Empowering Parcel Delivery Logistics: The Role of Customer Journey Mapping in Driving Innovation and Customer-Centric Solutions

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Abstract

Nowadays, the logistics industry operates in a dynamic and competitive environment where meeting customer expectations and providing exceptional services are vital factors for success. In this regard, the concept of customer journey mapping is considered a powerful tool for understanding, analyzing and optimizing the customer experience throughout the entire parcel delivery process. It has become the main competitive factor in the digital age. This paper presents an initial study conducted for a case study, where an effort was made to model the customer journey for parcel delivery. Subsequently, a roadmap for innovation was outlined based on this model. The paper concludes with recommendations for problem-solving and innovation, which necessitate further implementation and examination of the original results from the recommendations. Furthermore, the paper illustrates how customer journey mapping empowers logistics companies to identify improvement opportunities, devise customer-centric solutions, and steer a path for innovation in the delivery process, as demonstrated through a real-world case study in a courier service company. This research aims to provide practical insights for industry professionals, researchers, and stakeholders regarding the relationship between customer journey mapping and creating innovative solutions in parcel delivery logistics. Its goal is to facilitate a deeper understanding of how a customer-centric approach, based on insights from customer journey mapping, can lead to transformative innovation and shape the future of parcel delivery logistics.

Keywords
Customer journey mapping, Customer-centric solutions, Innovative solutions, Parcel delivery logistics, Customer expectation

1. Introduction

Companies in the modern era encounter fierce competition that arises from both online platforms and the physical realm (Moagar-Poladian et al. 2017). The value that customers derive from businesses is no longer predominantly based on the actual products offered, but rather on the services provided (Zomerdijk and Voss, 2010). Consequently, the customer experience has emerged as the key factor in distinguishing companies from one another and has become a top priority for management (Heid et al. 2018). Creating a superior customer experience has become a holy grail for many businesses, particularly in the retail sector the landscape has been transforming at an unprecedented speed and scale, largely driven by omni-channel development, digitalization and retail innovation (Verhoef et al., 2016).

Customer Journey Mapping (CJ) is a method that involves creating visual representations of the customer’s decision-making process, considering their perspective. This technique helps in gaining a deeper understanding of the customer experience and is referred to as a CJ Map (Wassen et al. 2023). CJ Mapping is beneficial for fostering innovation as it provides a basis for developing new or enhanced services. Innovations are difficult to define, but they can be related to streamlining the service, helping the customer, differentiating the service, or contributing to the experience (Martin,
Recent innovations in research and industries have often been linked to customer experience because the customer is now viewed as innovation co-creator (Howells, 2010; Randhawa & Scerri, 2015). In line with this trend, customer centricity (Sheth, Sisodia, & Sharma, 2000) and engagement (Brodie, Hollebeek, Jurić, & Ilić, 2011) have become the focus of innovation. The last mile is traditionally the most cost-intensive part of the supply chain (Gevaers, Voorde, & Vanelslander, 2011).

CJ allows companies to visualize the entire customer journey, from the moment an order is placed to the final delivery. This holistic view enables businesses to identify areas where the customer experience can be enhanced and streamlined. By mapping out the customer journey, companies can pinpoint specific pain points, such as delays or communication gaps, and develop targeted solutions to address them.

In this paper, an attempt has been made to create a customer journey map based on the collected information in a logistics company and using pattern recognition from similar samples. In the customer journey map, pain points of customers have been identified, and based on that, organizational challenges have been determined, which serve as a basis for organizational innovations.

1.1 Objectives
This paper is one of the first to address customer journey mapping by providing a comprehensive and empirical framework. The results provide a foundation for future investigations of last-mile delivery innovation dimensions. The objectives of this paper can be summarized as follows:

- Investigate the role of customer journey mapping (CJ) in gaining a deeper understanding of the customer experience and fostering innovation in the parcel delivery logistic.
- Examine the influence of customer journey mapping on parcel delivery logistics, identifying pain points, challenges, and opportunities for improvement.
- Contribute unique research insights and advancements in the field of customer experience, customer journey mapping and roadmap of innovation in the context of the last mile delivery.
- Customer journey mapping can serve as a roadmap for innovation in the last mile delivery. By visualizing the customer journey, companies can identify areas where new technologies or processes can be implemented to drive efficiency and improve the overall customer experience. For instance, companies can explore options like automated delivery drones or optimized route planning to reduce delivery times and costs.

By fulfilling these objectives, valuable insights can be provided into the significance of customer experience, the role of customer journey mapping, and the potential for innovation in enhancing the overall customer experience in parcel delivery logistics.

2. Literature Review
The importance of comprehending and enhancing the customer experience in the delivery process is emphasized in the literature on customer journey mapping and innovation in parcel delivery logistics. In a study conducted by Moagar-Poladian et al. (2017), the significant growth of e-commerce and its influence on the retail and logistics sectors are highlighted, underscoring the necessity for service innovation in last-mile delivery to cater to the changing requirements of e-customers (Moagar-Poladian et al. 2017). Zomerdijk and Voss (2010) propose a framework for understanding the customer journey, which consists of three key stages: pre-purchase, purchase, and post-purchase. Their focus is on comprehending the touchpoints associated with service delivery from the consumer's point of view. Additionally, McKinsey's research emphasizes the significance of technology in reshaping last-mile delivery and meeting customers' increasing expectations for diverse delivery options (Heid et al. 2018). In the context of parcel delivery logistics, the review of innovative solutions underscores the importance of non-traditional services and the routing problem in last-mile delivery. The literature suggests that finding new solutions and improving existing ones is crucial for enhancing the efficiency and effectiveness of parcel delivery logistics (Wassen et al. 2023). The study of consumer research in last-mile delivery is slowly increasing, but it is still fragmented. Instead of looking at the overall experience of last-mile delivery, researchers have focused on specific customer-centric aspects, such as the impact of delivery services on customer satisfaction, factors influencing customer satisfaction with delivery services, and how delivery services create customer loyalty services (Mentzer et al.,2001; Xing et al., 2010; Murfield et al., 2017; Jain et al., 2021). Customer Experience refers to the reactions or responses that customers have during their interaction with an organization, which can be either direct or indirect. These reactions are influenced by various stimuli encountered along the Customer Journey (Lemon et al. 2016; Becker et al. 2020; De Keyser et al. 2021).
According to Olsson et al. (2023), the overall experience of unattended delivery involves various dimensions, including cognitive, emotional, behavioral, sensorial, physical, and social responses from consumers. These researchers highlight the dynamic and comprehensive nature of the delivery experience, as well as the influence of delivery lead time on this experience. Heuchert et al. (2019) describes the development of a participatory framework for Customer Journey Mapping (CJM) in collaboration with a global professional service provider. They address the lack of methodological guidance in CJM and formalize learning into generally applicable methodological guidelines. They focus on creating a simple yet theoretically sound modeling approach that integrates modeling activities in an overarching method. Følstad & Kvale (2018) discussed in the conversation focuses on the early stages of the field of study and highlights the need for further development in terms of terminology and approaches. It emphasizes the practical importance of the review for the management and design of services, as well as for future research. The main contributions of the review include providing an overview of the peer-reviewed literature that uses the term "customer journey" and serving as a foundation for future research and practice. It specifically examines the relationship between customer experience and the customer journey perspective, addresses issues related to customer journey terminology, and explores opportunities for customer journey approaches. Rosenbaum et al. (2017) suggest a way to address the complicated nature of customer journey mapping (CJM) by connecting customer research with the CJM process. It also explains how managers can create a customer journey map that enhances the customer's experience at every interaction point. In summary, the proposed solution aims to improve the overall customer journey by incorporating customer research and optimizing touchpoints. Rana et al. (2022) presents a theoretical framework that aims to understand how customers adopt AI and ML for protection in their interactions with brands.

The framework provides insights into the customer journey and offers valuable information on grammar usage in this context. Lemon & Verhoef (2016) enhance their comprehension of customer experience and the customer journey in today's era of intricate customer behavior. They strive to achieve this by analyzing current definitions and conceptualizations of customer experience as a construct, as well as delving into the historical background of customer experience within the field of marketing. Additionally, they aim to consolidate existing knowledge about customer experience, customer journeys, and customer experience management. Lastly, they highlight key areas that require further research in order to advance our understanding of this significant subject. In summary, the authors seek to gain a deeper understanding of customer experience and its relationship to customer journeys, while also providing insight for future research in this field. Kokins et al. (2021) propose an improved framework for understanding Customer Experience and developing a more structured theoretical model. Their model offers valuable insights into how Customer Experience-driven innovation should be perceived, considering the interactions between different levels of the multi-level Customer and Consumer Journey. It builds upon well-established components of Customer Experience, such as Customer and Consumer Journeys, touchpoints, the market, other actors, and the diverse customer responses to stimuli throughout the journey. In summary, the authors enhance the existing framework and provide a more organized theoretical model for comprehending Customer Experience.

This literature review emphasizes the importance of understanding and improving the customer experience in the parcel delivery process. It highlights the significant growth of e-commerce and its impact on retail and logistics, underscoring the need for service innovation in last-mile delivery to meet the changing requirements of e-customers. The study also proposes a framework for understanding the customer journey, focusing on pre-purchase, purchase, and post-purchase stages.

Additionally, the significance of technology in reshaping last-mile delivery and meeting customers' increasing expectations for diverse delivery options is emphasized. The review of innovative solutions underscores the importance of non-traditional services and the routing problem in last-mile delivery. It also suggests that finding new solutions and improving existing ones is crucial for enhancing the efficiency and effectiveness of parcel delivery logistics. The study of consumer research in last-mile delivery is slowly increasing, with a focus on specific customer-centric aspects such as the impact of delivery services on customer satisfaction, factors influencing customer satisfaction with delivery services, and how delivery services create customer loyalty. Customer Experience refers to the reactions or responses that customers have during their interaction with an organization, which can be either direct or indirect.
3. Methods
In this research article, the main objective is to explore the significance of Customer Journeys in driving road map of innovation. Identifying the challenges faced by the organization allows for a comprehensive understanding of the obstacles that hinder the delivery of exceptional customer experiences. These challenges can range from internal processes, resource limitations, to changing market dynamics. Understanding these challenges enables organizations to address them strategically and drive innovation to overcome them. Identifying the challenges faced by the organization allows for a comprehensive understanding of the obstacles that hinder the delivery of exceptional customer experiences. These challenges can range from internal processes, resource limitations, to changing market dynamics. Understanding these challenges enables organizations to address them strategically and drive innovation to overcome them. Figure 1 shows a customer's journey in parcel delivery logistics, which starts with awareness about the brand and ends with the customer's feedback after the delivery. The delivery process consists of three sections: First Mile, Middle Mile, and Last Mile. In the First Mile, the parcel is collected from the sender and then distributed to warehouses and hubs in the Middle Mile, where the distribution nodes deliver the package to the recipients. After delivering the parcel to the customer, the Post-Delivery stage begins, which concludes with customer feedback. Each step in the customer journey map is aimed at providing a seamless and satisfactory delivery experience for the customer. By examining each component of the customer journey map framework, we can gain valuable insights into designing an effective map that drives innovation and improves the overall customer experience in parcel delivery logistics.

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Consideration (Research &amp; Selection)</th>
<th>Order (Decision)</th>
<th>Delivery</th>
<th>Post-Delivery</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>First Mile</td>
<td>Middle Mile</td>
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Figure 1. Customer journey in parcel delivery logistics

To design and complete a customer journey map, the methodology for this paper can incorporate the following steps. First, conducting interviews with key stakeholders within the organization, including managers, employees and customers. These interviews will provide valuable insights into the current customer journey, pain points, and areas for improvement. Second, benchmarking can be used to analyze and compare customer journey maps from other organizations, both within the same industry and across different industries. This benchmarking process will help identify successful use cases, best practices, and innovative approaches to designing a comprehensive customer journey map. Third, data mining techniques can be employed to collect and analyze relevant data from various sources, such as customer feedback, surveys, and transactional records. This data will provide quantitative insights into customer behavior, preferences, and touchpoints throughout their journey.

Additionally, examining the needs and challenges of the organization is crucial. This involves understanding the organization's goals, objectives, and unique challenges in delivering a seamless customer experience. By aligning the customer journey map with the organization's specific needs and addressing their challenges, the map can be designed to drive innovation and improve customer satisfaction. We combined insights from interviews, benchmarking, data mining, and examining the organization's needs and challenges to design and complete a comprehensive and effective customer journey map. Based on the following steps, the components of a customer journey map have been extracted and organized into a framework, denoted as Fig.2. This framework includes several key items that play a significant role in designing a comprehensive customer journey map. In the following sections, we will introduce each component and provide insights into their importance.

- Touchpoints: These are the various points of interaction between the customer and the organization throughout the journey. We will explore how identifying and analyzing touchpoints can help optimize customer experiences and drive innovation.
- Customer Emotions: Understanding and addressing customer emotions at different stages of the journey can greatly impact their overall satisfaction. We will discuss the significance of capturing and addressing customer emotions to enhance the customer journey.
- Pain Points: These are the areas where customers experience frustration, dissatisfaction, or obstacles. Identifying and resolving pain points is crucial for improving the customer journey. We will delve into effective strategies for identifying and addressing these pain points.
Customer Goals: Understanding the goals and motivations of customers throughout their journey is essential. We will explore how aligning the customer's goals with the organization's objectives can lead to enhanced satisfaction and drive innovation.

Customer Activity: This component focuses on understanding the actions, behaviors, and decisions made by the customer throughout their journey. By analyzing customer activity, we can gain insights into their preferences, needs, and pain points. This information can be utilized to personalize the customer experience, optimize touchpoints, and drive innovation.

Business Activity: This component involves examining the internal processes, operations, and activities of the organization that contribute to the customer journey. By understanding the business activity, we can identify areas where operational improvements can be made, streamline processes, and enhance the overall customer experience.

By including Customer Activity and Business Activity in the customer journey map, we can gain a comprehensive understanding of the interactions between the customer and the organization. This understanding enables us to identify opportunities for innovation, address pain points, and deliver a seamless and satisfying customer journey in the parcel delivery logistics industry.

By examining each component of the customer journey map framework, we can gain valuable insights into designing an effective parcel journey that drives innovation and improves the overall customer experience in parcel delivery logistics (Figure 2). Additionally, it is imperative to identify the challenges and needs of the organization to achieve the goal of understanding the role of Consumer and Customer Journeys in innovation.

Figure 2. Customer journey map in parcel delivery logistics

4. Results and Discussion
Based on the information obtained from the customer journey map and the identification of customer needs, the factors that lead to the improvement of the customer journey map have been identified. Parcel delivery companies can improve the customer's journey by implementing the following strategies: Transparency: Customers appreciate being informed about the status of their package. Providing real-time updates on estimated delivery location and time can help reduce anxiety and increase satisfaction. Flexibility: Offering customers the option to choose delivery time and...
location can significantly enhance their experience. This can be achieved through features such as same-day delivery, weekend delivery, and alternative delivery locations. Personalization: Matching the customer's experience with their preferences can help create brand loyalty. This can be done through personalized recommendations, customized packaging, and personalized delivery options. Efficient Communication: Providing clear and concise communication can greatly enhance the customer's journey. This includes providing easy-to-understand tracking information, timely notifications, and responsive customer service. By implementing these strategies, parcel delivery companies can significantly improve the customer's journey and create a loyal customer base.

Based on the information provided, we are discussing challenges related to the courier service company. The challenges mentioned include:

1. operational capacity, which can hinder the company's ability to meet customer demand and provide efficient services.
2. data integration, which can impede smooth operations and decision-making processes.
3. Systemic and process-related issues, the system faces problems and inefficiencies at a systemic and process level, which can lead to operational difficulties.
4. Lack of supervision and follow-up, which can result in unaddressed issues and challenges within the system.
5. Optimal routing and allocation, the current system lacks optimal vehicle routing and allocation, which can impact service efficiency and customer satisfaction.
6. Performance short-comings, there are identified shortcomings in meeting expected service standards and performance levels.
7. Service diversity, the service provided lacks diversity, potentially limiting options and choices for customers.

Addressing these challenges is crucial for enhancing operational capacity and improving the overall customer experience. Identifying these challenges can serve as an effective step and an accelerator towards achieving innovation goals, both reactively and proactively. Reactively, it allows the company to address existing issues and inefficiencies, leading to improvements in operational capacity and service quality. Proactively, it enables the company to anticipate future needs and market trends, fostering a culture of innovation and continuous improvement. By recognizing and addressing these challenges, the company can position itself as a forward-thinking and customer-centric organization, driving innovation in the courier service industry.

4.1 Proposed Improvements

Here are some innovative approaches to address the identified challenges:

1. Utilizing Artificial Intelligence and Data Analysis Systems: By using AI and data analysis systems, various data can be integrated to improve routing, optimize performance, and predict customer needs.
2. Implementing Business Process Management (BPM) Systems: Implementing BPM systems can improve system processes and make structural and performance improvements.
3. Using New Monitoring and Supervision Methods: By using new monitoring and supervision technologies, weaknesses and issues can be actively identified and necessary improvements can be made.
4. Offering Diverse Services: Introducing new and diverse services can expand options and choices for customers, enhancing customer satisfaction and loyalty.
5. Implementing Dynamic Routing and Allocation Algorithms: By developing and implementing dynamic routing and allocation algorithms, the company can optimize vehicle routes in real-time, leading to improved service efficiency and reduced delivery times.
6. Introducing Service Performance Analytics: By leveraging advanced analytics tools, the company can gain insights into service performance, identify areas for improvement, and make data-driven decisions to enhance service quality and meet performance standards.
7. Enhancing Customer Engagement Platforms: Developing interactive customer engagement platforms and feedback mechanisms can provide customers with diverse service options and gather valuable insights to tailor services according to customer preferences.
8. Adopting IoT for Asset Tracking: Implementing Internet of Things (IoT) technology for asset tracking can provide real-time visibility into the location and status of packages, enabling proactive intervention in case of delays or issues.
9. Collaboration with Third-Party Logistics Providers: Collaborating with third-party logistics providers can offer additional service diversity and enable the company to expand its reach and capabilities without significant infrastructure investments.
By embracing these innovative strategies, the courier service company can overcome operational challenges, improve service quality, and enhance its competitive position in the market.

5. Conclusion

In today's fast-paced and digital world, businesses' audiences live in a world where next-day and in some places, same-day delivery is rapidly becoming the norm. Creating an excellent delivery experience for customers is not only about meeting these evolving expectations, but also about building trust and increasing the likelihood of repeat purchases. The delivery parcel logistics industry places significant importance on innovation. With the rapid advancements in technology, it is essential for companies to embrace innovation in order to remain competitive and meet the changing needs of customers. By utilizing innovative solutions such as artificial intelligence, machine learning, and IoT, logistics companies can streamline their operations, improve efficiency, and enhance the overall customer experience. For example, the implementation of drone delivery systems can facilitate faster and more accurate deliveries, particularly in remote areas. Additionally, the integration of real-time tracking, data analytics, and predictive modeling can empower logistics providers to optimize routes, reduce delivery times, and proactively address potential disruptions. Ultimately, innovation in delivery parcel logistics allows companies to stay ahead of the competition and deliver exceptional services to their customers.

An effective way to drive innovation is through the identification of customer experiences and the creation of a customer journey map. In this paper, an initial study was conducted for a case study that requires further research to assess validity and examine the output. In this case study, an attempt was made to model the customer journey for parcel delivery and based on that, a roadmap for innovation was outlined. In the end, recommendations were made for problem-solving and innovation, which require further implementation and examination of the original results from the recommendations. In the case of a courier service company, this map outlines the process of customer and parcel journey, allowing for a comprehensive understanding of customer expectations, needs, goals, and pain points. By identifying these key elements, organizations can uncover challenges and create a roadmap for innovation within the company. This roadmap serves as a foundation for proposing solutions that address these challenges, employing both reactive and proactive innovation strategies. The results show that the customer journey map and the identification of customer needs provide valuable insights for parcel delivery companies to enhance the customer experience. Strategies such as transparency, flexibility, personalization, and efficient communication can significantly improve customer satisfaction and foster brand loyalty. However, there are several challenges that need to be addressed, including operational capacity, data integration, systemic and process-related issues, lack of supervision and follow-up, optimal routing and allocation, performance shortcomings and limited services diversity. Addressing these challenges is crucial for driving innovation, improving operational efficiency, and positioning the company as customer-centric. By proactively and reactively tackling these challenges, companies can foster a culture of innovation, continuously improve their services, and meet the evolving needs of customers in the courier service industry. Moreover, this research suggests to the establishment of a dynamic and continuously updated customer journey map, which serves as a valuable input for generating innovative solutions, fostering creativity, and encouraging brainstorming within the organizational culture.

References


Biography

**Mehrdad Fakher** is an entrepreneur, founder, chairman of the board of directors of Fakher Holding, and the CEO of Tipax. He was born in June 1984 in Tehran. His father is the founder of Tipax, and his mother is an entrepreneur in the post industry and logistic services. With his father's decision, Fakher moved to England and received his primary education at Aldenham and Warminster schools. Having finished high school, to create a new path in his family business, Mehrdad Fakher began to study business management at Adamson University in England in 2002 after returning to Iran and completing his master's degree, Ph.D. Upon returning to Iran, he took over the management of Tipax's branches in Tehran to evolve Tipax by the benefit of leading-edge knowledge and relying on what he had learned from logistics. The year 2017 was a year of change, digital transformation, and business development based on technology for Mehrdad Fakher. He formulated a new strategy for Tipax this year and made a big difference in this well-known company. To do this, he designed software called Jet, which today regulates Tipax's entire process. In addition to Tipax, Mehrdad Fakher set up other sister companies to complete his logistic supply chain. In 2016, with...
the launch of Fakher Holding, he also endeavored to expand his business with new ideas into industries such as furniture, information technology, online platforms, and garment.