

DEVELOPMENT OF DIGITAL CUSTOMER EXPERIENCE IN LOGISTICS SERVICE INDUSTRY

Erika Kallionpää^{1*}, and Kalle Vaismaa²

¹Transport Research Centre Verne, Tampere University, Finland, erika.kallionpaa@tuni.fi,

²Research Centre Terra, Tampere University, Finland, kalle.vaismaa@tuni.fi

*Corresponding author

Introduction

Due to changing business environment and trends affecting logistics, companies are facing continuous need to revise their logistics operations. Digitalization and automation have changed the know-how needed in logistics and are estimated to continue to shape the demand for logistics expertise (Laitinen, 2019; DHL Global, 2023). The rapid pace of change in digitalization requires companies to learn new things, adapt to changes and develop digital customer experience using new technologies (Gerdt, 2018). Digitalization opens the road to a digital customer journey, and well-functioning digital solutions are expected to make the business effective, ensure the customer satisfaction and to grow the market share (Haveri, 2018). Creating superior customer experience and customer orientation are two of the central objectives in today's business environment. Customers seek to engage with service brands and cooperate with service organizations that enable superior experiences (Lemon and Verhoef, 2016). Customer experience is evoked each point of contact at which the customer interacts with the company, its product, its service, its communication, and for example advertising (Grewal et al., 2009).

Customer experience and behavior are viewed as two of the most important research issues for researchers and operating challenges for companies (Leinonen, 2018). The purpose of this paper is to study the digital customer experience in the context of logistics service industry. The aim is to describe the elements of successful digital customer experience, and the views of the future development of digital tools and services in logistics. The challenges and barriers to reach the desired future of digitalization and digital services are presented, as well as the process of analysis used in this study to explore the digital customer experience. In this study, we aim to answer the following research questions in the context of logistics service industry: 1) What are the elements of successful digital customer experience? 2) What is the desired direction and future of digital service development from the customer point of view? and 3) What are the challenges, barriers, and other affecting views to reach the desired future of digital services?

Literature review

Digital customer experience

Customer focus and superior customer experience are virtues that many companies seek. To increase customer's loyalty and advocacy, companies must consider constantly positive and unique customer experience. (Weber and Chatzopoulos, 2019) Customer experience consists of individual contacts between the company and the customer at distinct points in the experience, called touchpoints (Homburg et al., 2017; Schmitt, 2003). Experience is always a subjective experience, and it refers to the personal perceptions. Customer experience can appear in many ways, such as physical, mental, emotional, and virtual experience (Schmitt, 1999). Pine and Gilmore (1999) emphasize that experiences occur when customers are

involved in such a way that those experiences provide permanent and unforgettable impressions. Customer experience is multidimensional and holistic in nature. It encompasses customer's cognitive, emotional, behavioral, social, sensorial and value responses to the organization's offerings (Bolton et al., 2018; Lemon and Verhoef, 2016; Verhoef et al., 2009).

Development of digitalization have changed the customer journey from a regular customer experience into a digital one where several touchpoints are supported by digital tools (Weber and Chatzopoulos, 2019). Digital customer experience takes place between the customer and the company directly or indirectly through digital channels (Folcan, 2022). In other words, digital customer experience refers to all those touchpoints where the customer and company meet online (Trustmary, 2022). Sihalahi and Rufaidah (2018) state that digital customer experience consists of the factors like digital service experience, digital image experience, digital touchpoint experience and digital broadband experience. Rose et al. (2011) identifies nine cognitive and affective factors that correlate with digital customer experience: data processing, ease of use, utility, benefits, control, skills, trust, risks, and enjoyment. Gerdt (2018) sums up the development of a digital customer experience in four different areas: personalized service, user-friendliness, real-time and technological environment. Filenius (2015) highlights that user experience is an individual experience because every customer experiences service differently. Companies often strive to make the digital service appeal to a larger number of customers, and the service is developed based on general customer feedback (Filenius, 2015).

The challenge is how to create and manage unique customer experiences. Customer experience management (CEM) has been introduced to be one of the solution concepts, as well as to focus on yielding total customer experience (Weber and Chatzopoulos, 2019; Mascarenhas et al. 2006). The field of CEM is a relatively new area for future research (Lemon and Verhoef, 2016). CEM tries to ensure a positive experience for customers by focusing on convenience, value, quality and perfect customer experience in the markets the firm serves (Verhoef et al., 2009). The processes for creating the total customer experience have been analyzed through, for example, the value chain and customer journey approaches (Leinonen, 2018). Companies must optimize whole customer experience by focusing on both digital and physical channels, so called multichannel environment, or even more effective, provision of seamless experiences across all channels known as the omnichannel approach (Weber and Chatzopoulos, 2019). Filenius (2015) emphasizes that developing a digital customer experience does not always require large investments. It is often enough to do the small details correctly, to think about the customer's needs, and to carry out the needed measures to the end. For example, Haveri (2018) found in her research that one of the biggest reasons for not using the digital solutions among customers, was not knowing about the solutions.

All in all, customers appreciate the ease of use of the service, and user experience has become one of the most significant competitive factors for the companies (Filenius, 2015). Customers seek to interact with service organizations that enable superior experiences (Lemon and Verhoef, 2016). In the future, the development of the digital customer experience will be guided using artificial intelligence, increasing self-service, utilization of data, cloud technologies, automations and new business applications and user interfaces. The pace of change in the digital environment is fast, and investment in technology will inevitably increase in the future (Gerdt, 2018).

The Futures Triangle

The Futures Triangle is the analytical framework, which helps to establish a big-picture view of changes and recognise desired futures and barriers to change. It maps today's views of the future through three dimensions: the push of the present, the weight of the past and the pull of the future. The push of the present and the weight of the past are based on current information, whereas the pull of the future is insightful and includes different images, dreams, and wishes of the future, which pull us forward. The pushes of the present are drivers and trends that are changing the future. The weights are the barriers to the change we wish to see, such as continuities, belief systems, world views and obstacles to change (Inayatullah, 2008; Sitra, 2023). The Futures Triangle is presented in Figure 1.

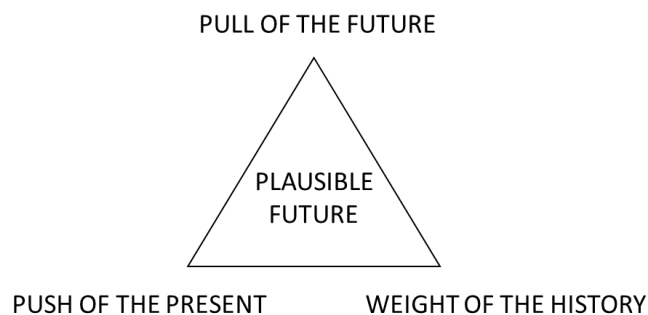


Figure 1: The Futures Triangle (Inayatullah, 2008).

Methods and process of the workshop

This paper is based on qualitative research methods, and it is by its nature a case study, in the form of four expert workshops (organized in Finland, in March 2023) and literature review. Through the literature review, we studied the elements of successful digital customer experience and how customer experience has changed through digitalization. The aim of the workshops was to discuss and reflect with logistics experts on digital services and the customer experience related to them. The approach in the workshops were future oriented, and we used the futures triangle as a method and framework. The triangle is especially useful for identifying the factors affecting the future of a specific chosen theme. In this context, the futures triangle aided in ascertaining the current state of the digital services, the development measures to the desired future and the challenges and barriers to change. The results of the workshops were analysed using qualitative content analysis.

The participants of the workshops were primarily logistics managers and directors of trade and industrial companies. Each participant had their own experiences and perceptions of digital customer experience related to their business, which allowed for an interactive and fruitful discussion between the participants. During the workshop, we discussed the three dimensions of futures triangle *the current state of digital services and customer experience*, *the desired future of digital services* and *the bottlenecks to reach this desired future*. We had reserved one hour for each workshop, and the futures triangle framework was on the table in paper form allowing facilitators and participants to write down all discussed thoughts using Post-it® notes.

We started the workshop by considering what constitutes a successful digital customer experience. In the first step, the participants used five minutes to think and write their thoughts on Post-it® notes. This task also served as a warm-up task. After this, we discussed the issue

together and finalized the notes. This discussion was followed with the question on how the logistics service provider's current digital tools and services work and serve the participants as customers. Then we moved to discuss and visualize the desired future of digital services. The themes like needs, desires, new tools and services, interfaces, ecosystems, operation models, images of futures were discussed in this aspect. Finally, we discussed the challenges, barriers, and other views of the participants in achieving the desired future. During discussion, if necessary, we also moved from one dimension to another enabling innovative and open conversation. The framework used in the workshops is presented in Figure 2.

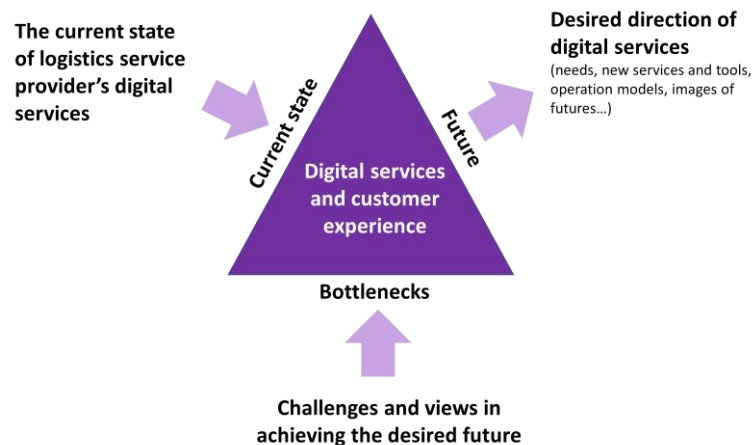


Figure 2: The futures triangle framework used in the workshops.

Results

Participants of the workshops mentioned several elements that make up a successful digital customer experience. We recognized the following nine themes: *accessibility, clarity, customer-specific service, speed of service, data security, technical support, information-related matters, the emergence of the wow-effect and professionally managed changes*. The logistics experts especially valued easiness, usability, clarity, and real time of digital services. Digital tools, websites and instructions should be clear and understandable. Speed of service, short processes and data security were also highlighted in the discussions. According to the experts, a successful digital customer experience also requires the availability of real time technical support. Information should be correct and reliable, and the first encounter with the digital tool should be positive. One participant expressed that *“the digital customer experience should be at least as good as the face-to-face customer experience.”* The experts also wished as few updates as possible for the digital tools.

The question “How the logistics service provider's current digital tools and services work and serve the participants as customers?” also sparked a lengthy discussion. Most of the experts said that there is enough information available about digital tools. However, the discussions also highlighted a desire for more active contact and communication, more marketing of the digital services available and more user training. Participants also said that e-mails are still widely used in communication and for transactions, since it is easy to use and familiar. Related to tracking, some participants mentioned about the unknown location of transported goods, data on not being up-to-date regarding location of ships and road transport. Additionally, they also emphasized that the most relevant thing is to know when the orders will be delivered. There was a positive discussion related to data availability (e.g., Sea Explorer was mentioned as an example) and that you can get reports from one place and that tools works fine. One

challenging aspect from the customer point of view is that there are too many tools, because each company has its own. There is a need to manage and learn how to use different systems and tools. This also leads different data and separate reports. One participant also said that there is still a lot of manual work to be done for the flow of information.

We also discussed about the desired future of digital services. First, the participants agreed that the big picture shows that digitalization will increase, digital world will be more initiative-taking, and logistics will be more discreet and seamless in future. One participant mentioned that their desired image of future is, "*You do not have to do anything by yourself, digitalization takes care of the processes*". Another participant emphasized that, "*Digitality is not an intrinsic value, but a tool.*" The participants highlighted that digital tools and services should be developed so that processes, systems and people are in balance. They agreed that the *traceability* and *predictability* in supply chains are the foremost things in the future development of digitalization and digital services. Situational awareness of the entire supply chain is by far the most vital information needed, e.g., the real time information about the delivery locations and forecast of the movement of goods. In the future, there will also be an interest in CO₂ emission data.

In future, the participants would also like to have more information about decisions taken and unexpected situations, e.g., why a container is in the Hamburg container yard or why a ship changes its route. This kind of information is especially needed in the field of road and sea transportation. To develop traceability in future, the trackers should be in containers and trailers (attached to the load). Participants also discussed that artificial intelligence produces and forecasts better data, but this data should be made available for use. For developing digital services, the logistics service providers should further develop the dialogue with customers, provide possibilities to obtain customer feedback, and find out what information their customers need to develop personalized services for them. This requires not only close cooperation between logistics service providers and their customers, but also time and human resources from both sides. The participants believed that, in future, data will be integrated from different systems on the same platform and also sent to the customer's systems. However, there was also a voice for the possibility to have a personal service by phone and email also in the future.

The third futures triangle dimension was the bottlenecks. The experts were asked to discuss about the bottlenecks, challenges and other views they saw that affect the process to reach the desired future. Based on the discussion, we formed the following ten themes: *management of digital services, psychological point of view and fears, operational environment, need and sharing of information, regulations, systems and system-centricity, personnel and time resources, invests, communication culture, and planning and developing the digitalization*. Related to management of digital services, the experts raised that inconvenient and slow phone service, and especially the problematic robot chats, is an issue. Typically, a robot chat does not help a customer. Due to this, the customer has to call a customer service personnel. This is wastage of the customer's precious time. The experts were also worried about how the users can follow the development of services, as well manage and be aware of several different services and service systems. From a psychological point of view, it is vital that digital services and tools are attractive and easy for users to use, otherwise the digital customer experience will not be successful. The experts also raised several fears, which might be barriers for the desired future and future development. One of the fears was that the digital information will be somehow misused. Another fear was that they can lose their competitive advantage. Fear of losing customers, and that digitalization will replace the personal service were also mentioned.

Not only is the operational environment of logistics complex to function, but also logistics is a very traditional and a conservative field of business. This influences of course on future development. The experts also discussed how today’s insecurity and uncertainty about the world situation and crises may affect the development of digitalization. Because of this, the cooperation between the companies might decrease, and companies will “snuggle” and just concentrate on surviving. The need for the information is and will become increasingly important. The customers will want more real-time information and getting forecasted data will also be important. The question is: which information is relevant, and how to define and find the most appropriate information in decision-making. One expert mentioned the metaphor that “we should see the forest for the trees”. Related to information issues, in the future, the reporting will generally increase. One of the challenges is that companies will not see the value of sharing information and feel, that it means extra work for companies. The problems of sharing information was seen as a barrier for future development by the experts.

Various regulations will increase, which will, therefore, accelerate and direct development, for example, GDPR (General Data Protection Regulation) was mentioned as an example. One worry, highlighted in the workshops, was whether system users will be taken into account when developing the systems. The fear is that systems will determine, not the people. For example, the websites should be in plain language. A challenge related to systems, is that each service provider has their own systems, and they are opposed to change it, “keep the yarns in their hands”. The experts also discussed about the personnel and time resources and their sufficiency, for example the marketing resources. Digital investments are usually expensive, and to make a decision to invest can be very challenging and tricky. All in all, experts saw the digital development as a positive aspect and planning of course should be future oriented. Development of digitalization in road freight transport, was mentioned as a specific example. Development is evolving. Results of the workshops are summarized in Table 1.

Current state		Future	Bottlenecks
Elements of successful digital customer experience <ul style="list-style-type: none"> • Accessibility • Clarity • Customer-specific service • Speed of service • Data security • Technical support • Information-related matters • Emergence of the wow effect • Professionally managed changes 	Observations on digital services <ul style="list-style-type: none"> • Information about the tools • Marketing the tools • User training • Active contact and communication from the logistics service provider • Information about the deliveries • Real time tracking • Well-functioning digital tools • Reports from one place 	Desired future of digital services <ul style="list-style-type: none"> • Digital world will be initiative taking • Discreet and seamless logistics • Digitalization takes care of all the processes • Processes, systems and people in balanced • Integrated digital systems • Transparency, traceability and predictability of supply chains • CO₂ emissions data • Personalized services & Traditional personal service • Active communication 	Challenges and views achieving the desired future <ul style="list-style-type: none"> • Management of digital services • Psychological point of view and fears • Operational environment • Need and sharing of information • New regulations • System-centricity • Lack of personnel and time resources • Invests • Communication culture • Planning and developing digitalization

Table 1: The results of the workshops in a nutshell.

Discussion and conclusions

This paper studied the digital customer experience in logistics service industry. The paper sought to answer three research questions. The first research question was: “What are the elements of successful digital customer experience?” In this study, the following nine elements were found: accessibility, clarity, customer-specific service, speed of service, data security, technical support, information-related matters, emergence of the wow-effect and professionally

managed changes. In a nutshell, digital customer experience will be successful, if digital services are easy and fast to use, information is in real-time and technical support is available. The logistics' customers would value digital customer experience, if it is at least as good as face-to-face customer experience. Moreover, the customers appreciate information about the digital tools that are available, marketing the tools, active contact and communication from the logistics service providers, information about the delivery times and dates, real time tracking of the deliveries, digital tools that work and access to all reports in one place. Customers would also value if there would be one common tool used across all the companies.

The second research question examined in this study was: *“What is the desired direction and future of digital service development from the customer point of view?”* Several visions for the future were highlighted. Digital world will be initiative-taking, logistics will be more discreet and seamless, and digitalization will take care of the processes without unnecessary manual work. Digital tools would be developed by taking processes, systems, and people into account. Digital systems will be integrated. Supply chains are transparent, traceable and predictability. CO₂ emissions data is in focus. Services are personalized to an appropriate extent and dialogue with the customer is active and personal service will stay. Lastly, this study sought the answer to the third question: *“What are the challenges, barriers, and other affecting views to reach the desired future of digital services?”* Based on the discussions the different issues were emphasized: management of digital services, psychological point of view and fears, the nature of operational environment, increasing need and sharing of information, new regulations, system-centricity, lack of personnel and time resources, expensive and challenging invests, communication culture, and planning and developing the digitalization.

As a conclusion, the logistics customers value especially easiness, usability, and real time of digital services. The traceability and predictability in supply chains were seen most foremost things in future development of digitalization. The results highlight the importance of cooperation between customers and logistics service providers when developing future digital services. The experts participating in the workshops, assessed the framework of futures triangle as a suitable method to study digitalization and customer experience. This study deepens the information and understanding about the customer experience of the digital services in logistics industry in the light of sustainability and future development. In addition, the use of futures triangle method gives a new approach to investigate the digital customer experiences. For the companies, this study illustrates the elements of digital customer experience and increases companies' understanding of customer needs for the development of the digital tools and services. This information can be used to support strategic decisions and further develop the customer relationships and experiences. The method used in the workshops is also usable for the companies. In future, it would be interesting to study and validate these results with follow up workshops with the logistics service providers. The more international context and comparison between different countries would be also valuable to study to understand more deeply the nature of digital customer experience.

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