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**Diploma thesis**

**The benefit of Customer Intelligence to marketing  
management**

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## DECLARATION

I hereby declare that I have written the diploma thesis “The benefit of Customer Intelligence to marketing management” independently with use of quoted resources in bibliography.

In Prague, on February 29, 2014

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# **The benefit of Customer Intelligence in marketing management**

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## **Přínos Customer Intelligence nástrojů v marketingovém řízení**

### **Summary:**

The thesis introduces Customer Intelligence tools and their usage in company's everyday marketing activities such as marketing campaigns execution, segmentation, customers targeting, behavior prediction and other. Theoretical part is dedicated to explanation of principles on which the tools work that is primarily usage of data and their analysis. In the practical part of the work the application of Customer Intelligence is demonstrated on the real example of mobile services provider T-Mobile a.s.

Telecommunication company was chosen for its generally favorable conditions and wide application of the tools in the industry. The overall benefits of Customer Intelligence and recommendation to other companies on possible applications of this tools was done based on the personal interview, analysis of company reports and other documents and own research.

### **Souhrn:**

Práce představuje nástroje Customer Intelligence a jejich využití v každodenních marketingových aktivitách společnosti, jako je exekuce marketingových kampaní, segmentace, cílení zákazníků, predikce chování apod. V teoretické části se práce zabývá hlavně přiblížením principů na kterých nástroje pracují, tj. především využití dat a jejich analýza. V praktické části pak práce ukazuje použití Customer Intelligence v praxi na příkladu telefonního operátora T-Mobile a.s.

Telekomunikační společnost byla vybrána díky obecně velmi příznivým předpokladům a širokému využití těchto nástrojů v odvětví. Na základě osobního

pohovoru, analýze dokumentů a vlastnímu výzkumu byl v závěru práce zhodnocen celkový přínos těchto řešení a dáno doporučení ostatním společnostem k jejich případnému využívání.

**Key words:** marketing, customer, software marketing campaign, profitable, data, Customer Intelligence, benefit, T-Mobile

**Klíčová slova:** marketing, zákazník, software marketingová kampaň, výnosný, data, Customer Intelligence, přínos, T-Mobile

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## 1. INTRODUCTION

There were many definitions written on what is marketing, what activities does it include, what are its goals and aims and how did it develop over the time. But still if you ask random person what is marketing he or she will probably say something about advertisement or something about selling and buying things which people do not really need. This sceptic attitude from the layman is not surprising as this is how it used to be for long time and how it still is in many companies. Many books and articles were written about rapidly changing environment in marketing field and about extremely fast changes of customers' preferences, but these phenomena are still overlooked by many companies. The product and selling orientation of marketing still remain in large number of corporations and businesses.

But the positive message is that there also many organizations, who are adopting the holistic view of marketing and who put the customer in the centre of company's activities and attention. The increasing importance of customer relationship marketing, socially responsive marketing and integrated marketing will hopefully change the overall perception of marketing in the population. This thesis introduces tools, which are designed to help businesses to develop holistic view and deepen the customer insight for the benefit of the company and the customer.

Computers, information systems and new technologies are more and more used across the industries and fields, including marketing. Marketing managements can rely on high tech solutions which enables them to gain more information about their customers and improve company's marketing decision-making process. In which marketing activities exactly and how such solutions can be used and in which way they can influence marketing decision-process and where their benefit is seen is the topic of this work.



## **2. PAPER OBJECTIVES AND METHODOLOGY**

### **2.1. OBJECTIVES**

Aim of the work is to introduce Customer Intelligence solutions and explain how such solutions can help marketers and decision makers to make their businesses more profitable by using data about their customers in an effective way. The theoretical part gives an overview on what are the areas of marketing, where Customer Intelligence tools can be beneficial and how they can be used. It shows current trends and latest news in the field. By reading the theoretical part, readers who have no experience or knowledge about these tools gain insight of the issue and its attractiveness for companies.

The main aim of the practical part is to prove or refuse the benefit of Customer Intelligence tools and provide readers and companies with recommendations about the need of using these technologies. In this thesis it will be demonstrated on example of a telecommunication company.

Two hypotheses of the thesis are:

- Customer Intelligence helps companies to improve customer relationship and customer's perception of the company.
- Customer Intelligence solutions significantly helps companies to improve marketing processes and increase their effectiveness.

### **2.2. METHODOLOGY**

For the theoretical foundation, a selection of relevant literature, scientific articles and internet resources will be used to put these solutions into a context of marketing as such, to explain what are these solutions used for, where they can be utilised, what are their features, and where their business value is seen.

A business conference focused on this problem will be attended to gain more knowledge about actual trends and methods in this field. Additional informations on characteristics and positioning of Customer Intelligence in the Integrated Marketing

System will be gained also from personal communication with specialists in this field, to whom the author has access.

Practical section of the thesis will have a form of a case study and will be based on analysis of position of T-Mobile at the telecommunication market in Czech Republic, information received from structure interview with CRM and Customer Experience Senior Manager in T-Mobile and questionnaire conducted with T-Mobile customers.

Prerequisite for the structure interview is that the interviewee agrees on using his authentic answers and comments for the purposes of this diploma thesis. The interview will be recorded and transcript in order to draw an unbiased and objective conclusions. At this point an analysis of internal documents and other public resources such as company annual reports will be also used to prove the possible benefits.

To support or refuse the hypothesis on possible benefits and to supplement the results from interview and from the analysis of the market, the questionnaire will be conducted. It will consist of 13 closed-ends, multiple-choice questions and it will be distributed to at least 100 respondents mainly electronically or personally. All respondents need to fulfil the condition of being a customer of T-Mobile a.s. and have their personal SIM card. (Not provided by their employer or other) The expected outcome is an overview of customers' feelings and perceptions about their mobile services provider. After evaluation and analysis of responses the results will be presented in a visual way using graphs to ease understanding and insight of results.

Some of the information mentioned in the research are company confidential and author committed herself to not disclose these information for any other purposes than this thesis. The research was executed in the period between September 2013 and February 2014.

### **3. OVERVIEW OF THE ISSUES DISCUSSED**

#### **3.1. MARKETING IN THE 21<sup>ST</sup> CENTURY**

Marketing is a very live and dynamic field which has gone through many changes and transformations during last decade or two and it faces many challenges on today's market. The market of 21<sup>st</sup> century is extremely competitive and demanding as are the customers with their needs, wants and expectations.

Competition across the industries is intense, which makes it harder for companies to keep the loyalty of their customers. Any dissatisfaction of a customer may easily lead to losing him. Technological progress empowers the customers who can easily choose from enormous offer of products and vendors, find the lowest-price, compare quality standards, colours, sizes, additional services, distribution channels etc. and all this within just few minutes from their home. Moreover, the access to various social media, discussions and chats gives them an opportunity to share their experiences and opinions about the products or services with thousands and millions of other users. The fast transfer of information between consumers and fast change in their preferences results in time pressure on marketing strategies making and their adjustments. The fast response to demand and fast decisions are necessary in today's business. Factors, which marketers should take into account are numerous and are constantly changing.

A set of all these characteristics of today's market led to swift shift of marketing itself. The main attention is paid to the consumer rather than a product or selling. The way to a successful business is through a deep knowledge of a customer and his expectations, preferences, needs and wants, his habits, patterns, economic situation, social status, etc. Marketing is rather customer focused than product driven. The traditional business models focusing mainly on four P's (product, price, promotion and placement) are still important to companies but should be applied along with strong awareness of a customer. Seán Kelly even uses a new principle of four E's – Engaging (facilitating customer to discover the company), Enabling (facilitating customer to interact with the company, do the business), Exchanging (acquiring the transmitting information with customer) and Extending (developing the relationship with the customer). (Kelly, 2006) Customer centric nature of doing business is the main attribute of today's business.

Peppers and Rogers (2000) describe two main ways of understanding purchases: as independent purchase events and as conditional purchase events. The traditional marketing perceives that all customers' purchases are independent events unconnected together and customers are renewable resource. Peppers and Rogers say that this approach leads to "product being priced to attract the last, most marginal, least interested customers." (Peppers, Rogers, 2000) The other scenario perceives purchases as conditional events, which enables to recognize a customer and build and reinforce relationship with him through differentiated marketing and pricing. Customer centric company will offer a range of tailored products and services, which will raised the value for the consumer rather than the lowest possible price.

All the above is linked to another extremely important trend which transforms the way of doing business and marketing, and that is an enormous amount of data. Consumers, businesses and governments generate huge amount of data, which can create a great advantage to the company – or not, if they are not well evaluated and well processed. Data can be gathered from all forms of surveys, questionnaires, researches as well as credit cards, loyalty cards, security cards, phone, call centre, internet and many others. If the company posses with well structured quality data it can serve to more efficient and accurate strategic decision making, stronger relationship with a customer and higher profits of the company. Customer Intelligence solutions have the intention to help companies to achieve this. But "loyalty activities, such as improving customer retention or increasing shopping frequency, are but one subset of activities utilizing customer data in the customer intelligence company." (Hawkins, 2003)

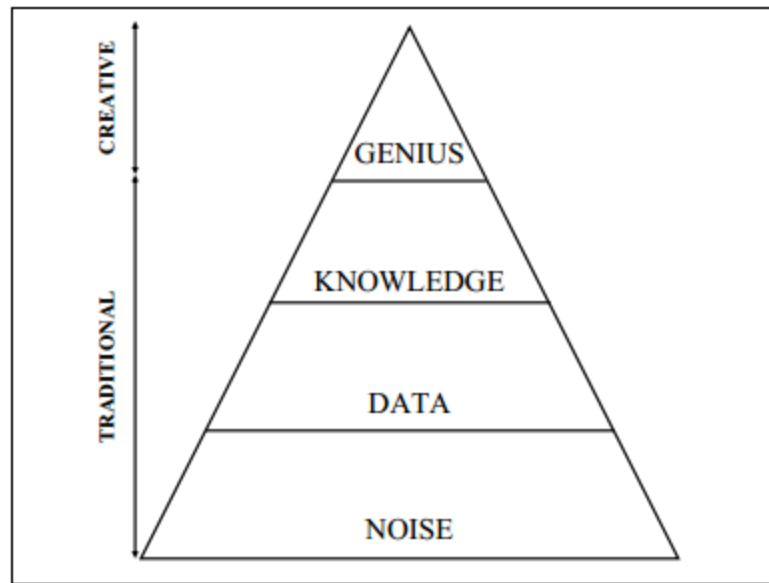
### **3.2. CUSTOMER INTELLIGENCE**

Customer Intelligence is defined as "the process of exploiting information from a company's customer database by means of state-of-the-art (statistical) techniques in order to create customer knowledge." (Coussement, 2008) Coussement gives several examples of main areas within Customer Intelligence: Customer Acquisition, Cross-selling, Up-selling, Customer Lifetime Value, Churn Modeling. Segmentation, Next Best Action, Social Network Analysis and other can be added.

Another definition by Fleisher and Blenkhorn says “Customer Intelligence management is a domain of practices and tools belonging to the family of business intelligence (BI) and particularly associated with customer relationship management (CRM).” (Fleisher, Blenkhorn, 2005) It includes practices of data collecting, planning, analysis and use. It relies on analytical and statistical techniques and customer data visualization and manipulation in order to achieve better customer experience and company profit. Its theoretical basis comes from customer relationship management putting one to one market in the main attention. One-to-one marketing - the main characteristics of Customer Intelligence strategy encourage as much personified communication towards customers as possible. To illustrate, where such strategy might be used, readers can imagine for example call centre, taxi phone line or any service support lines, where VIP clients would be responded and handled with priority to other random customers. In a minute when this customer calls in, his phone number is recognized by CI software, the call is pushed forward, possibly directly to customer’s personal service agent and responded before other calls in. Personalization of interactions supports loyalty of clients and improves revenues on investments. It stands in opposition to traditional, above the line marketing which aims on acquisition of new customers. Customer Intelligence focus rather on retention and satisfaction of existing customer, cross sell and up-sell activities.

It promises companies that it will put together pieces of information about their customers in order to achieve tactical and strategic goals of organization and that preferably in real time. But these tools and solutions come in complex and demand quite advanced technological and IT support. Their implementation is not something, which would happen overnight; rather it takes weeks and months and requires organizational and business-process reconfiguration. Coussement creates a Customer Intelligence summarize difficulties into “Customer Intelligence pyramid.”(Coussement, 2008)

**Figure 3-1: Customer Intelligence Pyramid**



Source: Coussement, 2008

Coussement calls the bottom layer NOISE and it refers to a phase, where marketers and market analysts are aware of having valuable and diverse information about their customers, but these are stored in many different databases and files and on many different locations within the organization. The first essential step in the process of implementation Customer Intelligence solution is identifying the correct information and their source, which can be extremely time-consuming task.

Second layer DATA is equally crucial. In this step, marketing analysts integrate all the data and information gathered in the first phase into one aggregated framework. For companies, which suffer from lack of customers' data or are not able to integrate them Customer Intelligence solution lose its potential.

When the organization gets through the NOISE and DATA layers, it is able leverage this information into CUSTOMER KNOWLEDGE. "Analyses within the CI domain are divided in two main categories: descriptive and predictive analyses." (Coussement, 2008) Descriptive analysis answers marketing questions on passed events, what has happened, why it has happened, it enables segmentation, customer profile creation and other ad hoc

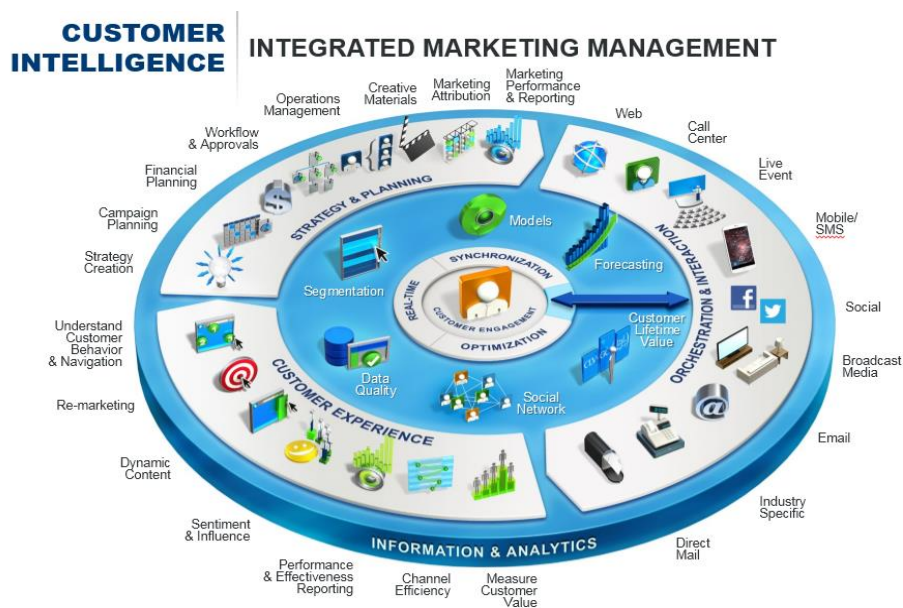
marketing issues. Predictive analysis on the other hand is a part of CI which focus on the upcoming events and predict future customers behaviour.

Coussement presents also fourth layer which according to him reinforce the “traditional customer intelligence” through data and method creativity. In this thesis we will focus only on “traditional Customer Intelligence” how Coussement calls it.

Vendor of Customer Intelligence solution, SAS Institute Inc. positions the solutions into framework of Integrated Marketing Management. (SAS, 2013) Definition of Integrated Marketing Management by Gartner is: “business strategy, process automation and technologies required to integrate people, processes and technologies across the marketing ecosystem. IMM supports closed-loop engagement marketing by integrating operational, executional and analytical marketing processes from concept/idea to planning to resource allocation to creation/project management to piloting to full-scale execution through to evaluation and analysis.” (Gartner, 2013)

The Figure 3-2 shows a variety of Integrated Marketing Management processes, in which Customer Intelligence software can play a significant role.

**Figure 3-2: Integrated Marketing Management**



Source: SAS, 2013

SAS also presents three main levels, which more or less corresponds with the Coussement's pyramid. The three levels are analytical, operational and strategic level. (SAS, 2013) For the purposes of this thesis the author will stick to Coussement's basic division into descriptive and predictive Customer Intelligence.

### **3.3. CUSTOMER KNOWLEDGE**

In this stage, the main activity is collection of customer data and knowledge of customer, the goal of this stage is to gain so called Customer Insight.

As market is becoming more and more customer centric, logically the knowledge of a customer is more and more important for companies which want to succeed on the market. Better knowledge of customers through deep analysis of their data enables to gain positive and more profitable relationship with customers while retaining their loyalty. Marketing directors and decision makers can better understand customer's behaviour and their shopping patterns. They can better categorize their customers and define more precisely the most valuable ones. They can better predict future behaviour. With analytically driven knowledge they can better focus their marketing campaigns, segment customers more effectively, reduce campaign costs or increase customer loyalty.

“The human being is now constantly transmitting a stream of data through a variety of channels on a scale that would have been difficult to anticipate even a decade ago” (Kelly, 2006) Possessing information about customers can benefit to an organization in many different ways and higher the number of attributes of an information greater the value of the information. The goal is to have a detailed quality description of the external market to derive decisions across the whole organization from. The intelligence gathered concerning the external environment is what provides effective decision making and shapes all other systems in the company. Firms will not have other choice than to operate with intelligent interface, integrated information, effective customer-facing business processes in order to compete in communication and information intensive environment. (Fleisher, Blenkhorn, 2003)

Examples of customer's data which can be collected are for example demographic indications, length of relationship (how long is he or she company's customer), customer's



product portfolio, selling channel (how the customer purchased a product / service), customer's profitability, complains, contact history (across the channels), response history etc.

Incorrect or irrelevant information in the database leads to extra costs, loss of income, unnecessary mistakes in analysis and wrong decisions based on these analysis and finally damaged relationship with customer. Simple example can be a mistake in contact address, which might lead to failure in delivery (extra costs), return of the consignment (loss of income) and damage of relationship with customer, who is probably upset that he/she did not receive his consignment in time.

Customer Intelligence is not a data collecting tool, because data itself is not what drive the performance. It is the information extracted from the data which enables an effective knowledge action. Sean Kelly describes intelligence on an example of an organism. "Every organism has developed receptors to collect data that can be synthesized to produce useable information. As most organisms have more than one receptor gathering data, the act of integrating the data to create patterns that tell us something about our environment is one key indicator of intelligence." (Kelly, 2006) Intelligence can therefore be explained as a process of transformation of raw data into information and knowledge. To maintain the knowledge actual and right we need to update it in time with new information.

First attempts to collect consumers' data are dated in late 1980's. Due to the high costs and low effectiveness of computer technologies of that time the first attempt had failed. Nevertheless, with the technologic progress and better availability of these technologies the data collection saw its rise in 1990s. At that time many of the frequent shopper programs were introduced, distributing the loyalty cards between the customers and afterwards "scanning their transaction into the large databases, providing retailers a view of customer shopping behaviour over time." (Hawkins, 2003) From this point, retailers and other companies across the industries gathering the customers' data could really understand and document customer shopping behaviour.

Today's customer intelligence software is powerful tools with many features helping marketing specialists not to get lost in a huge amount of customers data.

### **3.4. HOW TO USE THE CUSTOMER KNOWLEDGE - DESCRIPTIVE CI**

Customer Intelligence solutions are sophisticated mathematical and statistical software, which enables users to explore practically unlimited amount of data. By providing managers with customer insight, it can positively influence many marketing indexes and activities such as revenue growth, ROI, customer segmentation, optimizing the marketing mix etc. Descriptive analysis within CI permits especially better personification, thorough segmentation or setting contacting rules. Knowledge of customers' preferences is key attribute for product optimization. Sales numbers are valuable information but does not show customer post-purchase satisfaction. Even if customers are generally happy with a product, the process of gathering information should continue. Company should constantly search for information about customer's satisfaction with individual features of the products, about which features need to be improved, and what new features are demanded.

#### **3.4.1. PERSONIFICATION**

“Technology is increasingly leading to a world in which consumers are expecting to have their preferences known by companies they do business with.” (Hawkins, 2003) Airline companies, hotels, car rentals and many others maintain detailed records of their best customers' preferences. When the client comes back, his preferences are already set for him. The receptionist knows if he or she prefers smoking / non-smoking room, the stewardess in a plane can offer directly the favourite drink to the passenger and the car rental can have the favourite model already prepared for the customer. Customers, at least the ones who bring most profits to the company, expect more recognition, attention and treatment. If the retailer or service provider does not know who his most valuable customers to take care of are, he takes a risk of losing them. High expectations of customers on personalized approach of companies change the usage of marketing communication channels.

Traditional marketing campaigns, such as printed advertising, newsletters, billboards, radio and TV commercial are still present and widely used, but they are losing their attractiveness and might be perceived by certain as disturbing or annoying. Reason behind is that this type of campaigns is based on needs of company rather than customers'. Mass marketing techniques use the same product, promotion and communication channel for every customer and it functions as if the market place is homogenous. Therefore these

messages might not have much benefit for recipients. “Mass manufacturing of standard products communicated through mass marketing and distributed through one mass channel is now giving way to customized products communicated to small target groups and consumed through variety of channels.”(Kelly, 2006) Below the Line communication and direct marketing on the other hand are becoming more important as it allows creating and delivering a personified message for selected customer or small group of customers. Quality segmentation and deep knowledge of customers enables marketers to use outbound communication channels such as direct mails, call centres, e-mails or SMS more efficiently and with higher success rates. Kelly refers to Swift from his book *Business – Creating Increased Profitability Through CRM* where he states that some surveys report up to 40% conversion rate from differentiated marketing compared to the 1-2% achieved by mass marketing and sending undifferentiated marketing content.

On the other hand businesses have to take in consideration the technological, financial and organizational requirements for such management innovations. Many businesses have failed at achieving these improvements. (Kelly, 2006)

Even if the customized message formulated only for small group of people seems to have greater effect than message send through mass-media, still it is a company who pushes its message out and hopes somebody will anticipate it.

Another situation is when it is a consumer who initiates the contact. In case of in-bound communication the probability that the message will be listened to and reacted to raises. Such situation is referred to as event-driven or event-based. “For event-based execution, the campaign management system needs to be connected to all required data marts in order to listen for trigger events and then initiate campaign execution on a one by one basis. An automated customer decision-making process has to decide which offer the customer will receive.” (Arikan, 2008)

In order to deliver a relevant message, which is the core of customer centric marketing, it is extremely important for a company not only to evaluate the trigger event, which might be e.g. complaint or call for service support, but it also need to take into account everything else known about the client. What other product/service is he using, how he is satisfied with it, what was the last time he called for service support, what other

products he was offered and so on. Customers are sensible to irrelevant messages and are not tolerant to them. If customer rejected an offer which was sent to him through one communication channel and then he receives it through another channel again he will probably get upset.

Through personalisation an organization can achieve better relationship with a customer and higher profits. Avoiding untargeted mass marketing campaign allows aiming the right message to the right person, which leads to lower costs of marketing activities and higher response rates. Recognition of valuable customers leads to higher satisfaction and greater loyalty of customers.

#### 3.4.1. SEGMENTATION

Enabling generation of smaller and more precise segments of customers is one of the key features of CI. As already mentioned, today's market is extremely competitive place and companies are pointing their focus from product to customers. At the same time mass marketing loses its potential as it treats the market as a homogenous group and delivers the same marketing message to all customers. (Hawkins, 2013) But it is not enough for modern customers, whose preferences differ and who expect to have the product customized for them.

Companies shift to target marketing, which recognize the diversity of customers and address them with relevant message and offers. In order to achieve this, companies invest large amounts into segmentation of their customer base. "Market segmentation held that every market consisted of groups (segments) of customers with somewhat different needs and wants." (Kotler, 1999)

Markets can be broken down into many different segments according to various characteristic. Kotler names for example geographic, demographic and economic characteristics, which are rather vague and valid for mass communication than for direct communication, segmentation based on customers' benefit, which group together people seeking similar benefit from the product / service (low price or high quality) and other types of segmentations such as occasion segmentation (grouping together people who use the product for the similar occasions), usage segmentation, lifestyle segmentation etc. (Kotler, 1999) Another popular diversification of segmentation which uses beside others Havaldar in his book Business Marketing: Text & Cases is macro and micro segmentation.

While macro segmentation divides customers based on widely defined groups with strategic purposes, micro segments are homogenous groups of customers within macro segments and are constructed based on well-defined tactical purpose, for example special personified offer. (Havaladar, 2010)

Every segmentation should follow few basic steps in order to be successful and reach its goals. Already definition of goals is a first step. There is enormous variety of possible goals, from overall improvement of profitability, acquisition of new customers, searching for cross-sell/up-sell occasions, tracking down the most likely leaving customers to finding and providing premium service to the most profitable customers.

Profitability is extremely important characteristic to the company. Every company should know who are its most valuable customers bringing most profit and who are the least profitable ones. According to Pareto Principle, 80% of firm's profit comes from top 20% of its customers. Therefore, it should be priority for the company to know, who are the top 20% and treat them with care. Often it can be seen that profits from most profitable customers are partially used to subtract the costs of serving the least profitable ones, who are not generating enough profit to cover these costs. Gary Hawkins shows that this is a case of airline companies, where travellers in business or first class, paying full price for their tickets bear the cost of remaining seats sold for discounted price to recreational travellers. This practice is referred to as yield management and "it is only with the view made possible by customer information that the companies could see actual customer behaviour." (Hawkins, 2003)

In retail, customer value is dictated by "spending, shopping frequency, the profit margin of the product or service, and the customer's shopping behaviour over time... leading companies desired even more in-depth view, moving from viewing customer purchasing to customer profitability." (Hawkins, 2003)

When the company is sure of what it wants to reach by the segmentation, the next step is collection and preparation of data, model creation and scoring. In this phase, analysts are creating clusters – grouping together sets of variables (data about the observed characteristics) which are more similar than those in other cluster. (Clustering is main task of exploratory data mining and it is largely used technique for statistical data analysis).

(Kelly, 2006) From that company should be able to define preferably somewhere between 5 to 12 segments and have their detailed profile. That means to have detailed characteristic of each segment to enable an organization to understand to consumers within each segment for comparison and strategy purposes. It should outline important aspects of consumer need, behaviour, product usage levels, and so on. A segment profile would also provide key measures of segment size and its growth. Next step is preparation and implementation of segment strategies. Decide what messages to deliver to each of the segment, which channel and when to use for communication with them, what products to offer for what price etc. Last but not least step is evaluation of outcomes and constant keeping the models up to date – constant recalculating and evaluation of correctness of the segments.

Analytically driven segmentation enables its users to segment their customer base more accurately by their specific needs, preferences, value and profitability. The software analyse all customers' data, evaluate them and divide customers into different groups with similar characteristic. This allows further targeting specific and personified marketing campaigns to the right groups of customers, who are most likely to respond to this message as well as identifying the most and the least valuable customers. With this knowledge, marketing departments can execute more effective campaigns for less money, increase revenue growth, customer retention and customer profitability.

#### 3.4.2. CONTACT POLICY

Basis for successful dialog with customer is quality contact history. Each employee who faces a customer should possess with latest information about what products the client experienced, which ones he actually uses, what product he was offered etc. When he has relevant information he can actually offer a product or service, which would best suit to the customer and contribute to customer's satisfaction and company's profit. Embarrassing situations when client is offered "great service" even though he or she already had it and were highly dissatisfied with it or offering a product which after more detailed survey client is not eligible to receive should not happen in companies, which uses Customer Intelligence solutions.

Having set a company contact policy is directly linked with it and it is extremely important for companies, which want to avoid disappointing their customers due to reckless, excessive addressing. Usually simple rules like minimum intervals between

individual product offering and usage of communication channels are applied. (SAS, 2013) If so, the client should not have receive let's say two identical offers within less than 30 days and at the same time should not be contacted more than twice in three months via SMS. Set of such rules should again, protect a good relationship with customers and it enables automation of the whole processes.

### **3.5. HOW TO USE THE CUSTOMER KNOWLEDGE - PREDICTIVE CI**

“Predictive analytics can help companies optimize existing processes, better understand customer behaviour, identify unexpected opportunities, and anticipate problems before they happen.” (Eckerson, 2007)

It employs statistics, advanced mathematics, artificial intelligence along with incredible data management and past events to anticipate the future.

Customer Intelligence software enable creating and building up predictive models which are further used to predict the probability of certain outcome. From used variables and input data, the model can exploit patterns from historical transaction and predict most likely behaviour of customers, which can further be used for up-sell/cross-sell purposes, next best action, churn probability, customer acquisition, campaign management, promotion, fraud detection, dormancy probability etc. (Eckerson, 2007)

In this stage marketers use the CI tools for interaction with customers. It comprise all marketing campaign management from planning, realization, distribution to evaluation of campaigns and every communication towards customers based on customer insight gained on analytical level. There is a wide spectrum of possible marketing campaigns (new product launch, retention campaign, cross-sell/up-sell campaign, welcome campaign) as well as there are wide spectrum of communication which is a unique mix of combination of target group, message, channel, offer. Customer Intelligence enables automation and optimization of campaign processes, their management, targeting, and evaluation.

#### **3.5.1. CROSS-SELL / UP-SELL / NEXT BEST ACTION**

If the business project tasks are well defined and available data are thoroughly prepared and analysed (data should be collected for at least 12 months to permit credible

modelling) than predictive analytics can in a company that offers multiple products lead to more efficient cross-selling and up-selling. Models calculated by Customer Intelligence software are created on basis of SEMMA methodology and the process of model development follows five basic steps. “The SEMMA process was developed by the SAS Institute. The acronym SEMMA stands for Sample, Explore, Modify, Model, Assess, and refers to the process of conducting a data mining project.” (Rohanizadeh, Moghadam, 2008)

1. Sample: Sample is a stage in which the model is tested on a set of data small enough to enable easy and quick manipulation yet big enough to comprise significant information.
2. Explore: Looking for anomalies and unexpected trends in the data in order to understand and gain new ideas.
3. Modify: In this stage the data set is being modified by changing, creating and selecting new adjust the model selection process.
4. Model: Modelling is actually happening. Software automatically search for combinations of data which with certain probability predicts desired outcomes.
5. Assess: Assessing and evaluation of the reliability and usefulness of the outcomes and application of the model.

Every customer is according to the model assigned with a score (from 0.0 – 1.0) and list of customers is ordered by the highest score. From the whole list only subset (for example customers with score higher than 0.7) are used for the marketing activity (product offering). But before any marketing campaign launch, control marketing analysis such as Breakeven Response Analysis and Uplift Marketing Analysis should be conducted. While Breakeven Response calculation estimate what is the minimum response rate the campaign needs to have in order to be profitable and is useful also for measuring the overall goals of the campaign, the Marketing Uplift shows the impact of a marketing action on an individual's behaviour. (SAS, 2013)

While for up-sell and cross-sell activities rather outbound communication is used – that is a company looks for a group of people to whom sell their product, next best offer



(or next best action) uses rather inbound communication. A company having a customer looks for the best product to offer to the customer based on his preferences. Associate analysis also called Market Basket Analysis and sequence analysis are often used to find out the next best offer.

Associate, Market Basket analysis is mainly used in retail and basically analyse relationship between individual products and links in their purchases. From such analysis marketer can find out, that customers who buy product A above average also buy product B above average. So if a new customer comes in and buy a product A, automatically he/she should be offered product B, as it is probably something he/she might need or want. The link between two products is evaluated on three measures:

- Support – searching for the joint probability that the pair AB will be found across all baskets. High support means that the pair is relevant because it is frequently purchased together.
- Confidence – express the probability that purchase of A will lead to purchase of B.
- Interest – discounts the joint probability by the “popularity” of the individual items in all baskets. (Kamakura, 2012)

This can be demonstrated on example of Tesco. Tesco, the UK based food retailer tracks customers visits and their shopping habits through Tesco Clubcards. This enables to Tesco customize and adjust offerings on the individual level. For example Tesco found out, that customers, who embark on shopping diapers also buys more beer (usually the customers are new fathers, who are now spending less time at the pub) and so started mailing them coupons not only for diapers but also for beer. (Davenport, Mule, Lucker, 2011) This technique helped Tesco to “achieve redemption rates ranging from 8% to 14%—far higher than the 1% or 2% seen elsewhere in the grocery industry.” (Davenport, Mule, Lucker, 2011)

Sequence analysis is mostly used in financial sector and unlike Market Basket Analysis defines order in which the products are purchased. In other words, it adds time factor into the analysis. (Kamakura, 2012) The possible scenario can look like this: A customer takes a loan to buy a new car. Market analysts in a bank found out by using sequence analysis that customers who take a loan on the similar amount of money are 3

times more likely to purchase insurance in the time period 2 to 4 weeks after the loan was taken. It facilitates marketers to identify the products, which are most likely wanted or needed and when there are most needed and wanted by customers.

### 3.5.2. CUSTOMER RETENTION

One of the most important topics in relationship marketing is retention of profitable customers (or those that may become profitable). This has been agreed on across the whole marketing community. Customer retention statistics have high value to companies as they show the percentage of long term clients, who tend to spend more and cost less. In order to retain valuable customers the effective churn management is essential.

Churn rate is one of the most used measure which at the level of customer express the probability that the customer will leave the company in a given time period. From the point of view of the company churn rate expresses the percentage of company's customers base which is going to leave in given period. (Blattberg, Kim, Neslin, 2008)

There are two main types of customer churn – voluntary and involuntary. Here, the voluntary churn will be discussed as it is the one, where it is the customer who decides to terminate the relationship for the company.

Based on the above it is more than clear that to predict which customers are about to leave and what are the factors that influence their decision is extremely important for successful business. It is much cheaper and easier to retain current customers than it is to acquire new ones. Through predictive modelling organisations can monitor their churn, predict who are most endangered customers and consider what would be the best proactive retention activity.

Kirui, Hong, Cheruiyot, Kirui in an article Predicting Customer Churn in Mobile Telephony Industry Using Probabilistic Classifiers in Data Mining published in IJCSI International Journal of Computer Science Issues demonstrate how predictive models can be used to prevent churn in telecommunication companies, which are extremely exposed to churn risk as the “industry is characterized by stiff competition, increasing innovation as a result of new technologies, low switching costs, and deregulation by governments.” (Kirui, Hong, Cheruiyot, 2013)

Data which are mostly used to predict churn in telecommunication industry are call details, call pattern changes, frequency of use, complaint data, contractual data, customer service logs and bill payment. These data are processed to enable construction of a model which predicts the potential behavior of customers in the near future. This model is then evaluated and applied. When the probable churners are identified, intervention strategies should take place to retain as many customers as possible. (Kirui, Hong, Cheruiyot, 2013)

Compiled churn models do not only identify who are the most likely leaving customers, but also when they will probably leave (indicate marketers how much time do they have to save the client) and what are the drivers of churn (can serve to improve internal processes, communication, products) and therefore, if well applied are of great value to marketers.

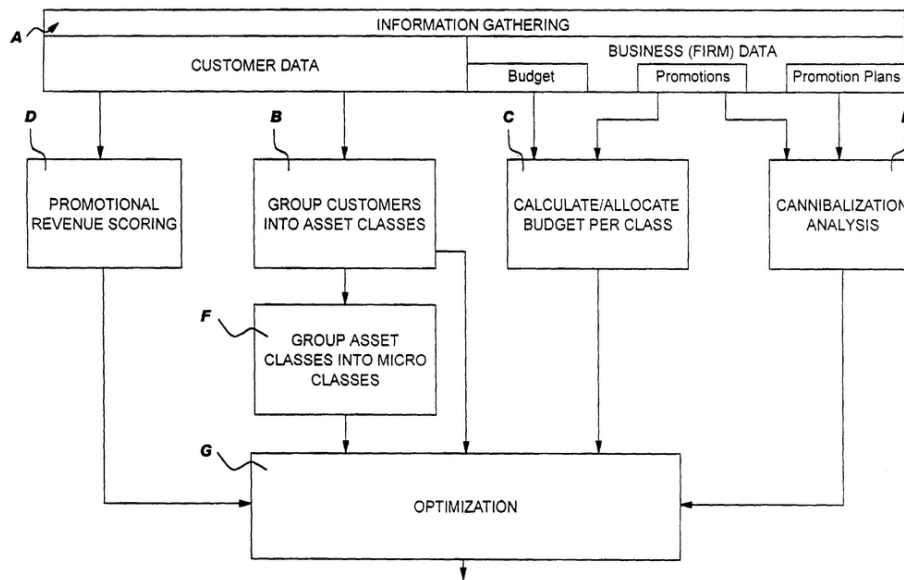
#### 3.5.2.1. MARKETING OPTIMIZATION

Marketing optimization is a targeted marketing tool which through optimization tasks calculates the best possible scatter of large number of customers between large number of marketing campaigns and communication, while bearing in mind contact policy and other internal rules and limitations. This results in great cut of time needed for each marketing campaign execution, greater number and higher relevancy of addressed customers and subsequently higher effectiveness of direct marketing campaigns.

Systems work on the commonly-used marketing technique called RFM, where R stands for Recency, F for Frequency and M for Monetary Value and combines these factors with many others to create a list which would link every single customer with one marketing campaign or message, which should be subsequently delivered to him. The RFM technique assumes that customers who are most likely to respond to the marketing message are those who have just recently bought a product/service (Recency), and who are buying products frequently (Frequency) plus spend significant amounts on their purchases (Monetary Value). Based on these and other selected criteria customers are assigned with a score, and the one with the highest score are considered a good target. This tool “improves upon prior art marketing methods by analysing customers based upon historical criteria; analysing a promotional plan (a group of promotion events implemented or to be implemented over a particular time period) to determine the effect of each promotion event on the other promotion events in the promotional plan; and, based on this analysis,

determining the optimal promotion stream (a specific subset of the promotional plan to be sent to customers or a group of similar customers) so as to maximize the ROI of the promotional plan as a whole.” (Bibelnieks, 2007)

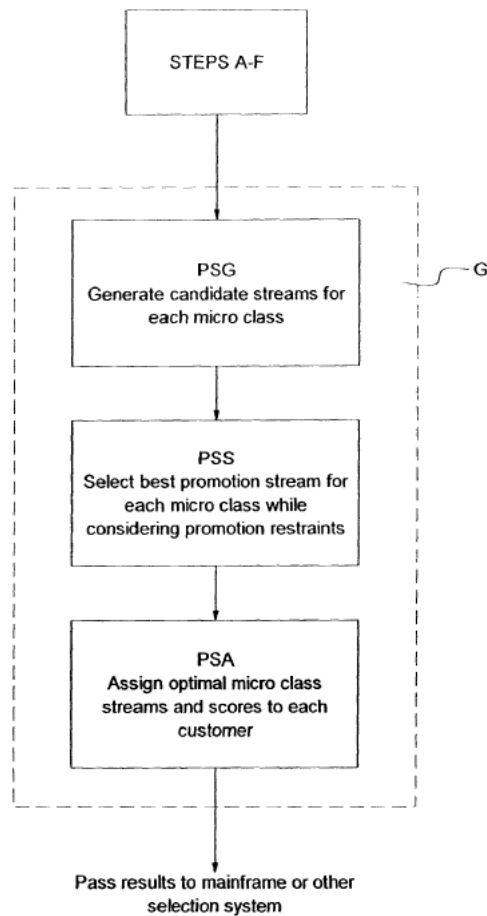
**Figure 3-3: Flow of the optimization process**



Source: Bibelnieks, 2007

The steps illustrated in the Figure 3-3 provide input to the optimization and promotion-stream selection process. Figure 3-4 is application of linear and integer programming techniques to select the promotion streams for every customer. Use of optimization techniques and data related to a plurality of promotions over time results in an optimal promotion stream for every single customer. (Bibelnieks, 2007)

**Figure 3-4: Flow of fundamental steps of Marketing Optimization**



Source: Bibelnieks, 2007

### 3.5.3. SOCIAL NETWORK ANALYSIS

Quite a new method, which is among other used for influence segmentation, identification of behavioural communities and changes in between them is Social Network Analysis. “The defining feature of social network analysis is its focus on the structure of relationships, ranging from casual acquaintance to close bonds.” (Olivier Serrat, 2009)

Social Network Analysis helps marketers to map and measure links between people, observe the way they interact with each other and how do they influence each other. Such

information might be very valuable and outcomes can be used for different purposes. Serrat states for example:

- Identify the individuals, teams, and units who play central roles.
- Discern information breakdowns, bottlenecks, structural holes, as well as isolated individuals, teams, and units.
- Make out opportunities to accelerate knowledge flows across functional and organizational boundaries.
- Strengthen the efficiency and effectiveness of existing, formal communication channels.
- Refine strategies.

These methods are increasingly applied in social sciences, psychology, health and business as well. Ones of the first companies who started using these technologies were telecommunication companies. This is quite logical, as it is relatively easy for telecommunication companies to examine the social networks and the links between members of every and each network, thanks to the huge amount of data they possessed about their customers. Through these analysis they can estimate, who are leaders, followers, outliers in the social network and based on this knowledge, they can focus their marketing activities on people, who are most valuable for them and who have the greatest influence on others from the social network. That would most likely be the leaders. This type of analysis is not utilised only for segmentation, but also for retention, churn prediction and prevention, cross-selling and up-sell activities, acquisition etc.

Strong factor in customers' decision processes are suggestions, experiences and behaviour of persons from customers environs, for example family, friends, colleagues etc. Hill, Provost, Volinsky in their research *Network-Based Marketing: Identifying Likely Adopters via Consumer Networks* states that the probability of accepting new service or product is 3-5 times higher at prospects, who has social link to already existing customer than prospects who were chosen by the best practices of the traditional marketing. (Hill, Provost, Volinsky, 2006)

#### 3.5.4. SOCIAL MEDIA ANALYSIS

Social Media Analysis is also a new method and is expected to grow its importance in future as grows the popularity and importance of social media like Facebook, Twitter, LinkedIn and others in the everyday life. Core of this type of analytics tool is to collect great amount of data from online and analyse them in order to make business decisions. Customer Intelligence software give the possibility to companies to collect and analyse unstructured online social conversation data from various sources and use them for benefit of the company.

Research by Harward Business Review, Social Media: What Most Companies Don't Know, shows that 79% of surveyed companies are using or are planning to use social media, but 41% of them have problems to understand the potential of social media to make a difference in their business. (Ennes, n.d.)

Here again the first main step when doing social media analysis is to determine which business goals the data and the analysis will benefit. Required goals can vary from increasing revenues, getting feedback from customers, supporting public opinion or for example reducing service costs. Key performance indicators (for example number of follower on Facebook or number of positive comments) should be also defined ahead for better later measurement of outcomes. Setting the software in such way that it collects and analyses data important for company goals will help companies to gain advantage over its competitor.

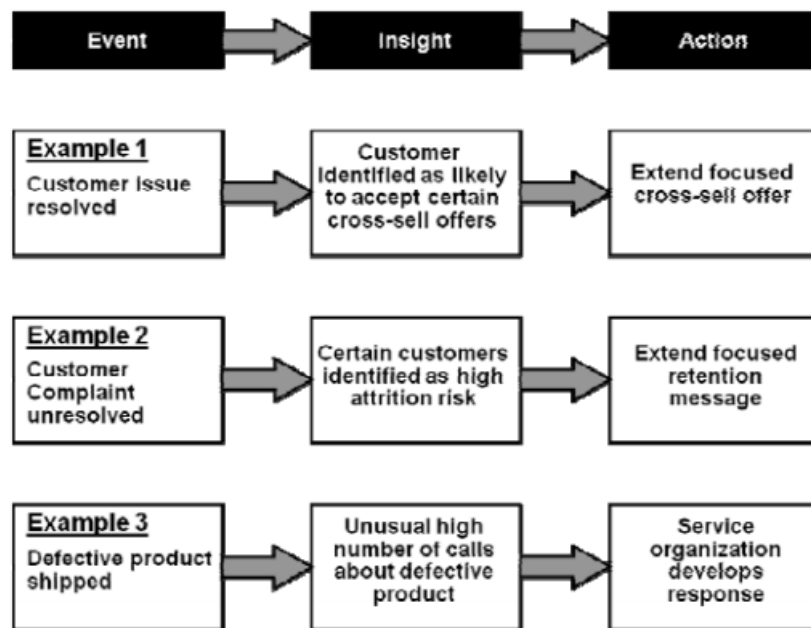
#### 3.5.5. REAL TIME DECISIONING

New trend in process of interacting with customer, which enables businesses to provide customers with personified offer or message in real time, is Real Time Decisioning. In the past, enterprise reactions to the market and customers' needs and wants were delayed as all the critical data had to stream through the systems, processes and applications that make up an information data flow and enterprise's transaction not flexible and cost inefficient. Real-time decisioning, an analytic process promises to allow organizations to automate the 'next best actions' based upon their objectives and goals. It analyses events as they happen, and based on them recommends actions that should be taken in order to achieve the defined performance goals. (Panian, 2007) The system can

modify the offer in real time based on the new information received. That means while the customer is still on the phone with the call centre or is still connected to the website. It combines analytics models, business rules and contact policy of a company.

Generally there are 3 steps in event driven marketing – marketing, where communication activities are based on customers’ events such as change in a customer's behaviour, needs, and unexpected action etc. (Bel, Sander, Weber, 2010) Initial step is event and its recognition. Insight is the phase, when company realize what is the customer most likely to do or need. And action is a phase where the company actively encourage customers to behave in predicted way or discourage to do so, depending on what the predicted behaviour is.

**Figure 3-5: Three steps in event driven marketing**



Source: Panian, 2007



In traditional organizations, to take the appropriate decision and action would take long days and weeks. In Real Time Decisioning it would happen immediately as “the promise of real-time decisioning is to provide actionable insight into business processes.” (Panian 2007) This solution is used especially in in-bound communication, for example when clients call to the call centre, service to sale, or log in to the web site. Let’s look at the case of website. A person opens a company website, at this moment the system activates and starts collecting data. It can follow all customer behaviour through observation of movement and actions within the webpage. That includes information about what sections of the page he/she visited, how long did he/she spent there, what sections he/she skipped, what did he/she downloaded but it can go into such details like observation of movements of the mouse! It can also identify landing page – a page from which the person entered company’s website, which can among other serve for evaluating the marketing and advertising activities. (SAS, 2013)

It would not have much business value to track and collect all the raw data, instead it is up to the company needs, what kind of data it will choose to collect and analyse. Based on this detailed view of behaviour of the client, the system simultaneously works on evaluating of these data, scoring of the customer, segmenting etc. Subsequently it can determine what should be the next best offer or next best action, for the customer and it is offered to him in real time, while he is still browsing the webpage.

This solution has high utilization in banking segment, where the system based on the actual behaviour (event) of the client (browsing for information about loans) and information about clients history can lead to immediate authorization and offering of loan. However, as there are not many companies so far working with Real Time Decisioning, it is still waiting for its time to become necessary tool for business processes.

## 4. ACTUAL WORK

If we think about the most important preconditions for successful and effective usage of Customer Intelligence tools we think especially of two things - customer base having at least 50 000 customers and access to customer data. The better the quality and variety of data the easier and effective the implementation and usage of Customer Intelligence. Telecommunication companies across the industry fulfil easily these conditions as their customer bases include millions of customers and thanks to the specifics of the industry they possess with different types and high quality data.

Using tools and intelligent software to support the loyalty and relationship with their customers, avoid churn and increase responses and revenues is a common thing in the industry. All the three main mobile providers in the Czech Republic – T-Mobile, Telefonica and Vodafone use similar tools from different providers to retain their customers and achieve other goals. (SAS, 2013)

The actual part of this thesis is dedicated to a research, whose main aim is to illustrate the benefit of Customer Intelligence tools. For this purposes the author of the thesis decided to use case of one of the three largest mobile services provider, which actively uses these solutions, T-Mobile a.s.

Primarily, data were received from interview between the author and CRM and Customer Experience Senior Manager at T-Mobile, Jan Šafařík; from company internal documents, public annual reports and analysis of Czech Telecommunication Office's reports.

Secondarily, to challenge the results received from T-Mobile's data, a questionnaire with 111 respondents was conducted in order to receive customers' opinion and feedback on company's marketing communication towards its customers directly from clients of the company.

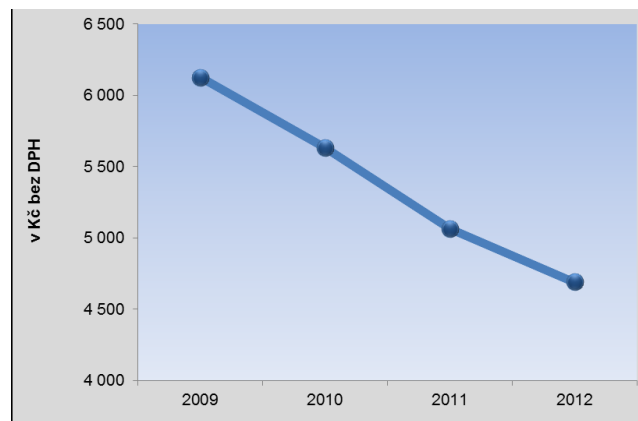
Simple random sampling technique was used to conduct the survey. The questionnaire was spread in between T-Mobile customers through internet – social networks, survey webpage [vyplnTo.cz](http://vyplnTo.cz) and by e-mail. Printed questionnaires were also distributed in order to

ensure representation of clients who do not have access to internet. All respondents were customers of T-Mobile and used personal SIM cards.

#### 4.1. SITUATION IN THE TELECOMMUNICATION MARKET IN THE CZECH REPUBLIC

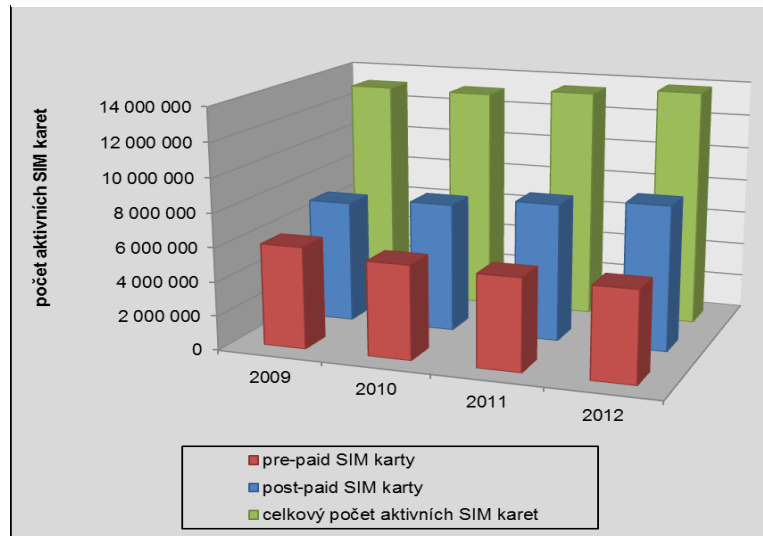
Czech market with telecommunication services is very competitive place, where business subjects must fight with other competitors to hold their position and their customers. It has two main characteristics: Firstly, the market is almost fully saturated; therefore companies do not have many chances to gain new customers unless they drag one from competitor, and secondly due to the high pressure on price lowering and high competitiveness the revenues of firms are falling down. The latter is documented in a report published by Czech Telecommunication Office in 2012 which says: „In 2012 total revenues from electronic communication services fall down by 1.9% to the level of 116.37 billion CZK. The highest yearly decline was recorded in mobile services, where the revenues dropped by 3.6% to the level 66.93 billion CZK. “(CTO, 2012) Year before, in 2011 the decline was even more significant, when the total revenues from electronic communication services were -6.4%. In mobile services the average revenue in 2008 - 2012 was -5.9%. Another index expressing the non-easy situation on the market is ARPU (Average revenue per user) which in the recorded period from 2009 to 2012 suffered from average yearly decline of 8.5%. This is indicated in figure 4-1.

**Figure 4-1: Average revenue per user for mobile services**



Source: CTO, 2012

**Figure 4-2: Growth in active SIM cards**



Source: CTO, 2012

On the other hand, investments into the mobile services are growing; in 2012 it was 3.8% and all three mobile operators (T-Mobile Czech Republic, a.s, Telefónica Czech Republic, .s., Vodafone Czech Republic a.s.) broaden coverage of inhabitants and area. (CTO, 2012) Even though in the last years observers could see fall in the revenues from mobile services across the whole industry, the penetration and amount of users (measured by number of active SIM cards) is gently increasing. Graph 4-2 shows development of amount of active SIM cards from 2009 to 2012.

The graph demonstrates that total number of active SIM cards, therefore users is growing, in 2012 by 2.8%. The growing trend is especially visible in post-paid SIM cards, where the growth in 2012 was 5.2%. On the contrary, number of pre-paid SIM cards is decreasing, in 2012 by 0.9%. (CTO, 2012)

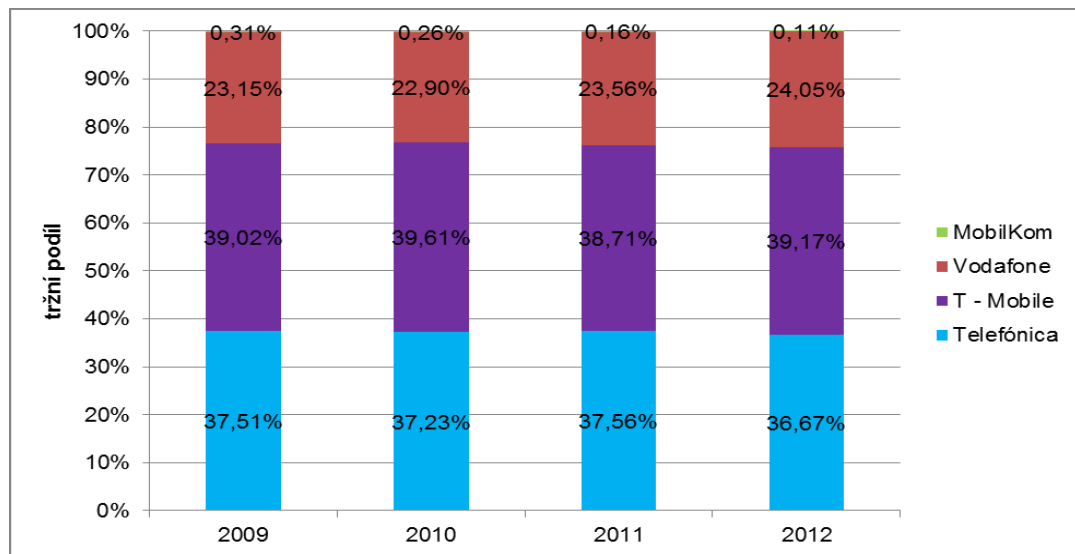
The trend of strengthening position of post-paid SIM cards at the expense of pre-paid SIM cards is welcomed by mobile operators as it means, that their customers are more tied to the company, have higher commitments to the company and generally their involvement in the mutual relationship is higher. The fact, that customers increasingly prefer using of post-paid services to pre-paid ones creates better opportunities for using Customer

Intelligence solutions in the industry, as operators are gaining more detailed insight of customers through collecting of users data, which is limited in case of pre-paid SIM cards.

#### **4.2. T-MOBILE: COMPANY OVERVIEW AND ITS POSITION ON THE MARKET**

T-Mobile Czech Republic is a member of an international telecommunication group Deutsche Telekom, which is one of the main integrated telecommunication organizations in the world. It has offices in more than 50 countries and employs more than 251 000 persons. It supplies mobile services to more than 131 million customers. It also runs approximately 37 million of fixed lines and 16 millions of lines for broadband internet. (T-Mobile 2013) T-Mobile Czech Republic a.s. was founded in 1996. At that time the company hold name RadioMobil, and since then it was offering its services under brand Paegas. In 2002 the company and the brand was renamed to T-Mobile a.s. Currently, the company serves to almost 5.7 million customers in the Czech Republic and is the largest local mobile operator. (T-Mobile 2013) The market share of T-Mobile and its competitors based on numbers of active SIM cards is shown in graph in figure 4-3. The graph proves that the market is stable, with no significant changes in market shares within the observed period. From the graph it is obvious that T-Mobile has the largest market share counted in numbers of active cards with 39.17% in 2012. The second largest provider in terms of active SIM cards is Telefónica with 36.67% and Vodafone with 24.05%. (CTO, 2013)

**Figure 4-3: Market shares of mobile services provider measured in number of active SIM cards**



Source: CTO, 2013

The diagram 4-4 below shows that T-Mobile more or less copies the trend in the industry. Total number of customers is slowly but slightly increasing while the proportion between pre-paid and post-paid customers is changing in favour of post-paid customers. Just in 2010 there were more post-paid customers than pre-paid and this trend is predicted to continue further.

**Figure 4-4: T-Mobile Financial and Operating Report (2005-2013)**

T-MOBILE FINANCIAL AND OPERATING REPORT (2005 - 2013)									
Year	HI 2013	2012	2011	2010	2009	2008	2007	2006	HI 2005
No. Of customers ('000)	5667	5498	5381	5475	5464	5422	5271	5 049	4 463
Post-paid	3210	3072	2872	2778	2660	2499	2228	1809	1178
Pre-paid	2456	2426	2509	2696	2804	2922	3044	3347	3285
Revenues in millions of CZK		26254	26836	29246	31472	33140	32482	29548	13 422
ARPU mobile service change		-4.7%	-8,9 %	-10,1 %	-7.2%	-0.2%	1.9%	2%	-2.8%
Churn	1.1	1.1	1.3	1.3	1.4	1.4	1.4	1.4	1
Churn change	0.0p.p	-0.2p.p	0.0p.p	-0.1p.p	0.0p.p	0.0p.p	-0.0p.p	+0.4p.p	

Source: Data T-Mobile 2005-2013, own elaboration

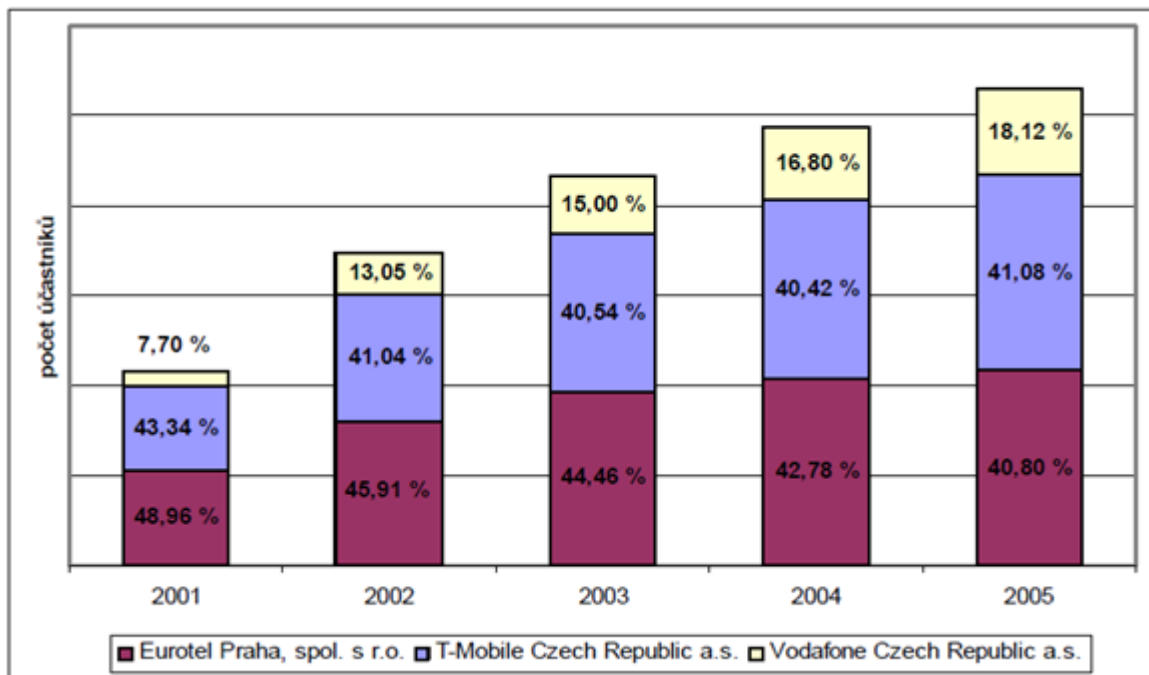
Even though T-Mobile still attracts some new customers and lightly strengthens its customer base, the revenues are falling down since 2008. This phenomenon demonstrates the competitiveness environment and pressure on price policies of companies.

Annual ARPU index (Average Revenue per User) has declining tendency, similar to the industry trend. But if we count average decline between 2009 and 2012 and compare it with the industry's average (diagram 4-1) we will find out that T-Mobile is doing better than the whole industry. While the industry's ARPU is - 8.5% in the given period, T-Mobile's ARPU is only -7.7%. Good numbers T-Mobile reaches also in churn rate.

#### 4.2.1. T-MOBILE'S DEVELOPMENT ON THE MARKET

It is not possible to measure the influence and benefit of implementation of Customer Intelligence directly by simple comparison of response rates on marketing campaigns or by measuring revenues on marketing campaigns as T-Mobile either do not have detailed data from period before implementation or the data are company confidential. Therefore, firstly the possible benefits of Customer Intelligence will be searched indirectly through the position of T-Mobile on the market. The position and its development over the time is shown on the diagram 4-5.

**Figure 4-5: Development in number of users a of mobile services and market share of mobile services providers**



Source: CTO, 2006

T-Mobile (RadioMobil at that time) entered the Czech market in in 1996 and began offering GSM service along with Teléfnica (Eurotel). Since then, Eurotel had the main position on the market with number of active SIM cards exceeding largely T-Mobile. (CTO, 2013)

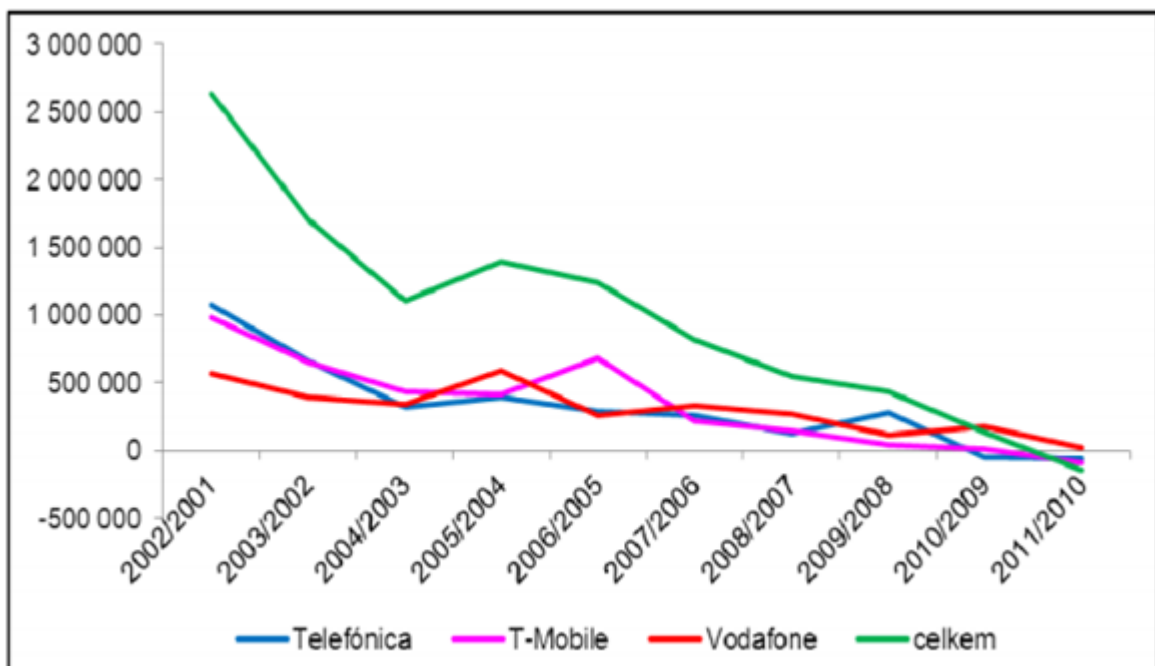
This development continued through the years as it is shown in the diagram 4-5. In 2005 for the first time in the history T-Mobile overleap Teléfnica by less than 1%. The solely fact that T-Mobile surpassed its competitor after almost 10 years of competition in 2005, one year after implementation of Customer Intelligence would not be sufficient to make conclusions on potential benefit of the tools. The trend of catching up on Teléfnica and shrinking the difference between the two companies was evident through the previous years and it was more matter of time than influence of new application of Customer Intelligence principles.



Nevertheless, if we look closer on the graph, we can also see that T-Mobile's acquisition of new customers was decelerated and its market share was lowering from 43.34% in 2001 to 40.42% in 2004. (A same phenomenon is visible in Telefónica.) One of the main reasons is probably the entrance of the third operator to the market and therefore intensification of competition. Vodafone a.s. entered Czech market in 2000 and started quickly acquire new customers and attract customers from already established companies. (Vodafone, 2013) Interesting fact, which could point out the positive influence of Customer Intelligence tools is that in 2005, again one year after implementation of the software, T-Mobile stopped losing its market share and even started to grow again, while its main competitor was still fighting with its negative trend.

Also diagram 4-6 shows an interesting phenomenon in T-Mobile from 2005 up to 2007. In this period, the year over year increase in number of active SIM cards was significant in T-Mobile in comparison with other operators and in comparison over time. The straight and fast increase can be again partially explained by implementation of Customer Intelligence in 2004.

**Figure 4-6: Year over year increase in SIM cards by mobile services providers**



Source: CTO, 2012

The straight and fast increase could be partially explained by implementation of Customer Intelligence in 2004. But it is definitely not the only explanation as there are a large number of factors influencing acquisition of new customers. This specific significant increase in number of new customers is probably more than Customer Intelligence caused by massive marketing campaign during which in 2005 T-Mobile distributed largely free pre-paid SIM cards in the streets to random people. (Sanigová, 2012) The evidence of benefit of Customer Intelligence is than disputable and hardly provable.

#### **4.3. T-MOBILE AND CUSTOMER INTELLIGENCE**

The examination of T-Mobile on the market did not show reliable proves of benefits of Customer Intelligence. This section will examine the internal environment of the company based on the interview with T-Mobile representative and based on analysis of internal documents.

The customer base of 5.5 million people imposes huge requirements and responsibility on marketing department, especially in company which wants to follows the trend of customer centric marketing. In annual report from 2012 T-Mobile states that it focus on “identifying and developing activities and actions aimed at increasing customer satisfaction and the relevance of our products, boosting the efficiency of our activities, strengthening corporate culture and customer orientation” and “in the area of customer satisfaction, we want to reduce the number of complaints and unnecessary calls and failures in our network, and fine-tune a number of internal processes by 2015 in order to be able to act with greater flexibility and be more capable on the market.” (T-Mobile 2012)

But there are some challenges telecommunication company has to deal with such as increasing competition, pressures on lowering the prices or facilitating of easier transition to competitor (for example: due to the transferable phone numbers).

The market is highly saturated and there are not many opportunities for mobile operators to attract totally new customers. Retention of current customers is therefore crucial for mobile operators.

To protect the company from the market influences and in order to retain the strong position of the firm on the market T-Mobile decided to use Customer Intelligence solutions to manage the customer experience and retain customer loyalty. Today, 30 to 40 marketing campaigns are launched every month in T-Mobile. They carry different messages and are designated to different recipients. According to Jan Šafařík, Senior CRM and customer experience manager, a company moves from Above the Line to Below the Line communication and direct communication once its customer base is filled, and the company is forced to concentrate on retention and development of its current customers rather than attracting new ones.

In case of T-Mobile, this break point occurred in 2004. Until then the company was trying to draw in new customers and for this purpose was using largely mass communication tools without paying much attention to developing or cross-sell / up-sell activities. Nowadays, the customer base is full and the main aim for the company is not to attract new customers, but to maintain and develop the existing ones.

Figure 4-7 shows through which communication channels T-Mobile uses for communication with its customers.

Historically T-Mobile relied heavily on SMS channel. Even today this channel is one of the most used in communication with customers; however the utilization has changed significantly. While still a couple of years ago, till 2004, the SMS campaigns were distributed to hundreds of thousands of customers without any deeper logic or target group selection, nowadays the whole process is much sophisticated. The number of SMS campaigns has risen from dozens to hundreds of campaigns per year while based on the data from the diagram the average target group of any single campaign dropped dramatically to somewhere around 60 thousand customers. Practical reasons behind the popularity of SMS campaigns are relatively low costs for the company, high quality of contact details (phone number) or possibility to add a picture (MMS) or use wap push (special form of SMS which appears directly on the customer's mobile phone without need of opening it).

Direct mails as well as e-mails, which were highly used in the past, are now rather losing their importance. Instead T-Mobile introduced colored printed and electronic invoices (Barefa and Elf) with banners carrying marketing messages.

Of high importance is system Wintell, which is kind of support for sales kiosks and info line. When the customer calls in the system identify who is calling and assign the customer with an offer, which is communicated through the sales person or the info line employee.

In the near future, T-Mobile intends to go further and employ Real Time Decision solution. T-Mobile believes that offering products in real time based on a customer driven event will increase response rates and revenues further off. Šafařík can see potential of the solution in situations when for example customer changes his address. Based on this event, the system evaluates possible relevant offers and passes them to the customer. In this case, DSL or internet to home service are products, which are of high chance to attract customer's attention. So far, T-Mobile is testing this tool and does research on what data should be collected online and what campaigns are suitable to execute on this solution.

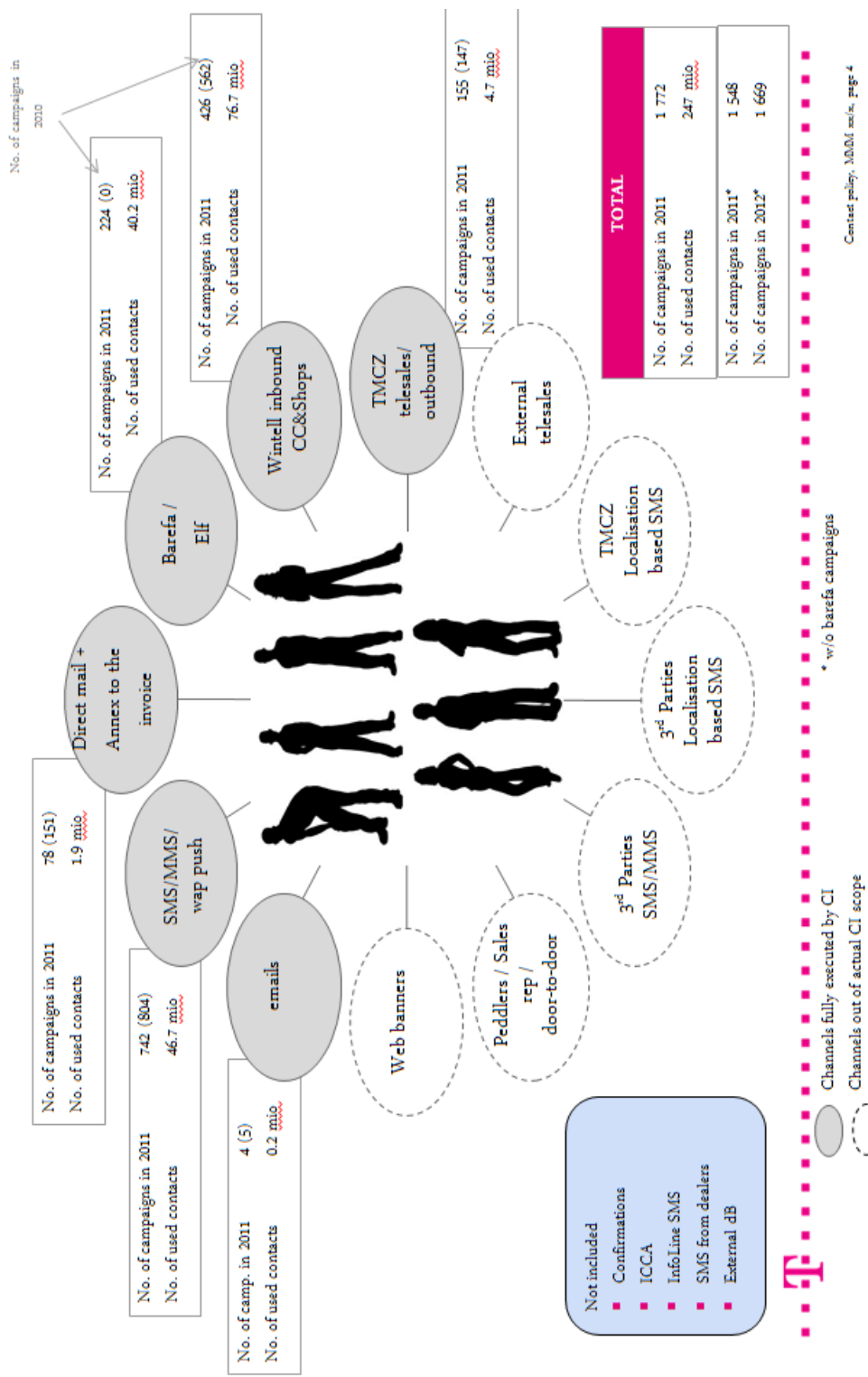
Besides above mentioned communication channels, which are in T-Mobile fully executed by Customer Intelligence software, the company uses other means of communication such as telemarketing campaigns, which are run through external call centers and external agencies, web banners, door to door sales representative and Šafařík also mentions a new trend in the industry - campaigns of third parties. (Interview 20.9.2013)

Offering of services of third parties includes for examples applications for smartphones, TV services but also insurance of mobile devices or paying possibilities through mobile phones. These additional services are demanded by customers and bring additional revenues to company

Figure 4-7: Direct marketing campaigns in T-Mobile

# 1.772 direct marketing campaigns in 2011

## 247.000.000 used contacts



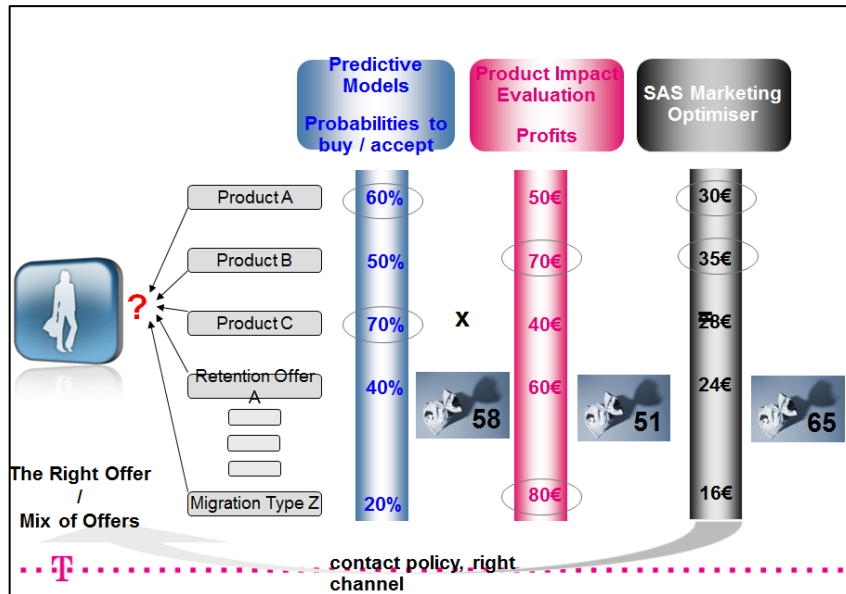
Source: T-Mobile, 2013

In order to prevent customers from congestion with too many messages and offers, which would be contra productive and might harm customer relationship, T-Mobile implemented company contact policy. The package of set rules should ensure that customer will in total get no more than 13 offers in 30 days interval through channels included in the contact policy (some channels such as door to door sales and web banners are not included in company contact policy). Restrictions on throughput of channels were put in place, so there are set limits of maximum number of messages sent through each channel. But on top of that 13 offers from T-Mobile, there are campaigns of third parties, which can add 5 additional offers per month. That means that in extreme scenario customer can receive up to 18 offerings per month! (T-Mobile 2012)

T-Mobile campaigns, to which the contact policy is applied, are executed through Customer Intelligence tools SAS Marketing Optimization and SAS Marketing Automation, (diagrams 4-9 and 4-10).

The usage of solutions which in broad perspective work on similar principles as Customer Intelligence, thus collection, analysis and further work with data, is wide and goes across the company. Different suppliers serve to Finance department, HR, Technology and other departments within the company. The supplier for Marketing department, which is responsible for marketing campaigns executions, marketing analysis, pricing etc. is American company SAS.

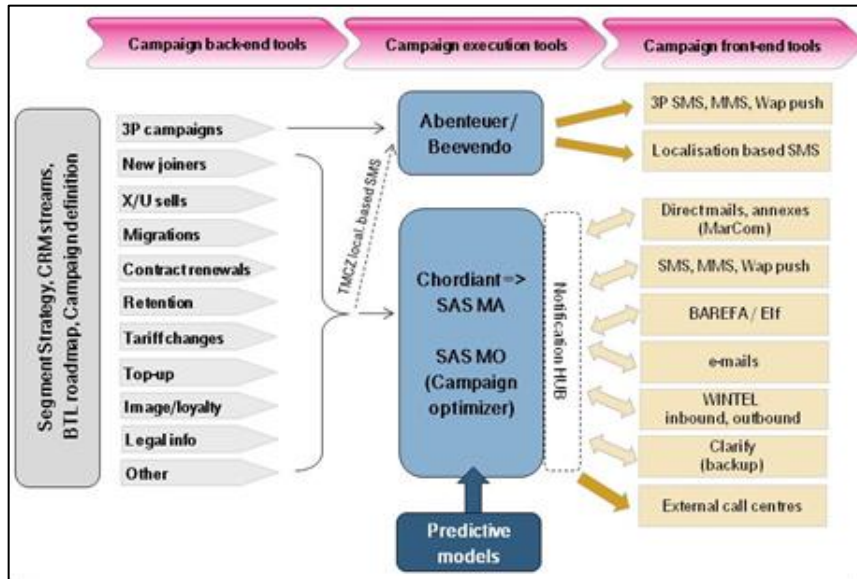
**Figure 4-9: Marketing Optimization**



Source: T-Mobile 2013

Marketing Optimization works as analytical decisioning body, which counts the best combination of customers and products in order to achieve the biggest profit possible. When interviewed on 20 September 2013, Mr. Šafařík described how the system works: „When we have let’s say 10 products and we have propensity to buy models, therefore we know the possible financial benefit from the product, we insert these information into the machine and it multiplies the probability to buy with the expected profit. By doing so, it creates a list of relevant offers on level of single customer. We aim on having two best offers, which should be communicated to the customer. “(Mr. Šafařík 2013, pers.comm. 20 September)

**Figure 4-10: Campaign Execution**



Source: T-Mobile, 2012

The reasons for investing large amount of money into intelligent software for marketing activities were primarily the efforts to operate within wide scale of marketing channels, introduction of company contact policy and automation of marketing campaigns and their evaluation. New solutions were searched by the whole Deutsche Telecom group which aimed at increasing profits from CRM activities and improving efficiency.

Mr. Šafařík thinks that most of the goals were reached with one exception being receiving responses from all channels used for communication. He adds that this is rather problem of IT architecture within the company.

Mr. Šafařík sees a great advantage of Customer Intelligence solutions in their integrity and complexity. The system links together the work with data, analysis and reporting along with the work on direct campaigns. It maximizes effectiveness and profitability. In his opinion the Customer Intelligence solution is a must for a company of this size. He argues that without these solutions they would still be able to execute marketing campaigns and send direct mails, e-mail and SMS to their customers via other basic software, but this would lack any business logic. The costs of marketing campaigns would be higher while



the revenues from such campaign would be much lower. Šafařík says: “Speaking in numbers, we would lose tens or maybe hundreds of millions of CZK every year.” He supports his opinion by declaring that thanks to the Customer Intelligence T-Mobile revenues from marketing campaigns increased orderly by tens of millions of CZK per year while the costs have decreased. Also the demand on human capital is lower. The number of employees dedicated to work on marketing campaign was cut to only five persons. The share of marketing activities on the total turnover of company which is app. 20 billion CZK, is somewhere around 250 - 350 million CZK.

Other great benefit Šafařík points out is a cut in time needed for execution of the campaigns and ability to work with large amount of data. Before having these tools the segments were groups of hundreds of thousands customers grouped together on very lax rules. Today, the segments have well-defined rules and group significantly smaller number of customers with similar characteristics. Very specific messages or offers can be sent to segment counting only few thousands of customers. This is done by the same or even smaller number of employees. The lower demand on time and human capital enables also to execute larger number of campaigns. Nowadays T-Mobile executes tens of marketing campaigns per month.

Even though T-Mobile does not automatically evaluate the success of each and every campaign and does the evaluation manually for only selected campaigns, the improvement of response rates is visible. Of course every campaign has different response rates based on its attractiveness and the channel used. Certain campaigns can reach 15% response rate, but this is rather exception. Other, especially campaigns for pre-paid customers are less successful. This can be explained by worst knowledge of pre-paid customers and lack of data about them. Generally the response rates swim around units of percent. But still certain improvement is visible.

Another pointer, which T-Mobile does follow, is development of churn. T-Mobile is able through the software identify group of customers with high probability to churn and even state how high the probability is by using analysis of the patterns in customer behaviour. In this case for example, it analyses decline in number of calls, or changes in scatter of calls – from domestic network to competitors one. In the organization where Customer Intelligence is not used not only that the most vulnerable customers would not be

identified, but they would also be targeted with general marketing offers, which would most likely not have much of value to the. T-Mobile on the other hand is able to offer same special retention deal to these customers in order to save them.

But Šafařík also mentions that when they tried to contact these customers who were selected by the system and find out what are their reasons which drive them out of the company, they found out that many of these customers did not plan to leave at all. Plus the system requires certain stability in data and therefore if there are unexpected fluctuations or cut in data flow; the system does not work properly. This was a case in 2013 when the competitor company Telefónica drastically decrease its prices for mobile services and caused significant changes in the market. This interrupted the historical continuous line and the system had to be switch off for several months.

If we take data from table 4-11 we can see, that the average churn is historically quite low in comparison for example with churn in T-Mobile US, where in 2013 they recorder record low branded post-paid churn of 1.58% (T-Mobile US, 2013).

But important is the fact, that from 2005, when the first official information on churn rate were published, to 2006 the churn jumped rapidly by 0.4 percentage points to the level of 1.4%. That represents annual increase of almost 72% in churn! This might be a serious reason for implementing tools for churn prediction and this is exactly what happened in T-Mobile. In 2006 T-Mobile decided to implement solutions to predict customer churn. From this point on, the numbers got stabilised and the trend was even reversed into declining one.

**Figure 4-11: T-Mobile Financial and Operating Report (2005-2013)**

<b>T-MOBILE FINANCIAL AND OPERATING REPORT (2005 - 2013)</b>									
<b>Year</b>	<b>HI 2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>HI 2005</b>
<b>Churn in %</b>	1.1	1.1	1.3	1.3	1.4	1.4	1.4	1.4	1
<b>Churn change</b>	0.0p.p	-0.2p.p	0.0p.p	-0.1p.p	0.0p.p	0.0p.p	-0.0p.p	+0.4p.p	

Source: T-Mobile 2005-2013, Own elaboration

It might seem as negligible progress, but the difference of 0.3 percentage points (2006 compare to 2013) can make a loss/profit difference of more than 71 million a year. (Assuming the number of customers is constant) Explanation is shown in figure 4-12.

**Figure 4-12: Impact of Churn on Revenues**

Customer base in 2012:	5 498 000
a. Churn rate 1.4% represents?	76 972 leaving customers every year
b. Churn rate 1.1% represents:	60 478 leaving customers every year
Monthly ARPU in 2012:	362 CZK (4 344 CZK yearly)
<hr/>	
<b>a. Loss of Profit with 1.4% churn rate:</b>	<b>76 972 x 4 344 = 334 366 368 CZK</b>
<b>b. Loss of Profit with 1.1% churn rate:</b>	<b>60 478 x 4 344 = 262 716 432 CZK</b>
<b>Difference between a and b:</b>	<b><u>71 649 936 CZK</u></b>

Source: Own elaboration

However, Customer Intelligence is not the only explanation of decreasing character of churn. There are other contributors which influence the churn. In this case especially, it can be result of the mass marketing campaign already mentioned above, in which loaded pre-paid SIM cards were distributed massively for free and which artificially rapidly increased number of active SIM cards on the market, thus number of customers. But once these free SIM cards run out of credit their new owners simply stopped using them and that catapulted the churn rate shortly. After the massive attrition of these customers, the situation got slowly stabilised and churn rate started to decrease to its original level. So the decreasing character of churn rate cannot be explained solely by positive influence of Customer Intelligence, but by set of other factors as well.

Mr Šafařík thinks that the company is not the only one who benefits from Customer Intelligence, but according to him also customers of T-Mobile are winners. Thanks to the Customer Intelligence the company gained better knowledge and insight of its customers and due to the logic and analysis behind the campaigns customers are not spam with irritating messages, but rather they receive relevant offers.

With the set rules of contact policy the frequency of receiving messages from T-Mobile is more tolerable and every customer is able to restrict the marketing communication from T-Mobile if he or she feels disturbed by it.

#### **4.4. CUSTOMER'S PERCEPTION OF T-MOBILE**

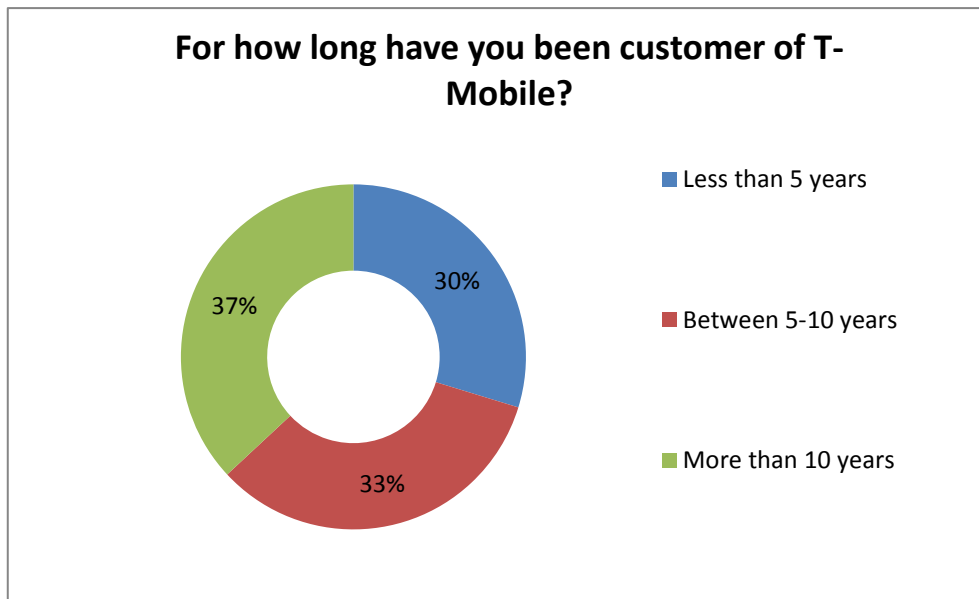
From the existing research it is obvious that there are at least certain benefits of using Customer Intelligence. But these are mainly dedicated to the company as it allows it more and faster campaigns executions with better customer targeting while lowering the costs. If also customers do benefit from using Customer Intelligence solutions and if it empowers the mutual relationship and support customer's loyalty as it claims it does will be examined in this section.

One hundred and eleven respondents were asked 13 questions regarding their opinion and feelings about T-Mobile and its marketing communication towards them. They were asked to compare their happiness with the company, their loyalty and other aspects

with any other companies from whatever industry, whose customers they are. The results of the surveys are shown in following graphs.

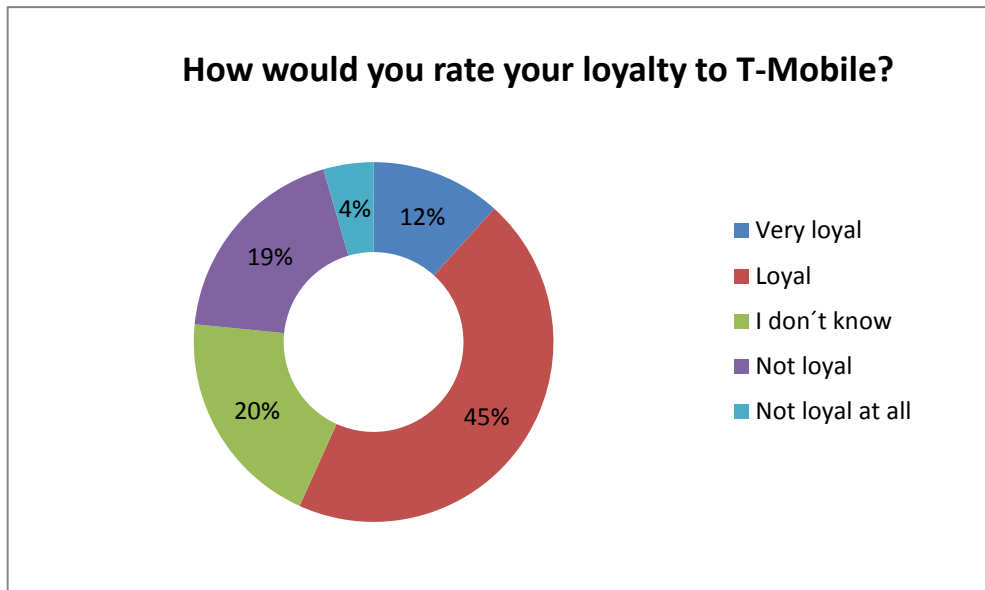
Figure 4-13 shows that 70% of T-Mobile's customers are with the company for more than 5 years. The largest portion of respondents, 37% are using T-Mobile even longer, for more than 10 years. This looks as great numbers for T-Mobile, indicating that customers tend to stay with the company for very long time. This is supported by Figure 4-14 which shows that more than half of the respondents feel loyal or very loyal to the company.

**Figure 4-13: Question 1**



Source: Own elaboration

**Figure 4-14: Question 2**

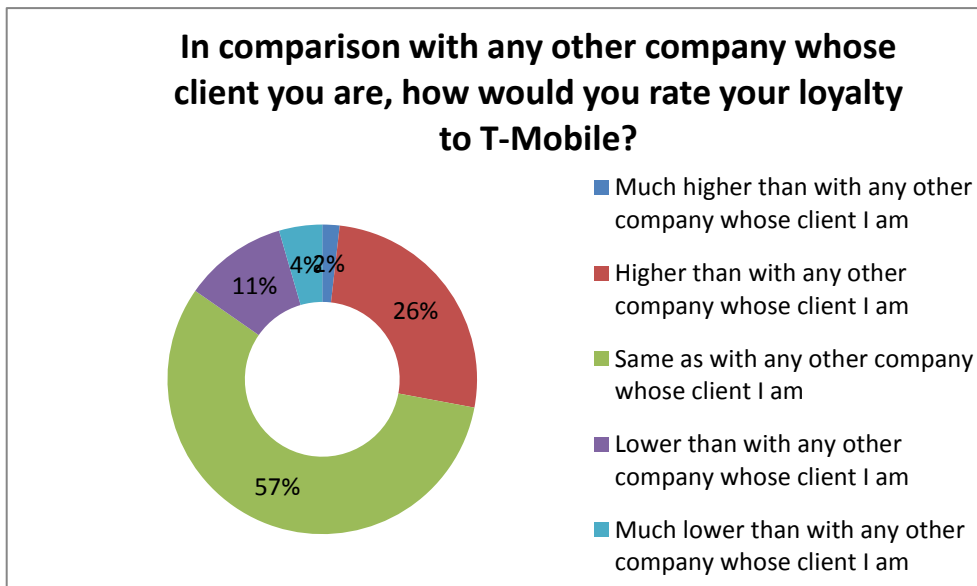


Source: Own elaboration

But when respondents were asked how they would rate their loyalty towards T-Mobile in comparison with any other companies whose clients they are, majority of them said they feel the same loyalty to T-Mobile as to any other company. Only 28% said they feel higher or much higher and 15% answered they feel lower or much lower commitment to T-Mobile than to any other company. (Figure 4-15) This result shows that T-Mobile is not doing better in terms of customer loyalty than average.

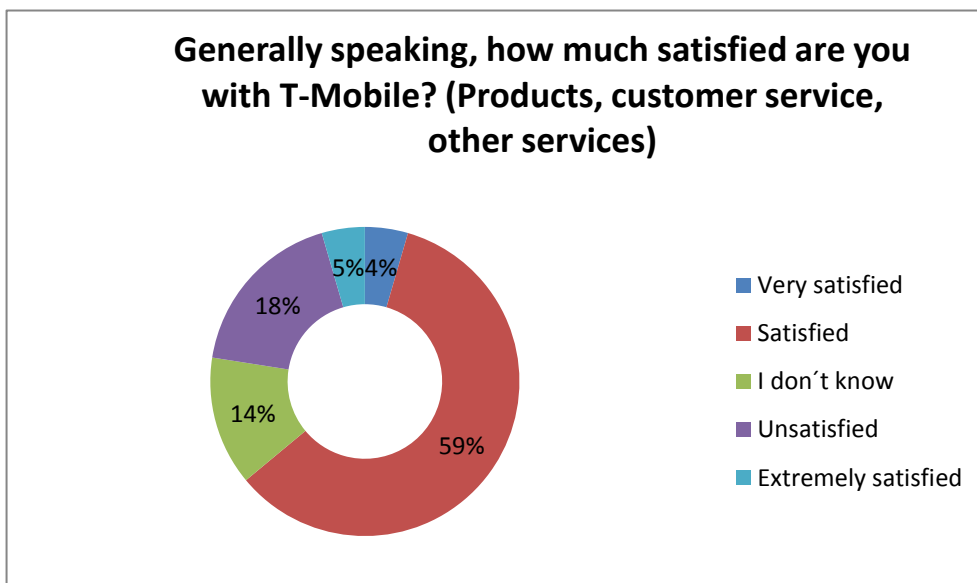
General satisfaction of customers with T-Mobile, regarding its product offer, customer service and other factors is quite high. (Figure 4-16). But again, in comparison with any other companies T-Mobile is not doing exceptionally well as it shown on Figure 4-17. Rather T-Mobile does more less same as others. Its clients are not exceptionally satisfied or dissatisfied with the company.

Figure 4-16: Question 3



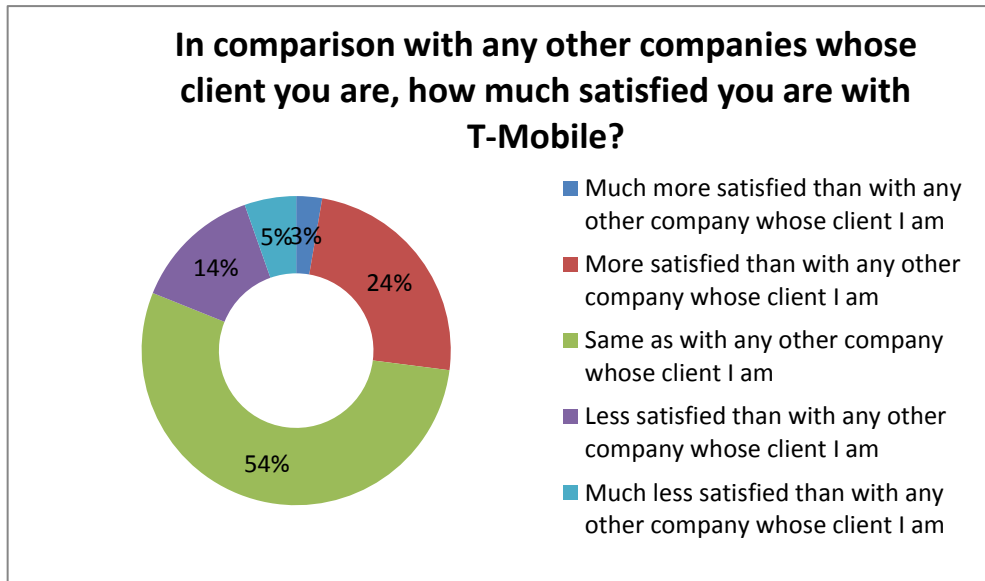
Source: Own elaboration

Figure 4-15: Question 4



Source: Own elaboration

Figure 4-17: Question 5

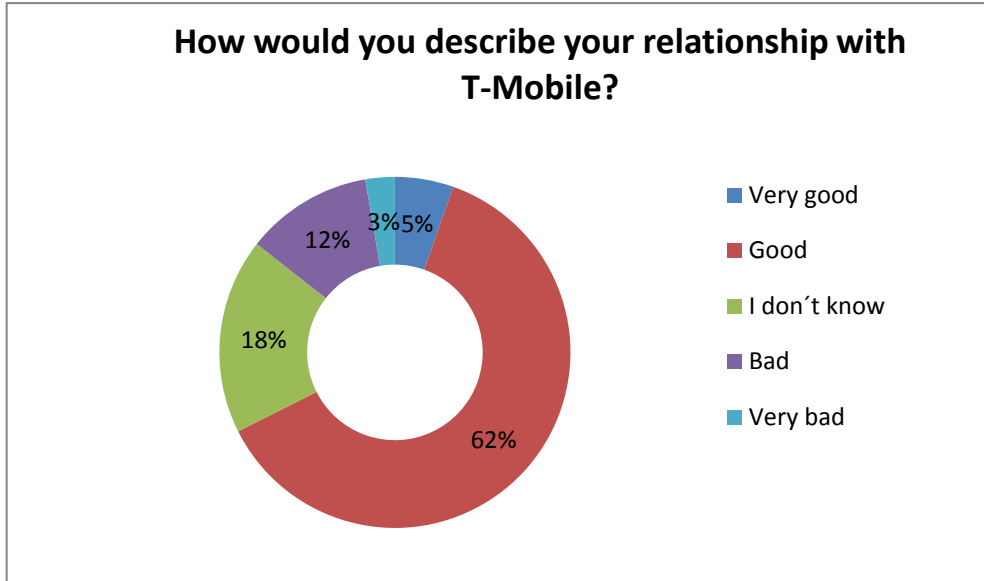


Source: Own elaboration

When respondents were asked to evaluate their relationship with T-Mobile most of them described it as a good. (Figure 4-18). But only 26% of them would say they have better relationship with T-Mobile than they have with other companies. Majority, 55% says they have same relationship with T-Mobile as with other companies. (Figure 4-19)

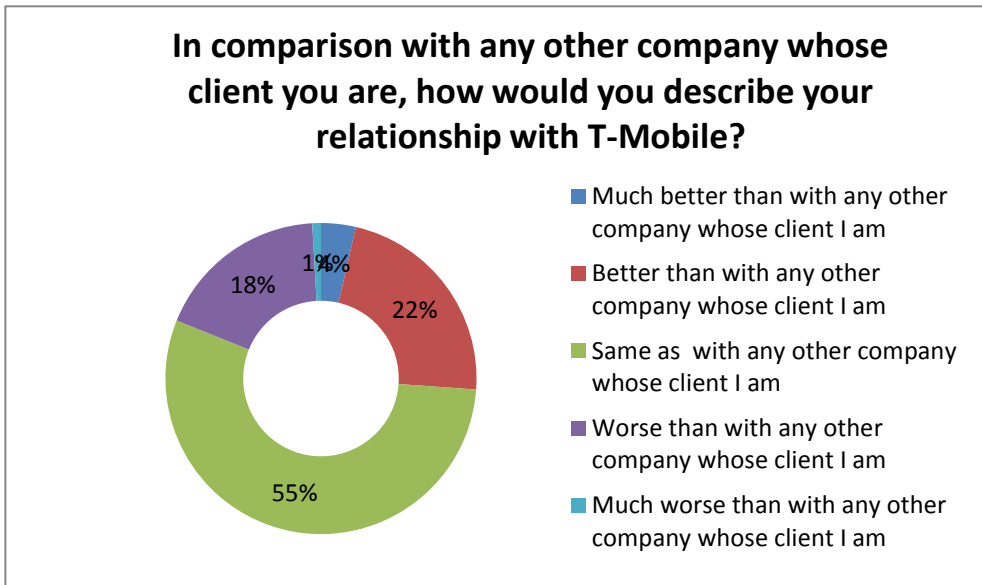


Figure 4-19: Question 6



Source: Own elaboration

Figure 4-18: Question 7

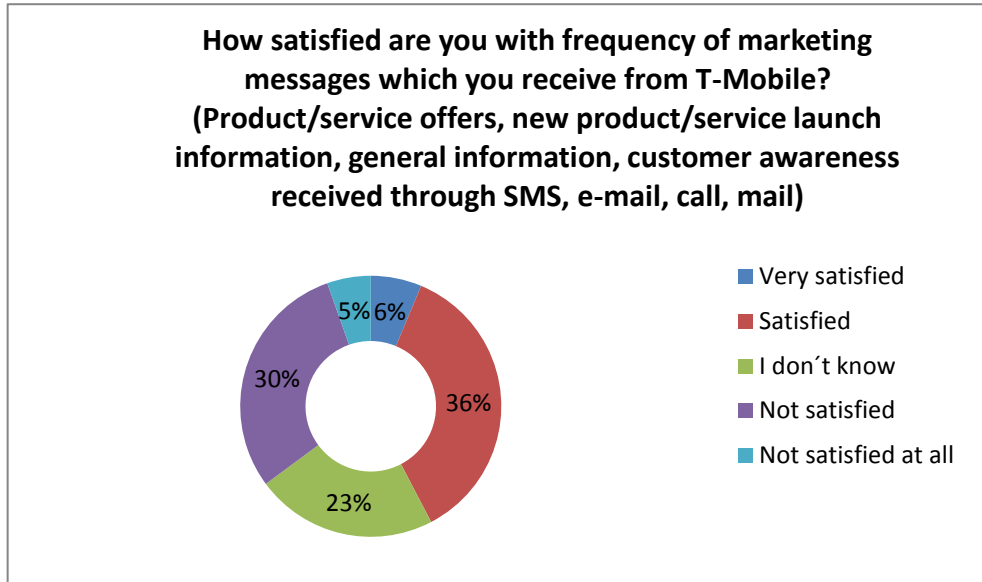


Source: Own elaboration

In question number 8 respondents were asked how they are satisfied with the frequency of marketing messages they receive from T-Mobile. This includes product or service offers, information on new product launch, special offers and other. From the figure 4-20 is obvious, that there is almost the same number of satisfied customers as of unsatisfied ones. That means that even with the contact policy which T-Mobile put in place and with the set of rules which has to be followed when contacting a customer, T-Mobile did not succeed to satisfy more 42% of customers. On the contrary, whole 35% of respondents are not happy with the frequency of marketing messages from T-Mobile. That means that they either feel like receiving too many messages or not receiving enough.

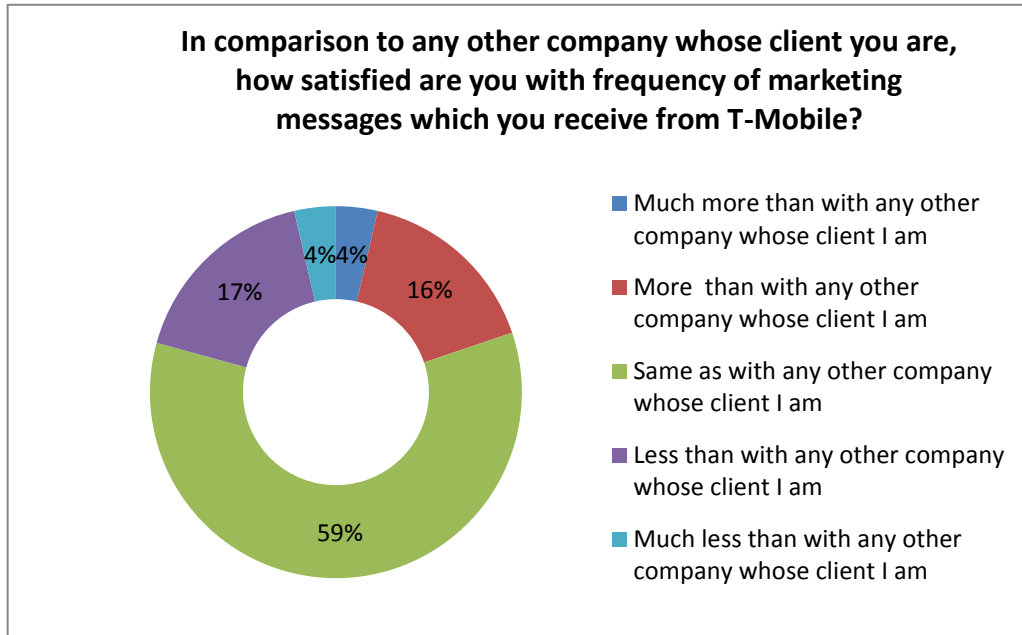
Good news for T-Mobile is that based on Figure 4-21 customers are apparently not happy with the frequency of marketing messages in general, because T-Mobile was not evaluated worst in comparison with other companies. Answers in question 9 were extremely balanced, putting T-Mobile again to average.

**Figure 4-20: Question 8**



Source: Own elaboration

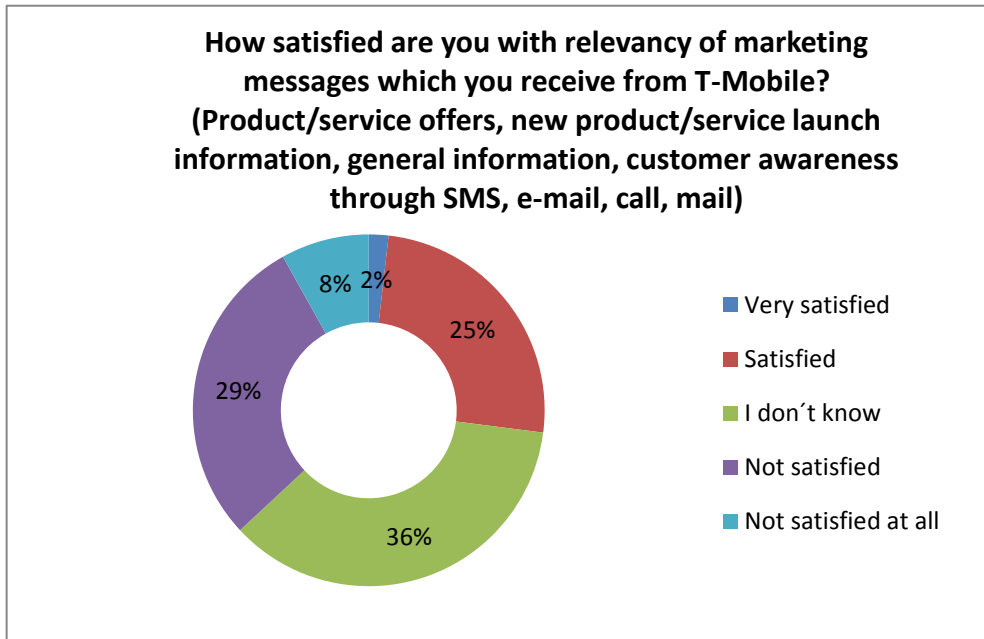
**Figure 4-21: Question 9**



Source: Own elaboration

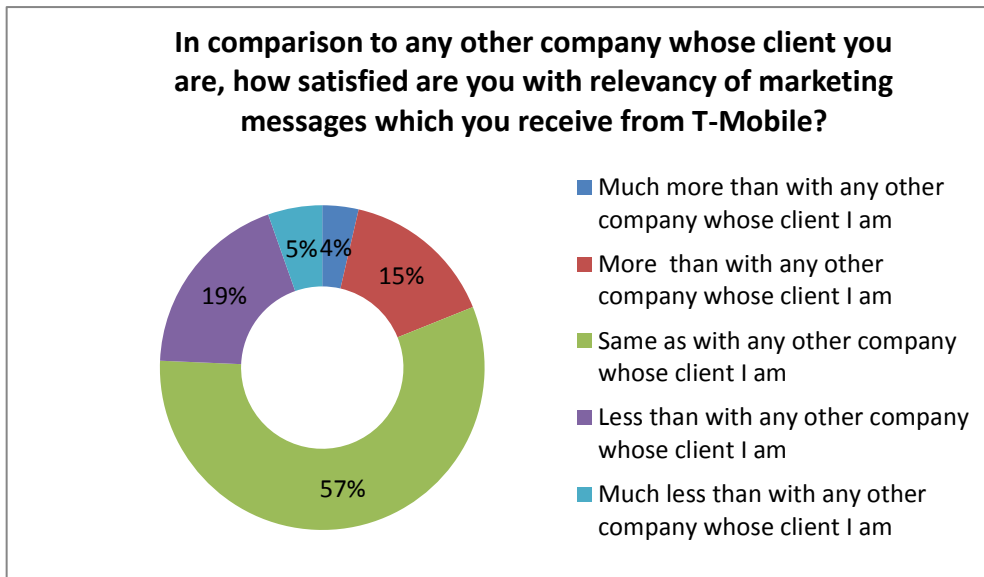
Bad news for T-Mobile is fact that in questions on satisfaction with relevancy of marketing messages the company is not doing well neither, even though the relevancy of marketing messages is something which is perceived as one of the biggest benefits of Customer Intelligence. Figure 4-22 shows that the unsatisfied customers exceed the satisfied ones by 10%. And even worst fact for T-Mobile is that in this field the company is doing worse than average as explained in the Figure 4-23. This is an important and probably the most interesting finding in the research as it contradicts and contests one of the most proclaimed features of Customer Intelligence solution.

**Figure 4-232: Question**



Source: Own elaboration

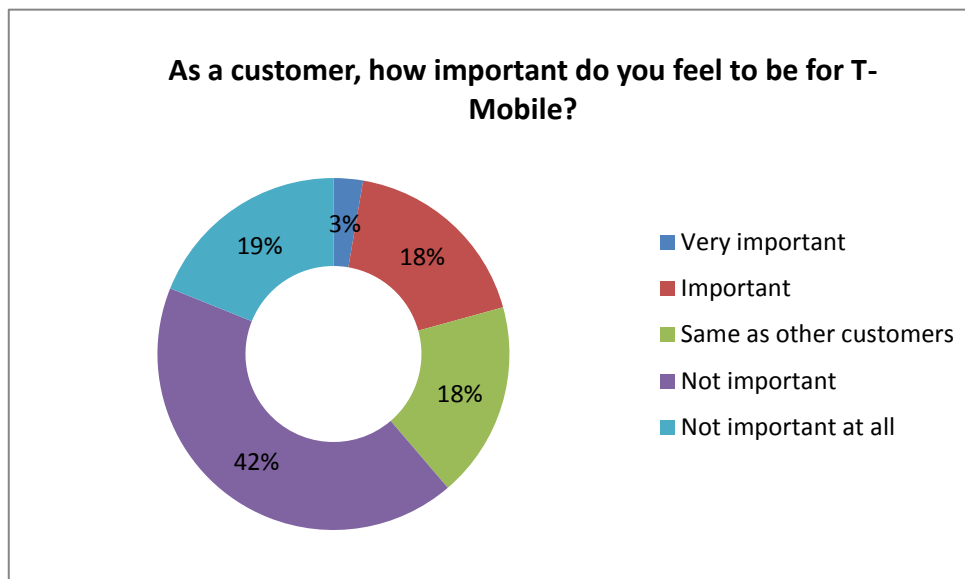
**Figure 4-223: Question 11**



Source: Own elaboration

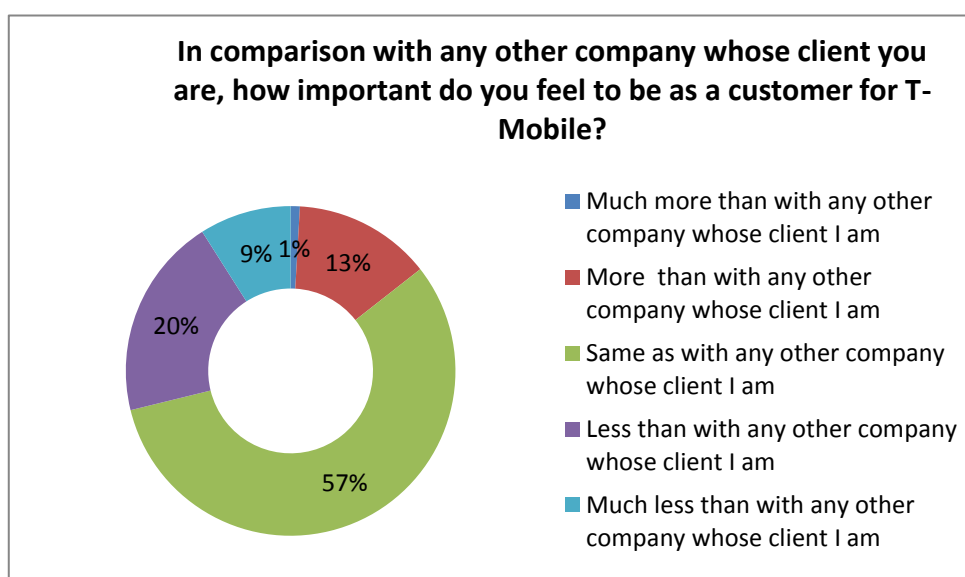
Last two questions asked were focused on subjective feelings of respondents about their importance for T-Mobile. Only 21% of customers feel important or very important to T-Mobile. Most of the customers feel not important to the company. Here again T-Mobile is doing worse compare to any others companies.

**Figure 4-24: Question 12**



Source: Own elaboration

**Figure 4-25: Question 13**



Source: Own elaboration

## 5. RESULTS AND DISCUSSION

Vendors selling Customer Intelligence solutions promise companies to make their business more profitable and effective by using data about their customers and by searching for hidden patterns within them. They persuade companies, that with help of such solutions they can improve their relationship with customers and strengthen their loyalty. They say that well targeted, right communication conducted at right time is what customers are looking for and what makes them buy. The aim of this thesis was to show on the real example how the solutions work and try to prove its claimed benefits.

For the research of the benefits the author of the thesis chose a telecommunication company T-Mobile. Firstly the whole telecommunication market and position of T-Mobile within it was observed in order to discover any irregularities, deviations or clues which would point out the gains of Customer Intelligence. But all situations which could indicate the positive impact of Customer Intelligence in T-Mobile, such as steep increase in number of active SIM cards in 2005, one year after implementation of CI solutions could be similarly explained by many other factors. In this example for example by massive marketing campaign during which T-Mobile distributed pre-paid SIM cards for free. Therefore, from the comparison of the market's and the company's data, the reliable conclusions could not be made.

Second part of the research is devoted to the structured interview conducted with the representative of T-Mobile, who is in charge of CRM and Customer Experience. There are several areas, where Mr. Šafařík sees the main gains. Firstly it is the ability to execute much larger number of campaigns than the company was used to without the solutions for the same or even lower costs. This saves and brings back to T-Mobile tens of millions annually. Also according to him the response rates are higher, even if the increase was not extremely high.

Another thing which Mr Šafařík points out is decreasing churn rate. Thanks to the predictive models the software can estimate which customers are about to leave and the company than can take appropriate actions to prevent the churn. Churn in T-Mobile is slightly decreasing from 2007. He also thinks that because the company implemented a

contact policy and messages are more focused and relevant customers benefit as well. This claim was challenged in the next part of the research.

The last part shows, how customers themselves sense the presence of Customer Intelligence. The survey was focused on areas, where customers could be affected the most by the solutions. That is their satisfaction with relevancy and frequency of outbound marketing communication from T-Mobile, their loyalty and their relationship towards the company. Respondents were asked to compare T-Mobile with any other companies, whose clients they are and from the results, if T-Mobile would do better, deduce the gain of Customer Intelligence. But the survey showed that in loyalty, relationship and general satisfaction T-Mobile is not exceeding other companies and is doing same as others. Important finding was that customer's satisfaction with relevancy of marketing messages from T-Mobile, which is perceived as one of the main benefits of Customer Intelligence, was under average in comparison with other companies. Unsatisfied customers exceed the satisfied ones by 10%.

## 6. CONCLUSIONS

Some of the big companies of 21<sup>st</sup> century, who have hundreds of thousands and millions of customers and no chance to know each of them and no chance to establish a personnel relationship with all of them tries to find other means how to strengthen customer relationship and how to ensure loyalty of their customers. Marketing communication is crucial and that is why companies invest large amounts of money into sophisticated CRM software.

From all the findings in this thesis, it can be concluded that the biggest value of Customer Intelligence in marketing management is the automation of marketing campaigns which enables faster and easier execution of campaigns. Companies can do more campaigns with more specific content, better segment their customers and predict customer's behavior. In T-Mobile, Customer Intelligence also helps to reduce churn rate and improve response rates. It helps T-Mobile to be more effective, save some unnecessary costs and be more profitable.

From the hypothesis set at the beginning of the thesis we can therefore accept the second thesis, which was stated like this: "Customer Intelligence solutions significantly help companies to improve marketing processes and increase their effectiveness."

On the other hand the results of the questionnaire deny that T-Mobile would have better relationship with its customers than other companies, or that customers would perceive T-Mobile better than other companies. All the efforts invested into better targeting of marketing messages in order to offer customers only products which they are most likely to buy and need seems unfulfilled, at least from the questionnaire conducted with 111 customers of T-Mobile.

Therefore, the other hypothesis which was stated: "Customer Intelligence helps companies to improve customer relationship and customer's perception of the company", can't be accepted based on this research.

Customer Intelligence can be recommended to companies which intend to use data about their customers for better effectiveness of their marketing campaigns, which need to segment their customers and which want to automate its processes. Companies which



want to predict customers' behavior and gain deeper insight of their customers in order to increase campaign response rates and profits will benefit from the Customer Intelligence.

But companies, whose aim is to create an extraordinary long lasting mutual relationship with its customers, will probably not find much of the benefit in Customer Intelligence solution. To create a special link between a company and a customer will probably take more effort and creativity than just buy and use intelligent computer software.

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## **8. APPENDICES**

### **8.1. SURVEY QUESTIONS**

For how long have you been customer of T-Mobile?

- Less than 5 years
- Between 5-10 years
- More than 10 years

Generally speaking, how much satisfied are you with T-Mobile? (Products, customer service, other services)

- Very satisfied
- Satisfied
- So-so
- Unsatisfied
- Extremely satisfied

In comparison with any other companies whose client you are, how much satisfied you are with T-Mobile?

- Much more satisfied than with any other company whose client I am
- More satisfied than with any other company whose client I am
- Same as with any other company whose client I am
- Less satisfied than with any other company whose client I am
- Much less satisfied than with any other company whose client I am

How would you describe your relationship with T-Mobile?

- Very good
- Good
- So-so
- Bad
- Very bad

In comparison with any other companies whose client you are, how would you describe your relationship with T-Mobile?

- Much better than with any other company whose client I am
- Better than with any other company whose client I am
- Same as with any other company whose client I am
- Worse than with any other company whose client I am
- Much worse than with any other company whose client I am

How would you rate your loyalty to T-Mobile?

- Very loyal
- Loyal
- Not loyal
- Not loyal at all

In comparison with any other companies whose client you are, how would you rate your loyalty to T-Mobile?

- Much higher than with any other company whose client I am
- Higher than with any other company whose client I am
- Same as with any other company whose client I am
- Lower than with any other company whose client I am
- Much lower than with any other company whose client I am

How satisfied are you with frequency of marketing messages which you receive from T-Mobile? (Product/service offers, new product/service launch information, general information, customer awareness received through SMS, e-mail, call, mail)

- Very satisfied
- Satisfied
- So-So
- Not satisfied
- Not satisfied at all

In comparison to any other companies whose client you are, how satisfied are you with frequency of marketing messages which you receive from T-Mobile? (Product/service offers, new product/service launch information, general information, customer awareness received through SMS, e-mail, call, mail)

- Much more than with any other company whose client I am
- More than with any other company whose client I am
- Same as with any other company whose client I am
- Less than with any other company whose client I am
- Much less than with any other company whose client I am

How satisfied are you with relevancy of marketing messages which you receive from T-Mobile? (Product/service offers, new product/service launch information, general information, customer awareness through SMS, e-mail, call, mail)

- Very satisfied
- Satisfied
- So-So
- Not satisfied
- Not satisfied at all

In comparison to any other companies whose client you are, how satisfied are you with relevancy of marketing messages which you receive from T-Mobile? (Product/service offers, new product/service launch information, general information, customer awareness through SMS, e-mail, call, mail)

- Much more than with any other company whose client I am
- More than with any other company whose client I am
- Same as with any other company whose client I am
- Less than with any other company whose client I am
- Much less than with any other company whose client I am

As a customer, how important do you feel to be for T-Mobile?

- Very important



- Important
- Same as other customers
- Not important
- Not important at all

In comparison with any other companies whose client you are, how important do you feel to be as a customer for T-Mobile?

- Much more than with any other company whose client I am
- More than with any other company whose client I am
- Same as with any other company whose client I am
- Less than with any other company whose client I am
- Much less than with any other company whose client I am