

BUSINESS MODEL FOR COST OPTIMIZATION IN CUSTOMER CARE SECTORS OF TELECOMMUNICATIONS OPERATORS THROUGH DIGITAL TRANSFORMATION

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Abstract: There are several business models for analyzing the effects of digital transformation on the customer care sectors of telecommunications operators. They emphasize several aspects, the most important of which are user experience, cost optimization and revenue maximization. The main goal of this paper is to analyze the business model based on cost optimization. The paper also aims to present and analyze the quantitative parameters that measure the impact of digital transformation in the analyzed business model. In the paper, using the method of analysis and specialization, the various aspects of the business model for cost optimization in the customer care sectors are elaborated, presenting a model based on the use of new digital technologies. Furthermore, in the paper, using methods of analysis and specialization, the most effective parameters with which the effect of digital transformation can be measured are defined and proposed. The main three potential areas for analysis in the business model based on cost optimization are: prevention of cost increase, increase of efficiency in the execution of tasks and automation. The area that has the greatest potential for a direct effect on cost optimization is automation, which is based on technologies such as robotics, virtual experts, virtual agent support and interactive voice response. Automation with robotics is of particular interest to companies today, which is why special attention is given in the paper. The second objective of the paper, which refers to proposing quantitative parameters for measuring the impact of digital transformation, is elaborated in three key areas, namely operational efficiency, customer experience and revenue maximization. To show the complete picture of the process and the progress of digitalization of business processes in the customer care department, it is necessary to analyze all three areas. Based on the research done for the purposes of this paper, it is proposed to monitor the indicators volume of calls, waiting time, call abandonment rate, average handling time, first call resolution rate, cost per call/ interaction/resolution and employee satisfaction score. In addition to operational efficiency parameters, it is recommended to monitor the parameters related to user satisfaction with the services received. Recommended indicators are Net Promoter Score, Touchpoint Net Promoter Score, Customer Satisfaction index, and Customer Effort Score. An excellent customer experience should undoubtedly be expected to influence an increase in revenue, and for this purpose it is recommended to monitor the parameters of the churn rate, customers lifetime value and market share.

Keywords: Cost optimization, customer care department, digital transformation, automation, digital transformation parameters, telecommunication sector

1. INTRODUCTION

Research in recent years and analysis of databases with user data show that efficient business processes for customer care are becoming one of the main factors for overall customer satisfaction and achieving a competitive advantage in the market (Baranauskas, 2018). The customer care department, as a vital component in any company, should focus on the long term to achieve outstanding performance in three key areas: customer experience, cost optimization and maximization of revenue (McKinsey, 2016), whereby the following three objectives should be achieved:

1. *Providing a high-quality and individual user experience to customers* using the various channels for communication with customers using new technologies.
2. *Achieving significant operational effectiveness and cost efficiency* by reducing the volume of calls through direct contact with a digital solution, which represents a huge opportunity to reduce contacts with a physical person and save certain resources.
3. *Creating opportunities to generate new revenues* by offering specific services based on the individual needs of the users, with which the satisfaction of the users would be at a high level.

To achieve these goals, companies should first invest in management and in improving the appropriate skills of employees (Blasini & Leist, 2013). It is very important to empower agents to be able to create individual and relevant offers in different channel for different customer. New technologies should provide real-time recommendations and support the process with appropriate and relevant information for the user. Organizations often have trouble reaping the benefits of investments in new technologies. The reasons for this lie in two fundamental areas. First, as companies focus on technology to reduce call volume in call centers, it allows customer experience and satisfaction to become less of a priority than implementing a digital solution. Second, by thinking that technology would solve the problems of high volume of incoming calls, companies lose focus on core operations and upset the balance between human interaction and automation (Attaran, 2004).

Digital customer service channels benefit both businesses and customers in a variety of ways. Successful digital customer service across channels can have the following impacts on the company or the customer (Mihardjo et al., 2019):

- Increase the level of customer or employee satisfaction by reducing the effort to get a solution that will help customers in real time.
- Supporting agents with the various technology solutions, automation tools and data they need to effectively address customer requests.
- Improving communication by keeping traditional user centers and providing different channels of communication and availability of information for users.
- Reduce costs by streamlining call center operations, increasing human agent productivity and reducing time spent on individual requests.

In general, new technology should modernize customer centers. In doing so, it should enable agents to use their working time more efficiently and can deliver better quality services to users at lower prices.

Companies' operational plans in customer centers should prioritize operational resilience, such as flexible work models, flexible workspace and virtualization of key business processes, security protocols and policies. Plans can have the following elements:

- *Enhanced business continuity planning.* Business continuity planning must be a frequent and well-defined process. It is necessary to have an answer with different scenarios of the operation of a company. As an example, the impact of the COVID-19 pandemic can be cited, when companies were forced to include digital solutions as a service in a very short period. While call volume may decrease, complexity will likely remain high as customers resolve simple issues on their own, and for more complex ones they will only approach a call center. Strategies to enable remote work and increase flexibility should consider technology and talent and include customizable plans and access from any location (KPMG, 2020).
- *Rapid iteration and experimentation.* Increasing customer acceptance of digital solutions and a sense of urgency around customer needs provide an opportunity for experimentation. Instead of striving for perfection, companies should implement an atmosphere of testing and learning that allows them to quickly develop and apply effective change management. Companies should regularly inform customers about ongoing improvements to service support from customer centers based on digital solutions (Roy, 2018). Educational processes for customers should be organized so that all users can use the services. Also, a significant part of this process is customer feedback on the use of services.
- *Targeted investments.* Solutions based on new technologies should be flexible enough to support future innovations. For example, companies improve services in certain communication channels every day. It goes without saying that depending on the quantitative parameters obtained from different technologies, the company should focus on the most profitable solution. But if the investments allow flexibility, they should help in the process of experimentation and as a final result to implement a process and service from which the company itself will profit, but at the same time the satisfaction of the user will be at the highest level.

2. MATERIALS AND METHODS

For the purposes of this paper, secondary data was used the research the topic. Literature review was used as the main method for obtaining secondary data, including theoretical and background data through books, scientific papers and articles. Empirical research was conducted using the exploratory method, which produced significant secondary data and a basis for establishing the research. The data was processed by utilizing the descriptive method, analytical method and the method of generalization.

3. CHALLENGES AND BARRIERS IN DIGITALIZATION

Businesses are constantly under pressure to keep up with ever-changing technological advances. While the benefits of digitizing the customer care department are significant, the challenge of developing and implementing a

profitable digital plan is not understated. Companies face various challenges and barriers when implementing new technologies in their processes, and we would single out the following as more important:

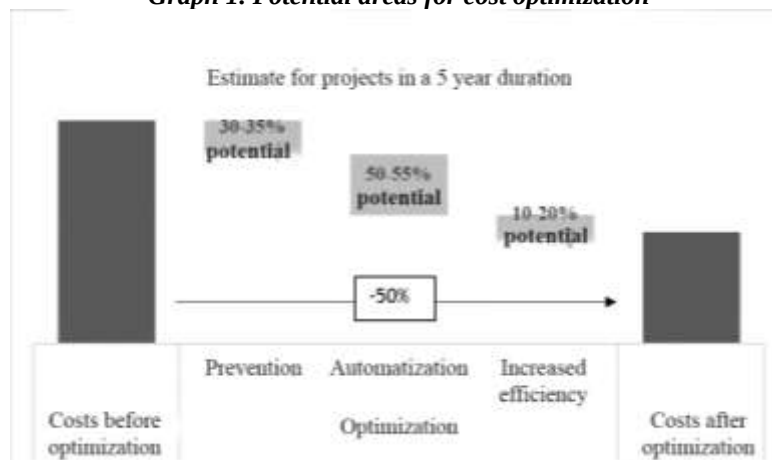
- *Budget constraints* - Lack of adequate financial resources prevents companies from adopting new technologies. Most technology tools are expensive to purchase, install and maintain.
- *Inadequate skills* - Experts often develop new technology tools that require agents to attend regular training to acquire the necessary skills. Sometimes the speed at which new tools are launched prevents agents from acquiring the necessary skills (Chessbrough, 2010).
- *Inefficient network infrastructure* - Tools for new technologies require support from an adequate network infrastructure. The absence of a reliable network infrastructure creates barriers that hinder the effective adoption of tools for the digitization of business processes (Cichocki et al., 2012).
- *Resistance to change* - In practice, most agents show resistance to change, but with appropriate change management strategies these barriers are easily overcome.
- *Lack of appropriate systems* - Providing agents with digital tools is critical to improving their confidence in using technology to perform their daily duties.
- *Insecure devices* - The lack of reliable devices and software creates significant barriers to the adoption of new technologies (Feshchuk, 2017).
- *Uncertainty* - Information security issues prevent companies from adopting technology tools to improve day-to-day tasks (Pereira & Santos, 2014).
- *Conflict of interest* - New technologies require the company to adapt and introduce changes, the acceptance of which usually requires a certain period of time (Hall & Rosenberg, 2010).

4. BUSINESS MODELS FOR DEVELOPMENT OF INNOVATIVE DIGITAL SOLUTIONS

There are several business models that emphasize several aspects, the most important of which are: user experience, cost optimization and revenue maximization. Within this paper we will emphasize the business model based on cost optimization. The possibilities for cost optimization are shown in Figure 1. As the basic three potential areas for analysis in this model are: prevention of cost increase, increase of efficiency in the execution of tasks and automation. In order to prevent the increase of costs, applications are used that are based on the use of digital channels. To achieve this goal, the business processes of various departments in the company are also being optimized, all with the aim of reducing the volume of calls from users. Examples of cost-cutting activities are the introduction of a service that is charged additionally, the introduction of the company's website answers to the most frequently asked questions, or the optimization of mobile applications.

The area of increasing efficiency in the performance of tasks is directly related to the automation and optimization of processes (Dustin et al., 2009). However, despite the direct connection there are other factors that would help reduce costs. One of them is the regular monitoring of the agents' performance daily and their additional education if there is an opportunity to improve their knowledge. Various trainings and additional trainings contribute to increasing efficiency in performing tasks. Also, simplifying systems and direct access to all information with just one application has a direct effect on increasing efficiency and reducing costs related to the human factor (Mohapatra, 2009).

Graph 1. Potential areas for cost optimization



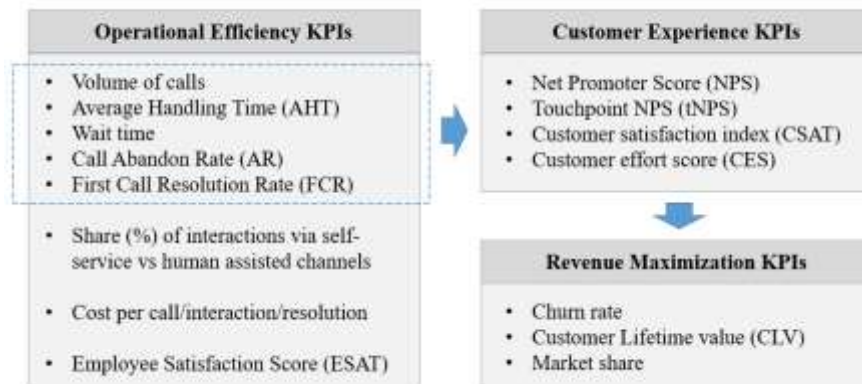
Source: Own research

Another area that has great potential for a direct cost optimization effect is automation, based on technologies such as robotics, virtual experts, virtual agent support and interactive voice response (Lacity & Willcocks, 2018). Automation with robotics is of particular interest to companies today, which is why it will be elaborated in the next section.

Quantitative parameters for displaying the performance of digital systems

Nowadays, there is almost no company that does not go through digital transformation and does not use new technologies to improve its economic performance. At the same time, management is focusing on investments in digital technologies in a way that will drive the company's future growth.

1Graph 2. Quantitative parameters for digital transformation



Source: Own research

There are two ways to measure the impact of digital transformation: through quantitative parameters or through qualitative business analysis (Ahmat et al, 2021). In this paper we will elaborate the quantitative parameters in three key areas:

- operational efficiency,
- customer experience,
- maximizing income.

To show the complete picture of the process and the progress of digitalization of business processes in the customer care department, it is necessary to analyze all three areas. An overview of the quantitative parameters is presented in Figure 2. One of the most important indicators of operational efficiency is the Volume of calls that come to the customer call center. Hours, days, weeks or months can be taken as quantitative parameters in the calculation. Knowing this parameter allows for proper planning of agents' schedules. Another important parameter for measuring productivity is Wait Time, i.e. how long it takes agents to answer calls. When users call, the least they expect from the service is a long wait to be connected to an agent. If the call is dropped during the waiting period, it is a sign of a bad user experience that can lead to a lost user. Long waiting times can lead to call abandonment (measured by the quantitative parameter for Abandon Rate). This parameter covers calls when a user hangs up prematurely before an agent can answer or resolve the issue. In order to reduce waiting times for customers, call center agents should be continuously trained to be able to answer calls quickly and efficiently. Their efficiency is reflected in the average response time (Average Handling Time AHT). This indicator shows the average time it takes to resolve a problem received through phone calls (Salam, 2006). The faster a solution to the problems received from the calls is obtained, the shorter the waiting time of other users.

In addition to a good average response time, it is important to display a parameter that measures how often calls are resolved on first contact. This is reflected in the First Call Resolution Rate (FCR). If the user has to call again to find a solution to the problem they are having, it is a sign of a bad user experience. If the customer care department resolves issues quickly, it goes without saying that this is a sign of a positive customer experience.

Investments in digital solutions (for example, a virtual expert) will positively influence certain indicators (for example, waiting time, call abandonment rate). However, one cannot always immediately expect an immediate result of improvements in certain indicators, such as the first call resolution rate (FCR). To reach a level of full optimization from digital technologies it is necessary to develop and improve cognitive characteristics. This requires time and significant investments in different solutions. With the implementation of digital solutions for customer care of special importance is the parameter the percentage of interactions on the communication channels where the

user individually interacts with the digital solution in relation to the number of interactions directly with a physical person. This indicator shows how quickly customers adapt to new technologies and abandon traditional ways of communication.

To analyze the financial aspect of operational efficiency, it is necessary to measure the costs per call/interaction/resolution (Cost per call/interaction/resolution). The goal of any company is to reduce costs while maintaining and eventually increasing customer satisfaction. To measure this quantitative parameter, the calculation can add up the corresponding operating costs (salaries, IT support, training, licenses, overheads, etc.) and the corresponding capital expenditures, and divide the sum by the total number of calls/ interactions/tickets. An important parameter for operational efficiency is certainly the Employee Satisfaction Score (ESAT). The customer care department has one of the highest attrition rates. Measuring employee satisfaction with their work, processes and teams can alert to any problems or risks of them leaving. In this way, recruitment and training costs can be reduced. In addition to operational efficiency parameters, the parameters related to user satisfaction with the received services should also be continuously monitored. The most important indicators in this segment are Net Promoter Score (NPS), Touchpoint Net Promoter Score (tNPS), Customer Satisfaction Score (CSAT) and Results for Customer Effort Score (CES).

Net Promoter Score (NPS) measures customer loyalty and the likelihood that the customer will recommend the company to other people. The Net Promoter Score looks at the overall, long-term perception of a brand and is measured by consumers' responses to the question of how likely they are on a scale of 1 to 10 to recommend the company to a friend or colleague. The index is calculated as follows:

$$\text{Net Promoter Score} = (\text{Promoters Users \%}) - (\text{Dissatisfied Users \%})$$

Whereas promoting users are those users who gave a rating of 9 or 10, while dissatisfied users are those users who gave ratings from 1 to 6. Net Promoter Score is considered a key parameter by many telecommunication companies. A customer's willingness to promote a brand is strongly correlated with their satisfaction and loyalty, which, in turn, affects a company's growth and profitability. By focusing on customers and analyzing their behavior, the indicator makes it possible to identify the origin of dysfunctional processes and prevent the occurrence of bad experiences (Bekker, 2018).

Touchpoint Net Promoter Score (tNPS) measures the Net Promoter Score of a specific touchpoint, be it a call center, voice bot, point of sale or mobile customer app. Comparing parameters across different channels can be a good indicator of process performance improvement.

Another simple way companies can measure user experience is through a Customer Satisfaction Score (CSAT). It is a parameter that measures satisfaction with a company's product, service or specific interaction. The indicator is calculated as a score on a scale from 1 to 5 given by users when asked how satisfied you are with their recent interaction or purchase service, i.e., support.

The Customer Effort Score (CES) measures how much effort it took to get a solution to a particular problem. This parameter depends on several factors, including time spent, total interactions with the user, and number of calls from the user. To determine this parameter, users rate their experience on a scale from very easy to very difficult.

An excellent customer experience will undoubtedly influence an increase in revenue, which can be described by the following indicators: Churn rate, Customer Lifetime Value (CLV) and Market Share. Abandonment rate is the rate at which customers stop using services from a company at a given point in time. The calculation of this indicator is as follows: Abandonment rate = Number of departing users / Total user base. The higher the churn rate, the more the respective company's user base shrinks. Total customer value represents the average customer revenue generated over the entire period of using the company's services. Excellence in operational efficiency and customer experience would bring a desirable competitive edge in the market and the company can count on gaining additional market share over the competition.

5. CONCLUSIONS

Investing in new technologies can be seen to improve company performance and the realizations of managers and employees. However, the human factor in the customer call center remains vital in three dimensions. It highlights the importance of choosing the right balance between human interaction and automation and the need for continued focus on core customer call center operations.

First, as transactional calls shift to digital channels, interactions of a more complex nature account for most of the workload in traditional call centers. It should be considered that interactions of a more complex nature have a higher average service time, which can create pressure on the capacity of the call center despite the absence of calls of a simpler nature.

Second, the call center may be dealing with new call volume that it has not handled before. As organizations place new higher demands on efficiency, many are moving face-to-face interactions to lower-cost communication

channels offered in the customer call center. For example, if for many customers obtaining a specific package upgrade in the past required a physical presence in a store, today it can be done over the phone at customer call centers. In addition, customer call centers take advantage of digital channels to reduce certain types of calls and free up capacity to handle calls that were previously abandoned due to long waiting periods.

Third, customers expect increasingly personalized, immediate and individual service that may require a balance between human and digital interactions.

It can be concluded that human interactions will not disappear. Call reduction is likely to be more successful through a dual track that leverages the best of technology while improving the performance of human-based interactions that access a customer call center call. Some of these calls are critical and have a major impact on customer satisfaction and often the purchase of services.

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