



# Complexity of Creating Customer Experience under the Influence of Digital Transformation

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**Abstract:** *In a digital context, the customer experience represents a complex field of competition for companies in the process of retaining loyal and attracting new customers. The digital transformation paradigm, in the technological and business aspect, should create value for the customer and increase the customer experience easier. However, challenges such as dynamic market changes and disruptions leading to increasingly complex customer requirements, make customer journey management a critical field for companies. This paper presents a preliminary review and provides insight into the problems of building loyalty and increasing customer experience under the influence of digital technologies. The recognized problems, according to secondary data, indicates that the potential of customer experience management with the help of digital technologies was not achieved. In this paper, recommendations for the elimination of mentioned problems were defined and how usage of digital technologies can contribute to building loyalty through analysis, monitoring, and support of customer journey.*

## 1. INTRODUCTION

Today, for companies is very difficult to adapt and improve the customer experience through static plans which provide an analysis of the processes and the impact of various changes that could be achieved. As a consequence, the customer experience (CE) is presented as a competitive field which in the new digital context implies the fighting for a position between manufacturers and as such is considered of great interest in the marketing field (Nurcan et al., 2020). The reasons for this are the needs and preferences of customers that are rapidly changing, becoming more complex, requiring an adapted approach and constant upgrading of services and products (Cay et al., 2019); (Silhavy et al., 2019), and users are also co-creators of its own value (Matarazzo et al., 2021). Digital transformation is a paradigm that fundamentally changes the business of companies, which does not refer exclusively to the technological aspect but includes strategy, culture, people, and business models. It seems that with all the technological and business advances, creating value for the user and increasing the user experience should be easier. Nevertheless, in the scientific literature, these claims have been mentioned with caution and some problems in the context of the customer journey are emphasized. Building customer loyalty in the digital age largely requires the digital transformation of processes and actions that analyze, track, and support customer journey (Prabowo et al., 2021). This segment remains omitted in the strategic development of companies because it requires additional effort in research and development of this complex area individually, and companies are already focused on the digital transformation of the entire business. The complexity of this field stems from managing changing customer behavior, understanding complex data and information about them, and implementing the optimization process for customers. Also, business in the marketing segment requires the transformation of business models, integration of various digital technologies, and

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adaptation to changing business conditions (Nurcan et al., 2020). Despite the complexity of tracking customer journey processes, which ultimately has a significant impact on the customer experience, digital transformation provides an opportunity to change that. If companies want to build loyalty, they need to change and adapt, as research by consulting firm Gartner found that 57% of customers stopped buying from the company because a competitor offered a better experience, and 67% of customers are willing to pay more for a better customer experience (Nurcan et al., 2020). Digital transformation has a significant impact on the quality of products and/or services and the perception of value (Nguyen et al., 2020). Digital technology involved in marketing processes can increase perceived value due to quality collaboration and interaction during and after the purchasing decision making process, resulting in loyalty building. The four ways how digital transformation affects the customer experience and transforms the information needed in this segment are understanding customers, enabling sales activities, managing customer touchpoints, and integrating digital capabilities (Nurcan et al., 2020). This aims to transform the customer experience and achieve awareness with the help of informativeness, entertainment, social presence, and sensory appeal (Matarazzo et al., 2021). This paper provides insight into the issue of increasing customer experience and building loyalty in a revolutionary age where everyday disruptions change the needs and expectations of customers. The main goal of this paper is to recognize problems that bring digital technologies in the customer journey. In response to the problems identified, the impact on elements of the marketing mix was explored. Based on the identified problems, it was investigated which elements of the marketing mix affect and which disorders they cause in relation to each element. Through analyzing secondary data sources, the industries which met the impact of the recognized problems were pointed out.

## 2. RESEARCH BACKGROUND

This paper is preliminary research of the impact of digital technologies on the customer journey, and the problems encountered by companies under their influence. The first part of the research deals with the analysis of problems that arise in a very dynamic environment influenced by digital technologies and what impact they have on the elements of the marketing mix. Elements of the marketing mix that will be observed in correlation with the problems brought by digital technologies in the customer journey are: Product/Service, Place/Distribution, Promotion, Price, Process, Physical Evidence and People (Caliskan et al., 2020). The observed problems are the motivation for the implementation of this research because customer loyalty, influenced by a lot of digital innovations, is interrogative for almost every company. This paper will address the specific problems of individual industries that have experienced changes in consumer behavior under the influence of digital technologies.

This paper aims to answer the following research questions (RQ):

- RQ (1): What are the problems in building customer loyalty and increasing customer experience with the presence of digital technologies?
- RQ (2): Which elements of the marketing mix are most influenced by the recognized problems?
- RQ (3): Which industries are most affected by recognized problems?

The relevant database Scopus and platform Web of Science were searched by title, with the complex query “digital technologies” OR “digital technology” OR “digital transformation” AND “customer” OR “customer value” OR “customer experience” OR “customer journey”. The research was limited to years from 2019 to 2021. The search in database Scopus resulted in

23 articles. The search result in platform WoS was 11 articles. After reviewing the articles, the same articles in Scopus and WoS were identified and the final result of articles for the analysis was 26 articles, and of these, 17 were available in full access form for further analysis. The analysis is shown in the continuation of the paper.

### 3. RESULTS

Table 1 provides a comprehensive overview of the results of the analyzed articles. The table shows the analyzed literature, recognized problems, and their impact on the elements of the marketing mix. Also, the results include a review of industries that have been the subject of research in the analyzed literature.

**Table 1.** An overview of the research scope

Reference	Problems	Marketing mix elements	Industry
(Abuhasan & Moreb, 2021)	P01, P02, P03	people, physical evidence, place	banks
(Prabowo et al., 2021)	P04, P05	services, people, physical evidence	e-commerce (in the fashion and beauty category)
(Matarazzo et al., 2021)	P04, P06, P07	services, people, process	small and medium-sized firms (SMEs) – the food, fashion, and furniture design industries
(Nah & Siau, 2021)	P08	services, people, price	automotive industry
(Fernández-Rovira et al., 2021)	P09, P10	people, process, resources (price)	not specified
(Rados et al., 2020)	P11, P12	people, process	automotive industry
(Nöjd et al., 2020)	P05, P13	process, place	not specified
(Castagna et al., 2020)	P02, P09, P14, P15, P16	process, price, promotion, service	handicraft and/or retail SMEs (luxury jewelry industry)
(Lalic et al., 2020)	P17	process, distribution	food production chains
(Nguyen et al., 2020)	P18, P17	service, price	the insurance sector
(Nurcan et al., 2020)	P14, P19	process, promotion	banks
(Castagna et al., 2020)	P04, P14, P20	people, distribution, service	the insurance sector (health sector)
(Gil-Gomez et al., 2020)	P21	people, distribution, promotion	not specified
(Nayak et al., 2019)	P09, P22	price, people	the insurance sector (health sector)
(Koilada, 2019)	P23, P24	process, promotion, distribution	not specified
(Cay et al., 2019)	P01	people, process	automotive industry
(Silhavy et al., 2019)	P13, P25, P26	process, promotion, distribution	not specified

**Source:** authors elaboration

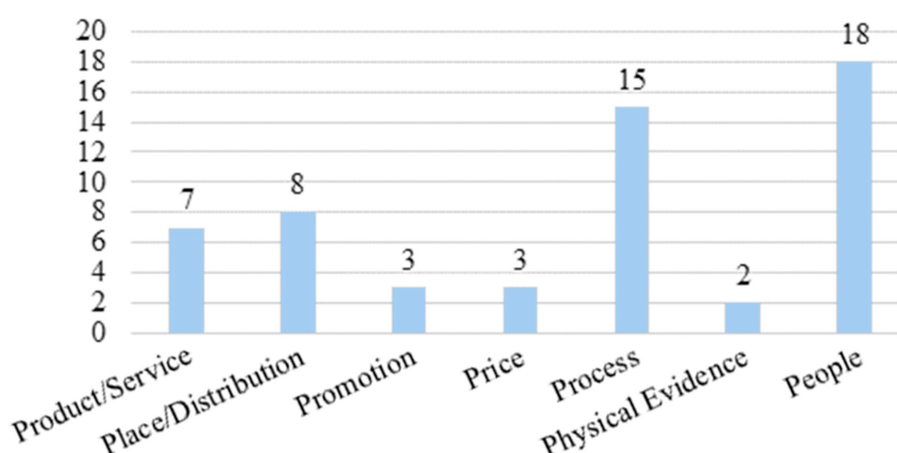
Concerns about information and cyber security (P01) and private data of the customer (P10) are one of the problems that today occupy great attention in scientific circles. The issue of protecting customers and their data will certainly become a matter of interest to companies if they want to retain loyal customers (Abuhasan & Moreb, 2021); (Fernández-Rovira et al., 2021). The lack of knowledge about the opportunities and benefits that digital technologies bring to customers and companies (P02, P06) is a broad thematic problem. Companies face the problem of insufficient knowledge of the technologies and the way to implement them in marketing processes (Abu-

hasan & Moreb, 2021; Matarazzo et al., 2021). Also, following digital trends requires resources that they cannot easily afford. Companies that use technologies, of all the benefits they offer, such as analysis and data of customers (P16, P18, P26), make little use of it to improve marketing processes and actions (Abuhasan & Moreb, 2021) and ultimately to increase loyal customers. Neglecting digital instruments (P07) is risky and can seriously jeopardize the company's survival. It is important capacity build and acquisition of knowledge and skills which are needed for the implementation of technologies into business processes and competitive and collaborative usage of them (Matarazzo et al., 2021). In addition, the planning and management of digital technologies at the strategic level of the company should have a main role in the marketing aspect, which requires changes in management, vision, and preparation of appropriate strategies (P04) that play a role in gaining new competitive advantages (Matarazzo et al., 2021).

Traditional advertising, marketing, and sales activities do not have a significant impact on the loyalty of existing customers (P12), so there is a need to implement innovative concepts and business models (P07) (Rados et al., 2020). Companies are required to engage and make additional efforts in creating products and/or services, allowing customers to play an active role in creating a unique user experience in the digital and physical world (Prabowo et al., 2021); (Nah & Siau, 2021). The presence of contemporary digital technologies has changed the business of physical and virtual stores. Creating value for customers in physical markets requires significant investment in space (P03) and physical evidence (P05). Virtual markets are expected to provide more functionality through interfaces on channels such as search engines, more unknown platforms, and other websites such as special interest websites for customers (P25) (Nöjd et al., 2020).

Uneven application of technology and lagging adoption of digital transformation concepts in business is the result of different levels of maturity and ability due to the development capabilities gap between small and medium enterprises and large companies, but also different sectors. Large companies have significant resources that have enabled them to adopt digital technologies in everyday business processes (Fernández-Rovira et al., 2021). A large number of companies are struggling with high investments in technologies for which they do not have enough resources (P08, P09). Also, one of the research found that SMEs do not usually adopt more updated versions of marketing tools and technologies (P15), such as mail marketing, banner advertising, fake marketing, advergames (Castagna et al., 2020). Small and medium-sized enterprises lag behind in adaptability and they find it difficult to adopt rapid technological trends (P09) for which they lack the support of suppliers and the environment (P14) (Castagna et al., 2020); Nurcan et al., 2020).

Furthermore, there is still uncertainty about how customers perceive the value of providing services facilitated by digital technology. Interactions between digital technology and service quality dimensions, i.e. how digital technologies affect loyalty and customer relationships, as well as financial success in terms of profitability and value of the company, are still undetermined (Nguyen et al., 2020; University of Oulu, Information Processing Science, Oulu, Finland et al., 2019). A problem that requires a lot of attention and the need for further research are processes related to touchpoints of contact with customers (P13). These are the points where companies come into contact with customers, which has the greatest impact on the customer experience and ultimately on the purchasing decision and loyalty. According to secondary data analysis, the most common problems that are recognized in the obtained research are explained in more detail (see Appendix). Figure 1 shows the frequency of problems in individual elements of the marketing mix.



**Figure 1.** The frequency of problems in individual elements of the marketing mix

**Source:** authors elaboration

The presence of recognized problems had the greatest impact on processes and people as elements of the marketing mix. The results are not surprising given that these two elements are usually recognized as key in the transformation of companies' processes and make the biggest difference in creating a competitive advantage. Table 2 shows the correlation of the identified problems mentioned earlier in this paper with the elements of the marketing mix.

**Table 2.** Correlation between marketing mix elements and problems

Marketing mix element	Problems
Product/Service	P04, P07, P08, P14, P18, P20, P24
Place/Distribution	P03, P05, P14, P17, P19, P20, P21, P25
Promotion	P15, P21, P25
Price	P08, P09, P22
Process	P01, P06, P07, P09, P10, P11, P12, P13, P14, P15, P16, P17, P19, P23, P24
Physical Evidence	P03, P05
People	P01, P02, P04, P06, P07, P08, P09, P10, P11, P12, P13, P14, P16, P18, P20, P21, P23, P26

**Source:** authors elaboration

Entry into the revolutionary digital age and constant development of technologies led to individual industries having faced many problems that have a significant impact on the user experience. For example, there was an increased demand for transaction services in the banking system, and with limited branch office hours and difficulties in arriving at branches, they did not provide a pleasant experience for customers (Abuhasan & Moreb, 2021). Digital transformation has proven to be the opportunity to improve business and user experience. Often digital transformation stops at the initial stage due to its complexity of implementing the entire organization system. The reason for this is the lack of resources and support from the environment or society (Nurcan et al., 2020). It is undeniable that in the last few years, digital technologies have fundamentally transformed various industrial sectors around the world and will continue to change them in the future. Digital circumstance has created new customer needs and desires in the automotive industry and involves the customer in the whole process of car production according to their own preferences resulting in tough competition in the automotive industry (Nah & Siau, 2021). In the luxury jewelry industry, the key role played customer knowledge management, supported by digital technology, which enables easier identification of customer needs and thus improves the production of products and services with better performances (Castagna et al., 2020). In the social health insurance sector, digital transformation provides



population coverage and contributes to risk management analytics, optimizing business costs and improving the user experience, and the individual can better participate in self-monitoring and self-care. Analysis of big data together with artificial intelligence provides an opportunity for creators to collect data and use it to formulate business policy; however, in the sea of data, it is important to identify the relevant ones (Nayak et al., 2019). The development of e-commerce, covering almost all industries and increasing the number of Internet users, and thus customers, requires companies to devise various strategies to achieve customer loyalty and improve their user experience. The e-commerce user experience should be considered as a strategic process in order to achieve customer value, satisfaction, loyalty, competitive advantage, and differentiation (Prabowo et al., 2021). The industries mentioned were the subject of research in the analyzed articles. The analysis of industries showed that prominent industries are closely related to the status and prestige of customers.

#### **4. LIMITATIONS AND FUTURE RESEARCH**

Limitations in this paper relate to the number of articles included in the analysis of problems arising from the presence of digital technologies in marketing processes and their impact on elements of the marketing mix. Future research is planned to address the identified limitations. So, in future research, an additional search of relevant databases in order to obtain a larger number of secondary data sources for analysis will be made. The analysis would provide a more comprehensive analysis of industries that, under the influence of digital technologies, find it more difficult to manage customer experience and loyalty. Future work will focus on recommendations for resolving problems in marketing processes influenced by digital technologies, especially processes related to touchpoints of contact in the customer journey. The potential of digital technologies that are used to support customer journey tracking processes, how they can contribute to addressing identified problems, and improving marketing processes will be explored. Furthermore, the research will include an analysis of activities supported by contemporary digital technologies in certain phases of the customer journey, in order to improve their experience and increase loyalty. The need for further research is recognized, given that this preliminary report has indicated a lot of problems in marketing processes with the presence of digital technologies that can make it a difficult competitive struggle and retain loyal customers.

#### **5. CONCLUSION**

The digital transformation paradigm, with all technological and business opportunities, has contributed to many benefits in business processes but also pointed to a lot of problems if it is not managed competitively and collaboratively. In order for companies to remain competitive under the constant influence of digital innovation, they need to identify key elements that contribute to creating value for customers. The essence of creating competitive advantages can be evident from the above problems in the research, which indicate that investing in internal marketing in terms of people and the sustainability of the process ultimately contribute to creating a loyal circle of customers. The focus should be on defining the most relevant touchpoints of contact on the customer journey and how, with the ubiquity of technology, to adapt key elements of processes and people to make a difference in the customer experience. Changing consumer habits and a new competitive environment are forcing companies to quickly adapt, change and improve the processes of their customers so as not to lag behind in a market that is overwhelmed by alternative products and services.

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## APPENDIX

Problem code	Problem description
P01	Information security and cyber security which affects customers concerns, questionable safety and security based on internet of things in data transport of customer
P02	Lack of knowledge on how to use digital technologies of customers and companies, smes are not able to follow technological dynamics
P03	Demanding way of performing operations with digital technologies in physical branches
P04	Adapting and devising different strategies to retain and increase the number of customers, the digital strategy of organizations is not sufficiently focused on creating value for customers, changes in marketing and sales management and vision
P05	Selection and implementation of technologies to increase the experience for customers in the physical space, implementation and updates of digital technologies in physical space
P06	Integration and coordination skills of introducing digital technologies into processes
P07	Acceptance and neglect of digital instruments that can be useful in processes
P08	Complete commitment to the customer in the development of his individual product requires a lot of resources
P09	Problems of scarcity of resources caused by reality cultural problem, smes typically did not have dedicated resources to monitor the evolution of the digital market, the digital divide in the society
P10	Ethical problems arising from the massification of data capture
P11	Future consumer behavior is difficult to predict due to high competition in the digital world
P12	Advertising, marketing and other sales activities do not have such an impact on the loyalty of existing customers
P13	The problem of proper application of digital technologies at touchpoints of contact with customers, the complexity of defining relevant points of contact with customers
P14	The lack of support from information technology vendors in the decision-making process for choosing adequate digital systems, a lack of support when it comes to activities that require input from the environment, lack of willingness of customers to participate in research for the benefit of the company
P15	Lack of adjustment and adopt more updated tools (e.G., Email marketing, banner advertising, advergames)
P16	Lack of knowledge and analysis of the degree of alignment between the tools and practices supporting customer knowledge management processes
P17	Questionable technological contribution for companies and customers in complex supply chain systems, increased use of digital technology may not lead to greater value that customers perceive
P18	Lack of knowledge about the impact of technology on the quality dimensions of service
P19	Digital projects related to improving the customer experience often remain at the starting point due to complexity
P20	Insufficiently researched customer expectations about what technologies they should be provided with in the buying process
P21	Difficult establishment of marketing, sales and service business model that guarantees long-term economic, social and environmental sustainability
P22	Investment costs in digital technologies
P23	Insufficient utilization of the results of digital transformation
P24	Too much fluidity in data silo management and complexity in accepting services may not give the desired results and therefore innovating user experiences
P25	A lack of interfaces on channels like search engines, more unknown platforms and other websites such as special interest websites for customers
P26	A lack of information about customers – a holistic view on the customer is not possible, only an approximation