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Customer Engagement Transformation: A Critical Factor for Successful Digital Transformation Strategies in the Transportation Industry

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Abstract: *Customer engagement transformation is a key aspect in developing digital transformation strategies in today's workplace. This paper aims to present an analysis of critical success factors (CSFs) that influence customer engagement transformation within the context of digital transformation strategies. The research methodology involves a combination of in-depth case studies of several organizations that have successfully implemented digital transformation strategies with a focus on employee engagement. Customer surveys, interviews with organizational leaders, and internal document analysis are the primary instruments for data collection. This paper will discuss the implications of using the latest technology, digital collaboration platforms, and supportive leadership approaches in achieving customer engagement transformation. We will also explore the impact of factors such as work-life balance, skills development, and organizational culture on the success of transformation strategies.*

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INTRODUCTION

Digital operations transformation has become inevitable in the transportation services industry, along with the acceleration of technological developments. This shift not only involves changes in technological infrastructure but also requires transportation companies to understand and respond to increasingly dynamic consumer behavior changes. In the digital operations transformation journey, a company's success lies not only in its ability to adopt the latest technology, but also in its ability to build and maintain strong customer engagement.

Digital transformation is about changes in the structure, processes, functions, and business models of an organization due to the adoption of digital technologies to radically improve its performance [1]. It can provide many benefits to organizations including improving organizational processes, enhancing customer value propositions, providing better customer collaboration, improving customer service quality, reducing product and service costs, gaining competitive advantage, and enhancing customer experience [2][3]. As a result, many organizations have invested in digital transformation in today's dynamic environment [4].

Transportation is a crucial component of a country's economic and social infrastructure. The industry has undergone significant developments throughout its history, from innovations in vehicles to more efficient service delivery. However, in recent decades, the most significant change impacting the transportation industry has come in the form of innovations in digital business operations [5].

This largely involves changing core business operations and modifying processes, as well as organizational structures, as companies must prepare management practices to undertake this complex transformation [6]. Consequently, society as a whole is facing radical changes due to the development of digital technologies and their widespread adoption across all markets [7]. To add to the growing interest from clients, organizations are facing fiercer competition due to globalization [8] and are putting pressure to go digital before other companies do, in order to survive and achieve competitive advantages [9].

The importance of customer engagement as a Critical Success Factor (CSF) in the digital operations transformation of transportation services has emerged as a strategic issue. While transportation companies may have advanced technological infrastructure, the success of their digital operations transformation is inextricably linked to their ability to leverage customer engagement to enhance user experience, increase customer satisfaction, and deeply understand market needs.

Through a SWOT approach, this study aims to provide in-depth insights into how transportation companies can maximize strengths, mitigate weaknesses, capitalize on opportunities, and address threats in the context of customer engagement as a CSF. The results of this analysis are expected to guide companies' strategic decision-making in designing and implementing successful digital operations transformations, by positioning customers as the primary driver of change.

LITERATURE REVIEW

Digital Operational Transformation

The pace of disruption and change appears to be increasing in all organizations [10]. Continuous innovations that disrupt traditional business models, the expansion of business ecosystems, and customer preferences for digital experiences make it crucial for organizations to consider the prospects of digital technologies [11]. Organizations that leverage digital technology resources may have multiple motives, such as meeting stakeholder expectations, including compliance [12], simplifying processes, innovating [13], preparing for risks and competition [14], while improving business models [11], [15], [16].

Digital Operational Transformation is a continuous process that aims to improve a company's value proposition by triggering significant changes in its resources through a combination of digital technologies [17]. Digital Operational Transformation refers to a profound business transformation by applying the latest digital technologies to improve business processes [18], procedures, corporate culture [14], and customer experience [13], [19]. Digital Business Transformation is widely recognized as a digital technology-based business improvement to survive in the digital era [20], [21]. Westerman et al. [22] argue that the two dimensions of DBT are the level and maturity of digital technology adoption and transformation management capabilities, which address leadership, culture, change management, and governance.

Critical Success Factor

CSF is an analytical method that considers several critical aspects within a company's environment to define the factors that influence the success of a company or organization. This can be determined if the organization's objectives have been identified. CSF analysis provides a company with an overview of the critical aspects of each activity and business process that influence the company's performance in achieving its vision and mission and business success. The purpose of CSF is to interpret objectives more clearly to determine what activities must be carried out and what information is needed.

CSF are a collection of analyses of many success-determining processes. CSFs are necessary to achieve a company's mission. Based on the results of a SWOT analysis of a strategy, several factors that can determine the success of a strategy can be identified after it is implemented..Critical Success Factor (CSF) is a management term used to describe the elements required for an organization or project to achieve its mission. To achieve this goal, it is necessary to understand each key success factor and key result area. The concept of success factors was developed by D. Ronald Daniel of McKinsey & Company in 1961. This process was then refined into Critical Success Factors by John F. Rockart between 1979 and 1981. In 1995, James A. Johnson and Michael Friesen applied Critical Success Factors in various fields [23].

In terms of operational transformation, there are several stages in achieving CSF so that it can be implemented by the company [24].

Operational Transformation through User Experience Improvement:

1. Integrating user-centric design and customer feedback into every operational step to enhance the quality of the user experience.
2. Implementing a Mobile-First Strategy: Aligning operations with a mobile-first strategy to ensure optimal accessibility and responsiveness via mobile devices, increasing user engagement.
3. Optimizing Data Security and Privacy: Updating and enhancing security protocols and data privacy policies across every aspect of operations to protect sensitive information.
4. Operational Transformation through Analytics and Data-Driven Decision-Making: Using data analytics to understand patterns and trends, enabling informed and effective decision-making at every stage of operations.
5. Technology Integration for Increased Efficiency: Integrating the latest technologies, such as automation systems and artificial intelligence, to improve efficiency and accelerate operational processes.
6. Optimizing Content and Digital Marketing: Transforming operations to support digital marketing strategies, with a focus on producing quality content and marketing through digital platforms.
7. Social Media Engagement in Operations: Building social media engagement as part of operations, responding to customer feedback, and leveraging social platforms to enhance brand presence and reputation.
8. Improving Response Speed and Accuracy: Optimizing systems and processes for faster response to customer requests, ensuring effective operational speed.
9. Innovation and Adaptation at the Core of Operations: Instilling a culture of innovation and adaptation within every layer of operations to continuously evolve and adapt to market and technological changes.
10. Meeting Customer Expectations as a Top Priority: Designing and executing

operations with a primary focus on meeting customer expectations, through the implementation of best practices and using customer feedback as a primary guide.

By combining the operational transformations in the points above, organizations can achieve operations that are more adaptive, efficient, and in line with user and market demands.

Transportation

According to Morlok (1978) [25], transportation is defined as the activity of moving or transporting something from one place to another.

According to Bowersox (1981) [26], transportation is the movement of goods or passengers from one place to another, where the product is moved to its required destination. In general, transportation is the activity of moving something (goods and/or materials) from one place to another, either with or without transportation.

According to Steenbrink (1974) [27], transportation is the movement of people or goods using equipment or vehicles to and from geographically separated places.

According to Papacostas (1987) [28], transportation is defined as a system consisting of specific facilities, along with a flow and control system that enables people or goods to move from one place to another efficiently at any time to support human activities.

The transportation of people or goods is usually not the final destination; therefore, the demand for transportation services can be called derived demand, arising from the demand for other commodities or services. Therefore, the demand for transportation will only arise if there are driving factors. The demand for transportation services does not stand alone but rather is hidden behind other interests [25]. Essentially, the demand for transportation is caused by the following factors [29]:

1. The human need to travel from one location to another for the purpose of participating in an activity, such as work, shopping, school, etc.
2. The need to transport goods for use or consumption in another location.

RESEARCH METHOD

In the ever-evolving digital era, the influence of services on various aspects of business is increasingly under scrutiny. One aspect that has garnered considerable attention in the business world is how social media impacts the customer experience. Positive and transformational customer experiences can be one of the most valuable assets in maintaining customer satisfaction and increasing loyalty.

This study aims to explore the impact of social media use on shaping transformational customer experiences. We will use the SWOT analysis method as a framework to evaluate the factors influencing users' use of transportation services to achieve an exceptional customer experience.

This method will allow for:

- Identifying Strengths: In the context of digital operations transformation, organizational strengths such as technological capabilities, employee skills, and financial resources can be identified. These factors may become CSFs that support the success of digital transformation.
- Analyzing Weaknesses: Weaknesses such as a lack of digital experience or inadequate system integration can be identified as areas requiring special attention in CSF management.

- Exploring Opportunities: Helping organizations identify market or technology opportunities that can be leveraged. CSFs can relate to how the organization can optimize these opportunities through digital operations transformation.
- Identifying Threats: Threats such as intense competition or regulatory changes may require CSFs to address risks that arise during the transformation process.

Through this SWOT analysis, SWOT analysis can provide an in-depth understanding of the factors that influence digital operations transformation and can be a foundation for identifying and managing CSFs effectively.

Data Collection

In conducting this research, the author chose quantitative research with a comparative approach. The type of data used was raw data as obtained from respondents through a survey. In this study, the population was transportation service users who frequently use them for their daily activities, while the sample was taken for the study.

Data analysis method, One method used so far is data collected from all respondents or other data sources. Data analysis activities include grouping data by respondent type and variable, grouping data based on variables, and presenting data for each variable studied to all respondents for calculations in response to the problem formulation.

Data Survey

Data collection was carried out using a survey method using data collection from customer complaints or those who felt there was a lack of supporting technology in the current era for the Transportation Industry.

RESULT AND DISCUSSION

Before the digital transformation of the transportation industry, conditions were likely very different from what we see today. Here's a general overview of the existing conditions in the transportation industry before the digital transformation era:

Table I. Existing Condition

No	Existing Condition	Information
1	Manual and Fragmented Processes	Operational systems that rely on manual and fragmented processes can result in slow response times, lack of coordination between business units, and potential human error.
2	Limitations in Technology Integration	Limitations in technology integration between various elements in the transportation service supply chain. Ineffectively connected systems can hamper operational efficiency.
3	Limited Communication with Customers	Lack of direct communication channels between transportation

No	Existing Condition	Information
		service providers and customers. Information may not be easily accessible or transparent to customers.
4	Uncertainty and Information Delay	Delays in providing real-time information to customers, such as estimated arrival times, trip status, and other updates. This can cause uncertainty and frustration for service users.
5	Suboptimal Route and Capacity Management	The absence of an adequate system for route and capacity management can result in suboptimal travel arrangements, increased travel times and potential crowding.
6	Inability to Access Data Effectively	Lack of ability to access and analyze data quickly and effectively. This can hinder the ability to make quick and efficient decisions.
7	Lack of Personalized Service	Lack of personalization in the services provided to customers. The lack of a deep understanding of individual preferences can hinder the ability to deliver tailored experiences.
8	Security and Privacy Uncertainty	Potential concerns regarding data security and privacy, especially if there is a lack of robust security policies and measures.
9	Not Maximizing Utilization of the Latest Technology	Not maximizing the potential of the latest technologies such as the Internet of Things (IoT), Big Data, and predictive analytics to improve efficiency and quality of service.
10	Limitations of Product and Service Innovation	Lack of innovation in the products and services offered, making it difficult to keep up with changing trends and customer expectations.

The table above shows that many customer complaints in the transportation industry still make it difficult for users to use the available transportation service platforms, due to the lack of adequate, up-to-date technology to facilitate users' use of an up-to-date and adequate platform. Therefore, the author provides a solution by incorporating digital

transformation into these transportation services using a SWOT analysis. The following is a SWOT analysis for digital transformation in the transportation industry:

Table II. SWOT Analysis (Strength)

No	Strength	Information
1	Employee Skills	Employees have the ability to learn and adopt new digital skills. Having technical skills can increase productivity and efficiency.
2	High Level Management Support	Commitment from company leadership to supporting employees' digital transformation. Resources provided by management for digital skills training and development.
3	Latest Technology Available	Availability of the latest technologies such as IoT, big data analytics, and software solutions that can support employee transformation.
4	Potential for Increased Operational Efficiency	Opportunities to improve operational efficiency through process automation and the use of cutting-edge technology. Improve logistics performance and management by adopting digital solutions.

Table III. SWOT Analysis (Weakness)

No	Weakness	Information
1	Lack of Digital Literacy	Some employees may have low levels of digital literacy, requiring additional training. Potential resistance to change from some employees.
2	Implementation Costs	High costs associated with investing in technology infrastructure and employee training. Budget constraints may be a barrier.
3	Dependence on Existing Infrastructure	Difficulty integrating new technology with existing infrastructure. Potential operational disruptions during the implementation phase.

Table IV. SWOT Analysis (Opportunity)

No	Opportunity	Information
1	Increased Efficiency and Productivity	Opportunities to improve operational efficiency and productivity through automation and technology integration. Increased employee engagement and convenience.
2	Expansion of Services and Business Models	Potential to develop and expand service offerings. Opportunities to adopt new business models powered by digital transformation.
3	Improving Customer Service Quality	Opportunities to improve customer experience through real-time monitoring and accurate information.
4	Innovation in Logistics Management	Opportunities to implement innovations in route planning, inventory management, and vehicle maintenance. Increased responsiveness and responsiveness to market changes.

Table V. SWOT Analysis (Threats)

No	Threats	Information
1	Cultural Change and Uncertainty	Potential employee resistance to cultural change. Uncertainty and anxiety regarding work and employee roles in a digital environment.
2	Data Safety and Security	Threats related to data security and privacy, particularly in the management of customer and operational information. Potential vulnerability to cyberattacks and security breaches.
3	Competition and the Speed of Industrial Change	Fierce competition with competitors who may be quicker to adopt new technologies. Rapid changes in technology and industry trends.
4	Dependence on Third Parties	Dependence on specific service providers or technology vendors that may pose risks in the event of disruption or loss. Potential vulnerability to changes in regulations or market conditions.

Referring to the results of the SWOT analysis presented previously, it is clear that the findings of this analysis provide a comprehensive understanding that plays a crucial role in developing a more targeted strategy. This analysis enables organizations to identify and respond to various existing obstacles and limitations, while simultaneously capitalizing on opportunities from the external environment and strengthening their internal potential, allowing for a more planned, flexible, and sustainable implementation of digital transformation in the transportation sector.

CONCLUSION

The implementation of digital transformation in the transportation sector opens up vast opportunities to drive constructive change while improving operational performance and efficiency. The success of these initiatives depends heavily on an organization's ability to optimize internal potential, including human resource competency and leadership commitment, while also managing various constraints that may require additional investment. As market dynamics continue to evolve, companies are required to identify strategic opportunities and formulate adaptive measures to ensure long-term growth.

Conversely, challenges such as adapting organizational culture and information security risks need to be anticipated through the implementation of appropriate control strategies. These efforts can be realized through the implementation of structured training programs, strengthening data protection systems, and implementing effective internal communications to minimize resistance and encourage active employee involvement in the digital transformation process. By addressing these critical success factors, the transportation industry has the opportunity to build a solid foundation for sustainable digital transformation while generating significant added value for the organization and its stakeholders.

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