the role model industries than in the CGI. At last, the level of technology knowledge was identified to be higher in the CGI than in the role model industries, since these were argued to consist of customers who can be thought of as the commonage. Further on the working area was shown to be almost exclusively online for the CGI, while it for the role model industries was more diverse.

Based on the identified differing aspects related to PM, the identified general approach of PM for the role model industries could be modified to match computer game companies. This implies that RQ2, to find how the identified general solution should be modified, can be answered which in turn addressed sub objective O4. One of the main factors to take into consideration is the low brand awareness, which implies that cross functions should not be used. Based on this the general approach that modified to that a pull focused marketing strategy should be used in order to increase brand awareness before cross functions are used. To meet the CGI customers’ demand for high transparency and much information, secure data security techniques should be used and information related to it should be provided to customers. Further on the stored and used personal data should be shown to the customers and described how and for what it is used. To make the conservative customers more willing to use personalization and share data, the benefits of PM should be explicitly described. The theory that the level of personalization has to be well weighted in order to not be irrelevant and not be perceived as monitoring does not have to be modified.

When all the four sub objectives were addressed and the two research questions were answered, the main objective was addressed by developing empirical contributions, in the form of recommendations to computer game companies related to how the should implement or modify a PM strategy. Related to the problem formulation regarding the new paradigm of full in-game shops, it is recommended that computer game companies should use it, in which personalized offers can be showed if they are discrete and relevant. The personalization is improved by much data, based on which it is recommended that the companies should use a multi-channel approach for collecting such data, and further on put a lot of resources into analyzing it. Conservative customers can be handled by explicitly describe the earned value gained by providing the company with data that can be used for personalization. The high level of technology knowledge can be dealt with by using secure techniques, and describe how these are used to protect the data. This transparency holds for how the data is used as well, based on which it is argued to use simple and clear policies made for being able to read by everyone. In a longer perspective the transparency may imply a general raise of the acceptance boundary of data gathering and use in the industry, as it did with the use of cookies. Further related to transparency the stored data should not only be visible for the customers, but also editable or deletable. Since increased loyalty has been shown to make customers more willing to share data, it is recommended that the companies should
implement a loyalty program, which should be well aligned with the image of the company. As one of the major theories related to PM, it is argued that the level of personalization has to be well considered, based on which it is argued that companies always should take it into consideration when using PM. At last computer game companies should adopt a more pull focused marketing strategy to improve the brand awareness.

Based on the study as a whole, theoretical contributions could be made, which can be divided into theories related to secure Big Data handling, loyalty and personalization in general. Different authors described several aspects to take into consideration in order to secure data and make the customers feeling safe, which all were verified as true for the CGI. It was argued that encryption technique is outdated, but this is argued to be false since the customers demand the use of such security techniques. Based on the findings a theory based on three aspects to take into consideration when implementing or modifying a PM strategy in a computer game company was developed. It emphasizes that “data security”, the “feeling of being monitored” as well as the “fear for data spread” has to be taken into account in order to satisfy the customers and improve the willingness to share data. Related to loyalty it was verified that loyalty, trust and satisfaction is connected, but the actual directions of the relationships could be identified. The new customer’s decision journey could be verified as true for the CGI, which emphasizes the benefits of a pull marketing strategy and describes how loyalty increases the number of purchases. Related to PM in general theories related to the benefits of transparency was verified for the CGI. Several theories emphasizes that the level of personalization has to be well considered, which was verified and in turn falsifies theories emphasizing that the highest level of personalization is to strive for.

The empirical contribution is argued to imply several ethical as well as sustainable correct approaches, out which several are based on the fact that PM in general is focused on relevant offers for specific customers, which minimizes the amount of “wasted” irrelevant offers.

**6.2. Further Research and Limitations**

The recommendations for future research are based on the performed research and will cover areas of interest of related subject as well as parts of this investigation that can be performed more thoroughly to further increase the quality of the results. The identified limitations and recommendations for further research are presented below, followed by further investigation of the single aspects. Every limitation is followed with sub bullet points describing the recommendations for further research to handle the specific factor.

- A case study is used with limits the generalizability outside the CGI
  - Performing a similar case study in another industry
  - Increase the number of investigated role model industries
- The case company may not be generalizable for the whole CGI
  - Perform similar case studies with other computer game companies
- The empirical recommendations are not verified to be true
  - Perform a study to investigate the effect of the recommendations
• Subjects related to the main area of PM in the CGI has not been further investigated or analyzed
  o Investigate the pricing of products in the CGI
  o Investigate the differences between the use of personalization and customization in the CGI, such as sale focused more on bundle packs
• The empirical contribution in the form of recommendations are general
  o Identify the specific most beneficial level of personalization
  o Develop a strategy for the implementation of an in-game shop
  o Develop a strategy for the implementation of a loyalty program
  o Identify the most secure and well known data security techniques

Following is the analysis of every single limitation and the corresponding recommendations for further work.

Since PM is a relatively thoroughly investigate area outside the CGI, this study aimed to use and concretize the favorable approaches used in other industries to customize it for this particular industry. The findings of useful approaches of performing PM are focused on the application to the CGI, but still several of the findings may be useful for other industries. Further research can within this area be built upon the general findings in this work but focus on another industry. Since, as described by Jen-Hung and Shyu (2009) and White (2008), the negative aspects of personalization is relatively uninvestigated, the main focus of the work has been aimed towards potential risks and their underlying factors, such as Big Data databases and CRM systems.

Even though the quality of this study is aimed to be high, further validity, internal as well as external, could be achieved by building upon this study but investigate more industries. This in order to get an even more general and valid picture of how PM can be used in the most favorable way. This study delimited the number of investigated role model areas to three, and an increase of this number is argued to increase the overall quality in further research.

As described, this study is partly based on an investigation of the CGI. However this part was mainly performed within one specific computer game company, Paradox Interactive. This delimitation implies two possible subjects for further research. At first, another study including and weighting together input from different companies within the CGI would probably give a more detailed and generalizable picture of the industry, which is recommended to perform in a future work. Secondly the chosen company, Paradox Interactive, has as described customers worldwide, but it could be argued that the customers they are focusing on are not generalizable to all computer game customers in the world. This negative part related to the generalizability is however as stated directly connected to the choice of case study as main research method. A future research could be performed on another more generalizable company, which may result in a more valid and generalizable result for the whole industry.
As described, the number of respondents to the survey was high but the number of interviewees can be argued to be relatively low, which however was supported by the fact that all persons recommended from the previous interviews were interviewed. A future study could however increase the number of interviewees to get a clearer picture of how the perceptions differ between different people as well as between different departments. As described, the interviews were mainly performed with employees at the company, while the quantitative approach, the survey, was focused on the customers. To get a more diverse and fuller picture the reversed may be interesting to investigate, to perform interviews with computer game customers as well as a survey for the employees. This study aimed to describe what, based on the findings, the identified approach for using PM, focused on data security in the CGI is. This study reached the aims, but the identified approach was not tested. A future research in this subject is recommended to further investigate if and how well the described approach and recommendations works in the CGI.

Based on the background of this thesis, the expected paradigm shift towards full in-game shops, it has during the investigation been shown that the pricing in this industry is problematic. The use of in-game shops may, as has been identified, make it more beneficial to focus the income on DLC and lower the prices of the main product. This is related to this paradigm shift as well as PM, but has not been investigated in this study due to the set delimitations. It is argued that such investigation should be interesting and valuable if and when the new paradigm shift is done. As shown in the literature study it is by several authors argued to be a clear difference between customization and personalization. Personalization has been a major part of this study, while customization has not been further investigated since it is related to sales rather than marketing. However it is linked to the possibilities of the new paradigm, which as mentioned above may imply a possible change of sale strategy, to a more DLC focused one. It is argued that customizable packages of games and DLC may be interesting due to the in-game approach, in which it is emphasized to be useful with a DLC focused approach. The investigation of customizable bundle packages is argued to be a valuable subject to investigate further. Related to bundle packs of DLC, in-game shops as well as PM, is personalized price setting, which was emphasized as a future possibility when using increased personalization in general. This subject was not investigated further in this study, but is argued to be valuable to analyze due to the mentioned connection with the focus areas of this work.

As previously described the main area of this investigation focused on, on a general level, give advice related to how computer game companies should adapt to PM. The findings have resulted in recommendations as the final outcome. However it should be observed that the recommendations and findings in general are not specifying concrete solutions, but general advices. Based on this it is argued that several future studies can be performed to perform an in-depth investigation of respectively general subject included in the empirical contribution. This involves at first a concrete investigation of how a full in-game shop should be developed, focusing on the high level of discreteness and the use of personalization as main marketing approach. Secondly, the actual implementation of a loyalty program focused on the alignment with the company has to be further investigated. At last it is recommended to
further investigate storage of different kinds of Big Data focused on personal data, this to investigate which parts that can be fully encrypted in contrast to which has to be quickly available all the time.
7. Appendix

This chapter contains supplementary data to the study.

7.1. Customer Survey

7.1.1. General Customer Experience

Total number of responses: **7938**

<table>
<thead>
<tr>
<th>Questions, options</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. What´s your age?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 0-15</td>
<td>397</td>
<td>5%</td>
</tr>
<tr>
<td>2. 16-26</td>
<td>5318</td>
<td>67%</td>
</tr>
<tr>
<td>3. 26-35</td>
<td>1826</td>
<td>23%</td>
</tr>
<tr>
<td>4. 36-45</td>
<td>318</td>
<td>4%</td>
</tr>
<tr>
<td>5. 46-55</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td>6. 55+</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>2. Where do you live?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. EU</td>
<td>3969</td>
<td>50%</td>
</tr>
<tr>
<td>2. North America</td>
<td>3096</td>
<td>39%</td>
</tr>
<tr>
<td>3. South America</td>
<td>238</td>
<td>3%</td>
</tr>
<tr>
<td>4. Asia</td>
<td>238</td>
<td>3%</td>
</tr>
<tr>
<td>5. Africa</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>6. Oceania</td>
<td>318</td>
<td>4%</td>
</tr>
<tr>
<td>7. Other</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td><strong>3. What´s your gender?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Male</td>
<td>7700</td>
<td>97%</td>
</tr>
<tr>
<td>2. Female</td>
<td>159</td>
<td>2%</td>
</tr>
<tr>
<td>3. Other</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td>----------------</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

**4. How did you find Paradox Interactive?**

<table>
<thead>
<tr>
<th>1. Twitter</th>
<th>0</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Twitch</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3. Friend</td>
<td>1429</td>
<td>18%</td>
</tr>
<tr>
<td>4. Youtube</td>
<td>1111</td>
<td>14%</td>
</tr>
<tr>
<td>5. Internet forums</td>
<td>1905</td>
<td>24%</td>
</tr>
<tr>
<td>6. Playing similar games</td>
<td>2064</td>
<td>26%</td>
</tr>
<tr>
<td>7. Reddit</td>
<td>556</td>
<td>7%</td>
</tr>
<tr>
<td>8. Gaming Media</td>
<td>476</td>
<td>6%</td>
</tr>
<tr>
<td>9. Gaming Outlets</td>
<td>318</td>
<td>4%</td>
</tr>
<tr>
<td>10. Advertisement</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>11. Facebook</td>
<td>79</td>
<td>1%</td>
</tr>
</tbody>
</table>

**5. What year did you get your first game from Paradox Interactive?**

<table>
<thead>
<tr>
<th>1. 1999-2005</th>
<th>1270</th>
<th>16%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. 2006-2011</td>
<td>3096</td>
<td>39%</td>
</tr>
<tr>
<td>3. 2012-</td>
<td>3572</td>
<td>45%</td>
</tr>
</tbody>
</table>

**6. How happy are you overall with Paradox Interactive games?**

<table>
<thead>
<tr>
<th>1. Very satisfied</th>
<th>6430</th>
<th>81%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Mostly satisfied</td>
<td>1270</td>
<td>16%</td>
</tr>
<tr>
<td>3. Neutral</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>4. Not satisfied</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>5. Very unsatisfied</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>6. Other</td>
<td>238</td>
<td>3%</td>
</tr>
</tbody>
</table>

**7. How happy are you overall with Paradox Interactive?**
1. Very happy | 3334 | 42%
2. Happy | 3413 | 43%
3. Neutral | 794 | 10%
4. Unhappy | 159 | 2%
5. Very unhappy | 0 | 0%
6. Other | 238 | 3%

8. Which are the main sources used for information about Paradox Interactive Games?

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paradox Interactive Forum</td>
<td>1826</td>
<td>23%</td>
</tr>
<tr>
<td>2. Steam Hub</td>
<td>476</td>
<td>6%</td>
</tr>
<tr>
<td>3. Reddit</td>
<td>3334</td>
<td>42%</td>
</tr>
<tr>
<td>4. Social Media</td>
<td>953</td>
<td>12%</td>
</tr>
<tr>
<td>5. Gaming media</td>
<td>318</td>
<td>4%</td>
</tr>
<tr>
<td>6. Youtube</td>
<td>556</td>
<td>7%</td>
</tr>
<tr>
<td>7. Twitch</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>8. Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

9. When do you usually buy games?

<table>
<thead>
<tr>
<th>Time</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pre-order</td>
<td>1349</td>
<td>17%</td>
</tr>
<tr>
<td>2. During release week</td>
<td>1588</td>
<td>20%</td>
</tr>
<tr>
<td>3. during release month</td>
<td>1111</td>
<td>14%</td>
</tr>
<tr>
<td>4. First sale</td>
<td>1985</td>
<td>25%</td>
</tr>
<tr>
<td>5. Once it has been out for a while</td>
<td>1270</td>
<td>16%</td>
</tr>
<tr>
<td>6. Other</td>
<td>635</td>
<td>8%</td>
</tr>
</tbody>
</table>

10. How much do you spend on games yearly?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 0-20$</td>
<td>238</td>
<td>3%</td>
</tr>
<tr>
<td>2. 20-40$</td>
<td>635</td>
<td>8%</td>
</tr>
</tbody>
</table>
3. 40-80$  
4. 80-150$  
5. 150-250$  
6. 250$+  

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-80$</td>
<td>1508</td>
<td>19%</td>
</tr>
<tr>
<td>80-150$</td>
<td>2223</td>
<td>28%</td>
</tr>
<tr>
<td>150-250$</td>
<td>1746</td>
<td>22%</td>
</tr>
<tr>
<td>250$+</td>
<td>1588</td>
<td>20%</td>
</tr>
</tbody>
</table>

11. Where do you usually buy your games?

<table>
<thead>
<tr>
<th>Channel</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam</td>
<td>6985</td>
<td>88%</td>
</tr>
<tr>
<td>Paradox Interactive Shop</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Gamers Gate</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td>Humble Bundle</td>
<td>159</td>
<td>2%</td>
</tr>
<tr>
<td>Amazon</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td>Physical</td>
<td>238</td>
<td>3%</td>
</tr>
<tr>
<td>GMG</td>
<td>79</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>318</td>
<td>4%</td>
</tr>
</tbody>
</table>

12. What packaging do you prefer?

<table>
<thead>
<tr>
<th>Packaging</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bundles</td>
<td>2143</td>
<td>27%</td>
</tr>
<tr>
<td>Collectors Edition</td>
<td>1826</td>
<td>23%</td>
</tr>
<tr>
<td>Standalone</td>
<td>3255</td>
<td>41%</td>
</tr>
<tr>
<td>Pre-order</td>
<td>476</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>238</td>
<td>3%</td>
</tr>
</tbody>
</table>

13. What kind of pre-order content do you prefer?

<table>
<thead>
<tr>
<th>Content Type</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique content</td>
<td>1588</td>
<td>20%</td>
</tr>
<tr>
<td>% of full price off</td>
<td>4604</td>
<td>58%</td>
</tr>
<tr>
<td>Early access</td>
<td>1191</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>556</td>
<td>7%</td>
</tr>
</tbody>
</table>

14. Where do you prefer to get extra downloadable content?
<table>
<thead>
<tr>
<th></th>
<th>Questions, options</th>
<th></th>
<th>%</th>
<th></th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Retailer</td>
<td></td>
<td>3890</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>In-game store</td>
<td></td>
<td>2937</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Other</td>
<td></td>
<td>1111</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Do you play more games on mobile devices now compared to one year ago?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Yes</td>
<td></td>
<td>1429</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>No</td>
<td></td>
<td>6509</td>
<td>82%</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Would you be interested in playing core strategy games on mobile devices?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Yes</td>
<td></td>
<td>3175</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>No</td>
<td></td>
<td>4763</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Do you prefer free-to-play or premium mobile games?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Free-to-play</td>
<td></td>
<td>1985</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Premium</td>
<td></td>
<td>2223</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>No reference</td>
<td></td>
<td>3731</td>
<td>47%</td>
<td></td>
</tr>
</tbody>
</table>

7.1.2. Customer Loyalty

Total number of responses: 4221

<table>
<thead>
<tr>
<th>Questions, options</th>
<th>%</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>6%</td>
<td>235</td>
</tr>
<tr>
<td>16-25</td>
<td>54%</td>
<td>2298</td>
</tr>
<tr>
<td>26-35</td>
<td>29%</td>
<td>1222</td>
</tr>
<tr>
<td>36-45</td>
<td>8%</td>
<td>354</td>
</tr>
<tr>
<td>46-55</td>
<td>2%</td>
<td>89</td>
</tr>
<tr>
<td>55+</td>
<td>1%</td>
<td>38</td>
</tr>
<tr>
<td>answered question</td>
<td></td>
<td>4236</td>
</tr>
</tbody>
</table>
2. Where do you live?

<table>
<thead>
<tr>
<th>Region</th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>55</td>
<td>2307</td>
</tr>
<tr>
<td>North America</td>
<td>31</td>
<td>1317</td>
</tr>
<tr>
<td>South America</td>
<td>3</td>
<td>105</td>
</tr>
<tr>
<td>Asia</td>
<td>4</td>
<td>154</td>
</tr>
<tr>
<td>Africa</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Oceania</td>
<td>5</td>
<td>197</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>3</td>
<td>142</td>
</tr>
<tr>
<td>answered question</td>
<td></td>
<td>4236</td>
</tr>
</tbody>
</table>

3. What’s your gender?

<table>
<thead>
<tr>
<th>Gender</th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>98</td>
<td>4135</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>63</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>answered question</td>
<td></td>
<td>4236</td>
</tr>
</tbody>
</table>

4. Which year did you get your first game from Paradox Interactive?

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2005</td>
<td>26</td>
<td>1108</td>
</tr>
<tr>
<td>2006-2014</td>
<td>71</td>
<td>3013</td>
</tr>
<tr>
<td>2015-</td>
<td>2</td>
<td>96</td>
</tr>
<tr>
<td>I do not have any game from Paradox Interactive yet</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>answered question</td>
<td></td>
<td>4236</td>
</tr>
</tbody>
</table>

5. How much do you spend on games from Paradox Interactive yearly?

<table>
<thead>
<tr>
<th>Range</th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20$</td>
<td>8</td>
<td>341</td>
</tr>
<tr>
<td>21-40$</td>
<td>25</td>
<td>1044</td>
</tr>
<tr>
<td>41-80$</td>
<td>38</td>
<td>1620</td>
</tr>
<tr>
<td>81-150$</td>
<td>22</td>
<td>932</td>
</tr>
</tbody>
</table>
6. In average, how many hours do you play per DAY?

<table>
<thead>
<tr>
<th>Hours</th>
<th>Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>31%</td>
<td>1308</td>
</tr>
<tr>
<td>2-4</td>
<td>45%</td>
<td>1904</td>
</tr>
<tr>
<td>4-8</td>
<td>20%</td>
<td>832</td>
</tr>
<tr>
<td>8+</td>
<td>5%</td>
<td>192</td>
</tr>
</tbody>
</table>

7. In average, how many hours do you spend on the Paradox Forum per WEEK?

<table>
<thead>
<tr>
<th>Hours</th>
<th>Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>43%</td>
<td>1840</td>
</tr>
<tr>
<td>2-4</td>
<td>29%</td>
<td>1227</td>
</tr>
<tr>
<td>4-8</td>
<td>14%</td>
<td>597</td>
</tr>
<tr>
<td>8+</td>
<td>14%</td>
<td>572</td>
</tr>
</tbody>
</table>

8. How do you feel about in-game shops where DLCs and expansion packs can be bought?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>11%</td>
<td>444</td>
</tr>
<tr>
<td>Positive, as long as it is discrete</td>
<td>52%</td>
<td>2193</td>
</tr>
<tr>
<td>Negative</td>
<td>24%</td>
<td>1005</td>
</tr>
<tr>
<td>No opinion</td>
<td>14%</td>
<td>594</td>
</tr>
</tbody>
</table>

9. What’s your attitude towards a loyalty program? A bonus system would imply that features can be achieved by being an active player, being active in the forum, buy products etc.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very positive</td>
<td>20%</td>
<td>829</td>
</tr>
</tbody>
</table>
### 10. How would you as a loyal customer want to be rewarded?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique cosmetic items in games</td>
<td>39%</td>
<td>1635</td>
</tr>
<tr>
<td>% off of full price</td>
<td>60%</td>
<td>2505</td>
</tr>
<tr>
<td>Early access</td>
<td>49%</td>
<td>2044</td>
</tr>
<tr>
<td>Unique forum features</td>
<td>20%</td>
<td>843</td>
</tr>
<tr>
<td>Free old games</td>
<td>37%</td>
<td>1540</td>
</tr>
<tr>
<td>Mentioned in credits</td>
<td>7%</td>
<td>307</td>
</tr>
<tr>
<td>Design in-game content</td>
<td>16%</td>
<td>681</td>
</tr>
<tr>
<td>Invitation to event</td>
<td>18%</td>
<td>764</td>
</tr>
<tr>
<td>Achievements in game</td>
<td>35%</td>
<td>1444</td>
</tr>
<tr>
<td>Inviting friends</td>
<td>17%</td>
<td>700</td>
</tr>
<tr>
<td>Buy full products</td>
<td>10%</td>
<td>414</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5%</td>
<td>208</td>
</tr>
<tr>
<td><strong>answered question</strong></td>
<td><strong>4160</strong></td>
<td><strong>4236</strong></td>
</tr>
</tbody>
</table>

### 11. How should features be earned in the bonus system? Choose as many options as you like, but please observe that inflation may decrease the value of every single action.

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>67%</td>
<td>2758</td>
</tr>
<tr>
<td>Posting in forum</td>
<td>36%</td>
<td>1465</td>
</tr>
<tr>
<td>Amount of playtime</td>
<td>61%</td>
<td>2524</td>
</tr>
<tr>
<td>General achievements</td>
<td>23%</td>
<td>953</td>
</tr>
<tr>
<td>Achievements in game</td>
<td>35%</td>
<td>1444</td>
</tr>
<tr>
<td>Inviting friends</td>
<td>17%</td>
<td>700</td>
</tr>
<tr>
<td>Relevant blog post</td>
<td>12%</td>
<td>510</td>
</tr>
</tbody>
</table>
12. Please rank the information provided to you about our products based on these factors

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>1 - Very bad</th>
<th>2 - Bad</th>
<th>3 - Neutral</th>
<th>4 - Good</th>
<th>5 - Very good</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>18</td>
<td>119</td>
<td>1017</td>
<td>2245</td>
<td>837</td>
<td>3.89</td>
</tr>
<tr>
<td>Relevance</td>
<td>6</td>
<td>43</td>
<td>745</td>
<td>2262</td>
<td>1180</td>
<td>4.08</td>
</tr>
<tr>
<td>Visual style</td>
<td>20</td>
<td>65</td>
<td>1019</td>
<td>2104</td>
<td>1028</td>
<td>3.96</td>
</tr>
</tbody>
</table>

answered question 4236

13. The loyalty part of this survey ends here. Do you want to continue with some general questions for an internal study?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>89%</td>
</tr>
<tr>
<td>No</td>
<td>11%</td>
</tr>
</tbody>
</table>

answered question 4236

14. How do you rank your own computer technology knowledge in relation to the average internet user?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Much higher</td>
<td>23%</td>
</tr>
<tr>
<td>Higher</td>
<td>49%</td>
</tr>
<tr>
<td>The same</td>
<td>23%</td>
</tr>
<tr>
<td>Lower</td>
<td>5%</td>
</tr>
<tr>
<td>Much lower</td>
<td>1%</td>
</tr>
</tbody>
</table>

answered question 3723
15. How much does who the DEVELOPER is affect your choice when buying a game?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>1 - Not at all</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 - Very Much</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>223</td>
<td>330</td>
<td>688</td>
<td>1492</td>
<td>990</td>
<td>3,72</td>
</tr>
</tbody>
</table>

answered question 3723

16. How much does who the PUBLISHER is affect your choice when buying a game?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>1 - Not at all</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 - Very much</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>371</td>
<td>768</td>
<td>1094</td>
<td>1073</td>
<td>417</td>
<td>3,11</td>
</tr>
</tbody>
</table>

answered question 3723

17. What is the most important factor for you when buying a game?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publishing company</td>
<td>2%</td>
<td>77</td>
</tr>
<tr>
<td>Developer studio</td>
<td>19%</td>
<td>724</td>
</tr>
<tr>
<td>Lead programmer</td>
<td>0%</td>
<td>14</td>
</tr>
<tr>
<td>Name of the title</td>
<td>1%</td>
<td>51</td>
</tr>
<tr>
<td>Cover illustration</td>
<td>0%</td>
<td>8</td>
</tr>
<tr>
<td>Tips and rumors</td>
<td>5%</td>
<td>186</td>
</tr>
<tr>
<td>Review scores</td>
<td>13%</td>
<td>482</td>
</tr>
<tr>
<td>If I can watch YouTubers/Streamers play the game</td>
<td>25%</td>
<td>939</td>
</tr>
<tr>
<td>User scores</td>
<td>12%</td>
<td>438</td>
</tr>
<tr>
<td>If my friends like the game</td>
<td>6%</td>
<td>233</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>15%</td>
<td>571</td>
</tr>
</tbody>
</table>

answered question 3723

18. What’s you attitude towards use of DRM protection for computer games?

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very positive</td>
<td>2%</td>
<td>86</td>
</tr>
<tr>
<td>Positive</td>
<td>8%</td>
<td>303</td>
</tr>
</tbody>
</table>
### 19. What’s your attitude towards sales offers made especially for you?

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very positive</td>
<td>17%</td>
<td>619</td>
</tr>
<tr>
<td>Positive</td>
<td>39%</td>
<td>1468</td>
</tr>
<tr>
<td>Neutral</td>
<td>32%</td>
<td>1195</td>
</tr>
<tr>
<td>Negative</td>
<td>8%</td>
<td>306</td>
</tr>
<tr>
<td>Very negative</td>
<td>4%</td>
<td>135</td>
</tr>
</tbody>
</table>

**answered question** 3723

### 20. How important is it for you to be able to set where personalized offers are showed?

<table>
<thead>
<tr>
<th>Importance</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very important</td>
<td>19%</td>
<td>707</td>
</tr>
<tr>
<td>Important</td>
<td>36%</td>
<td>1329</td>
</tr>
<tr>
<td>Neutral</td>
<td>36%</td>
<td>1328</td>
</tr>
<tr>
<td>Unimportant</td>
<td>7%</td>
<td>256</td>
</tr>
<tr>
<td>Very unimportant</td>
<td>3%</td>
<td>103</td>
</tr>
</tbody>
</table>

**answered question** 3723

### 21. Where are personalized offers ok?

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>61%</td>
<td>1984</td>
</tr>
<tr>
<td>Paradox Shop</td>
<td>58%</td>
<td>1879</td>
</tr>
<tr>
<td>In-game shop</td>
<td>49%</td>
<td>1593</td>
</tr>
<tr>
<td>Forum Website</td>
<td>49%</td>
<td>1593</td>
</tr>
<tr>
<td>Paradox Website</td>
<td>51%</td>
<td>1648</td>
</tr>
<tr>
<td>Game Website</td>
<td>35%</td>
<td>1114</td>
</tr>
</tbody>
</table>
### 22. Where do you prefer personalized offers the most?

<table>
<thead>
<tr>
<th>Option</th>
<th>%</th>
<th>Answered Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>42%</td>
<td>1374</td>
</tr>
<tr>
<td>Paradox Shop</td>
<td>11%</td>
<td>344</td>
</tr>
<tr>
<td>In-game shop</td>
<td>17%</td>
<td>551</td>
</tr>
<tr>
<td>Forum Website</td>
<td>13%</td>
<td>415</td>
</tr>
<tr>
<td>Paradox Website</td>
<td>6%</td>
<td>193</td>
</tr>
<tr>
<td>Game Website</td>
<td>2%</td>
<td>74</td>
</tr>
<tr>
<td>Facebook</td>
<td>2%</td>
<td>52</td>
</tr>
<tr>
<td>Nowhere</td>
<td>4%</td>
<td>118</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4%</td>
<td>141</td>
</tr>
</tbody>
</table>

### 23. How does these factors affect your perception of personalized offers? We would like to know why you do not like personalized offers.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security of stored data</td>
<td>3.50</td>
</tr>
<tr>
<td>Feeling of being monitored</td>
<td>3.91</td>
</tr>
<tr>
<td>Fear for spread of data to third parties</td>
<td>3.77</td>
</tr>
</tbody>
</table>

### 24. How concerned are you for information stored about you online in general?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Not at all</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5 - Very much</td>
<td></td>
</tr>
</tbody>
</table>
25. **How concerned are you for information stored about you, by us at Paradox Interactive?**

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>1 - Not at all</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 - Very</th>
<th>Rating Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>970</td>
<td>1053</td>
<td>880</td>
<td>470</td>
<td>227</td>
<td>2.43</td>
</tr>
</tbody>
</table>

26. **Is there anything you would prefer us to change for you to feel more safe and secure?**

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Free text)</td>
<td>977</td>
</tr>
</tbody>
</table>

27. **On which game or entertainment websites do you feel most safe and secure?**

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Free text)</td>
<td>1248</td>
</tr>
</tbody>
</table>

28. **Would you like explicit information about how data is stored in order to feel more secure? E.g. information related to encryption techniques, authentication and storage location.**

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>23%</td>
<td>827</td>
</tr>
<tr>
<td>Probably</td>
<td>35%</td>
<td>1243</td>
</tr>
<tr>
<td>Don’t know</td>
<td>16%</td>
<td>563</td>
</tr>
<tr>
<td>Probably not</td>
<td>18%</td>
<td>652</td>
</tr>
<tr>
<td>No</td>
<td>9%</td>
<td>315</td>
</tr>
</tbody>
</table>
29. Would explicit data security certificates increase your feeling of safety on our websites?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Percentage</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24%</td>
<td>860</td>
</tr>
<tr>
<td>Probably</td>
<td>37%</td>
<td>1334</td>
</tr>
<tr>
<td>Don’t know</td>
<td>16%</td>
<td>583</td>
</tr>
<tr>
<td>Probably not</td>
<td>17%</td>
<td>600</td>
</tr>
<tr>
<td>No</td>
<td>6%</td>
<td>223</td>
</tr>
</tbody>
</table>

answered question 3600

30. Do you use ad-blocking tools in your web browser?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Percentage</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>74%</td>
<td>2657</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2%</td>
<td>83</td>
</tr>
<tr>
<td>No</td>
<td>24%</td>
<td>860</td>
</tr>
</tbody>
</table>

answered question 3600

7.2. Interview Results

Below are the results from the in depth interviews at Paradox Interactive presented.

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Mats Wall</th>
<th>Daniela Sjunnesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brynjólfur Erlingsson</td>
<td>Most crucial related to marketing is relevance. Increased brand awareness will make it possible. Paradox Interactive is already working with corporate branding. Customers to Paradox own games are most aware of brand, which is a minority, which however are loud and free spoken on for example the forums.</td>
<td></td>
</tr>
<tr>
<td>Mats Wall</td>
<td>People are aware of some game production studios but not the majority of them.</td>
<td></td>
</tr>
<tr>
<td>Daniela Sjunnesson</td>
<td>People are aware of some companies, but maybe not the difference between a game's publisher and its developer.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Tobias Sjögren</th>
<th>Johan Andersson</th>
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<tr>
<td>John Hargelid</td>
<td>Customers do not seem to see the connection between different games by the same publisher, for example different games published by Paradox Interactive.</td>
<td>The brand awareness differs a lot in the industry. If something matters when buying a game, it is the developer studio, not the publishing company.</td>
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<td>Tobias Sjögren</td>
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<td>Johan Andersson</td>
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<tr>
<td>Christian Westman</td>
<td>Björn Blomberg</td>
<td>Daniel Lagergren</td>
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<td>It is very diverse in the industry. In Paradox Interactive it seems to be higher than the average in the industry. Some companies have high brand awareness, such as Blizzard, which has their own portal where they sell games, “battle.net”. Partly because of this they have real “Blizzard-fans”, people who are willing to buy games based on the fact that Blizzard has created them. For Paradox Interactive published games and actually created games are confusing the customers, people may think for example the game “Cities Skylines” is created by Paradox Interactive, even though it is just published by them. The effort for creating Paradox Account is one approach for increasing the brand value and the brand awareness for Paradox Interactive.</td>
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<td>The games take a lot of time to learn, implying that most players are “hardcore gamers” and the environment of the games. Based on this many players are aware of the other game titles of Paradox. The customers are very loyal, which is related to their high demands for high quality in all aspects.</td>
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<tr>
<th>Brynjólfur Erlingsson</th>
<th>Mats Wall</th>
<th>Daniela Sjunnesson</th>
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<tr>
<td>Customers in the computer game industry are partly conservative, especially related to storage and collection of personal data. It is crucial to please the most conservative customers, since they otherwise are spreading negative information about it. Customers playing regular strategy games are more conservative towards marketing and personalized marketing than those playing freemium games.</td>
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<td>Customers to Paradox own games are most conservative, the proportion of these players are decreasing due to broadening of game genre. People seem to be conservative related to ads, it is even more noticeable with Paradox’s customers.</td>
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**Conservatism in the computer game industry**

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<th>John Hargelid</th>
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<tr>
<td>People are skeptical in the beginning. PC gamers in general are conservative, and it is even more noticeable with Paradox’s customers.</td>
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People seem to be neo conservative, they accept the idea of letting companies use data for personalization, but does maybe not like when seen. The customers are relatively conservative to new functionalities. A small part of the customers are conservative, they do not want to be monitored and they were not happy when Paradox Interactive started to sell everything using Steam only.

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<th>Christian Westman</th>
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<td>Some of the customers to Paradox Interactive are very sensitive to monitoring. New things scares people, when they are used to it may be more acceptable. One clear example of such happening is the use of “cookies”, which people a few years ago were very critical to, but since the great exposure of the use of cookies, it has become accepted. This was partly caused by a law and regulation change, which implied that customers on websites have to explicitly accept the use of cookies. Also the use of email addresses is a sensitive area amongst the customers. Customers did loudly object to the change from logging in to Paradox using the email address, instead of a nickname, this even though the email address always have been stored. Email addresses are highly valuable, since they can be sold to companies form Customers are expecting high spamming. The fear of misuse quality delivered from Paradox. of the addresses is tried to be solved by, in the privacy against marketing in general, policy document and in the End User License Agreement they are expecting relevant (EULA), clearly describe that marketing with high quality the addresses will not be aligned with the high quality games.</td>
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The older (35-45 years old) gamers of Paradox Studios own games are relatively conservative related to monitoring.

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<td>Customers to Paradox Interactive seem to be</td>
<td>People are highly in to technique, they are “tech</td>
<td>People are very “techsavvy”, they know a lot about</td>
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<tr>
<td>How customers</td>
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are affected by data security

more aware of data security issues due to the high level of technical knowledge. Customers are probably not affected by more and clearer information about how secure the data is.

savvy", has a lot of knowledge. For example tracking data was used on the website, which was immediately found out and a thread related to the subject was posted in the forum. People are using advert blocking tools mostly because they has knowledge about it.

John Hargelid

They want what they perceive as high security. Even though encryption can be performed using a long key implying that even an offline attack takes too long time, it is not possible to use since it becomes too slow. A mean value has to be used, which may imply that some data is not encrypted, but secured by good access control techniques.

Tobias Sjögren

Related to DRM protection the customers seem to only related the phrase to complicated processes which may be seen as a security risk.

Johan Andersson

No customer has mentioned any data security related problem. If people do not want personalized marketing based on gathered information it is because they do not want to be monitored, not because of security issues. One possible explanation is that Google for example already knows everything about internet users.

Christian Westman

Unwillingness to monitoring does not seem to be highly related to data security, but to the general approach of storing and gathering data, hence anonymization should not affect it. Data is encrypted by TLS during transfer, parts of the data is not encrypted during storage but extremely hard to reach due to other security tools ensuring denial of access for unauthorized people. Customers have high tech knowledge, implying that the explicit fulfillment of security certificates are not

Björn Blomberg

Some companies in the computer game industry as well as in the music and film industry uses “DRM protection”, techniques for managing the use and rights of the digital content. Many people have argued for negative aspects of this protection, and Paradox Interactive has chosen to not use DRM at all. This to make everything more easy and more enjoyable for the paying customers, instead of trying to stop the “pirates”, which in most cases can break the DRM protection anyways. As with several other companies Paradox Interactive does not allow the customers to delete their account, which may be

Daniel Lagergren

(Not mentioned).
improving the feeling of security, they know it can be attacked however. expected. This since players often want to recover data and the backup need is hard to keep. Customers can instead just edit their data.

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<tr>
<td>Marketing itself is problematic if it is not relevant. For those who do not want to share personal data, personalized marketing is a clear indication of such behavior, which is highly affecting the customer in a negative way. The companies using the most accurate and sometimes illegal personalization approaches are those with less successful games. A clear line can be drawn between automatically versus manually performed marketing towards personalized marketing and customers, related to general marketing is what can be perceived relevance. People do not as ethical. The seem to be bothered by automatically, less commercials and offers, unless it is irrelevant. It can be rarely used by big companies, since they can skip the missed and games to perform marketing in various channels. Personalized marketing is used.</td>
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| Most crucial related to personalization, they accept the idea of letting
to the customer the offers should be
about the feeling of being monitored, it may be
| No real problem, besides from the conservative minority. |

People seem to be neo
conservative, they accept the idea of letting companies use data for personalization, but does maybe not like when seen. In order to not disturb the customer, the offers should be relevant, but to minimize the feeling of being monitored, it may be

John Hargelid  Tobias Sjögren  Johan Andersson
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<tr>
<td>People are used to marketing, especially the younger ones. The crucial part is the customer’s high demand for quality. Marketing and especially personalized marketing does not negatively affect the in-game experience. The game data (telemetric data) used for, for example the personalized marketing are critical to marketing which should be shown is regulated by laws, is not relevant for them. The and where it should be offered. Before every value and be very relevant. default should be on or off. The release the gathered data is ensured to be ethical correct and relevant for the purpose. The technical solutions people are aware of the risks and seem to have high knowledge in the area.</td>
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<td>People seem to have personalized marketing as a “hygiene factor”, meaning that if it is relevant and visually appealing. It is crucial to let the people not really aware of when it is performed, but they choose which personalized marketing is critical to marketing which should be shown is regulated by laws, is not relevant for them. Still some of the customers offers should have a logical data is ensured to be does feel monitored and does connection to what the ethical correct and not appreciated it. It does not customer own to be relevant relevant for the purpose. The technical solutions people are aware of the risks and seem to have high knowledge in the area. Big Data is used, and even more data can be collected by implementing a general account, the Paradox Account.</td>
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<tr>
<td>Big Data is used, and even more data can be collected by implementing a general account, the Paradox Account.</td>
<td>Monitoring makes it possible to make it more relevant. Secondly the frequency of offers has to be delimited, also related to how much is known about the customer and its behavior.</td>
<td>Data is used from the games as well as from the accounts. Several companies in IT industries use different approaches to get data, for example did Amazon buy Twitch, which provided Not relevant. Page 134 of 148 them with a lot of useful data. (Not mentioned).</td>
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All data is securely transferred, but not all of it is encrypted while stored. Credit card info is not stored at all due to the need for advanced certificates, instead an external service provider. At the moment more knowledge about the thought of the Paradox Studio players is tried to be gathered, to know which problems in the games are most critical to fix. The communication strives to be two ways, meaning that information about current work should be public, hopefully implying even higher loyalty and satisfaction. Using more data in the data warehouse, the marketing and sales offers can be more personalized, implying increased relevance. The new Paradox Account will imply more and more detailed data, which will enhance the Big Data analysis work.

### 7.3. Interview Guide

Below are the topics used in the semi structured interviews presented.

- Cross functions (marketing and selling) at Paradox Interactive.
- Brand awareness in the computer game industry versus at Paradox Interactive.
- Technology knowledge in the computer game industry versus at Paradox Interactive.
- Conservatism amongst Paradox Interactive customers.
- What makes customers negatively affected by personalized marketing?
- Which role has Steam?
- Big Data at Paradox Interactive.
- Loyalty in the computer game industry versus at Paradox Interactive.
- Has there been any major event related to data security issues at Paradox Interactive?
- Differences between free to play games and regular games.
- Privacy and integrity in the computer game industry and at Paradox Interactive related to marketing.
- Data security techniques at Paradox Interactive.
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