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Investigating The Critical Success Factors Of Digital Transformation For Improving Customer Experience

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INVESTIGATING THE CRITICAL SUCCESS FACTORS OF DIGITAL TRANSFORMATION FOR IMPROVING CUSTOMER EXPERIENCE

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Abstract

Digital transformation has a significant impact on customer experience which is directly related to the profitability and even the survivability of an organisation. There is, however, lack of understanding of the critical success factors of digital transformation for improving customer experience. This paper presents an investigation of the critical success factors of digital transformation for improving customer experience in organisations. A conceptual framework is developed based on a review of the related literature. Semi-structured interviews with the use of the Delphi method have been conducted. This leads to the identification of the critical success factors of digital transformation for improving customer experience in organisations. Such findings can help organisations develop appropriate strategies and policies to better implement digital transformation programs for improving customer experience.

Keywords:

Digital transformation, customer experience, critical success factors, dynamic capability theory

1. Introduction

Digital transformation is about the changes in an organisation`s structure, processes, functions, and business models due to the adoption of digital technologies for radically improving its performance (Hess et al., 2015). It can lead to many benefits for organisations including improving organisational processes, enhancing customer value propositions, providing better customer collaboration, improving the quality of customer services, reducing the costs of products and services, gaining competitive advantages, and improving customer experience (Davenport, 2013; Kruschwitz et al., 2014; Westerman and Bonnet, 2015). As a result, numerous organisations have been investing in digital transformation in today's dynamic environment (Palmer et al., 2015; Ward and Peppard, 2016).

Improving customer experience has become one of the most significant motivations for organisations to implement digital transformation (Kruschwitz et al., 2014). Digital transformation can improve customer services and enhance customer collaboration

(Venkatesh et al., 2013). It has the potential to improve operational efficiencies in organisations (Nylén and Holmström, 2015). Digital transformation can assist organisations to build dynamic and flexible business models for delivering better customer value (Knapp et al., 2017). It has the ability to enhance data analytics capabilities for better understanding customers (Bonnet et al., 2014). This leads to the wide adoption digital transformation in organisations across the world for improving customer experience (El Sawy et al., 2013).

The implementation of digital transformation for improving customer experience is a complex process. It involves managing changing customer behaviours, understating complex customer information (Westerman and Bonnet, 2015), optimising customer processes (Berman, 2012), enhancing business models (Nwankpa and Roumani, 2016), integrating technologies (El Sawy et al., 2013), and reacting to changing business conditions (Hess et al., 2015). A better understanding of the critical success factors of digital transformation for improving customer experience would ensure its successful implementation in organisations.

Several studies have been conducted for understanding the implementation of digital transformation for improving customer experience. Such studies primarily focus on (a) evaluating the strategies for digital transformation, (b) investigating the adoption of digital technologies for digital transformation, (c) analysing the value of digital transformation, and (d) examining the customer engagement features and processes through digital transformation. There is, however, lack of studies of the critical success factors of digital transformation for improving customer experience in organisations.

This paper aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. A conceptual framework is developed based on a review of the related literature. Semi-structured interviews along the line of the Delphi method have been conducted with digital transformation experts in an Australian organisation. This leads to the identification of the critical success factors of digital transformation for improving customer experience in organisations. Such findings can help organisations develop appropriate strategies and policies to better implement digital transformation for improving customer experience in organisations.

In what follows, Section 2 presents an analysis of the related literature of digital transformation for improving customer experience. Section 3 develops a conceptual framework for investigating the critical success factors of digital transformation for improving customer experience. Section 4 describes the research methodology. Section 5 presents the research finding. Finally, Section 6 presents the conclusion and future research.

2. Literature review

Digital transformation assists organisations in significantly changing their (a) business models, (b) operational processes, (c) products and services, and (d) customer engagement (Berman, 2012; Kruschwitz et al., 2014; Bonnet et al., 2014; Ward and Peppard, 2016). It involves in re-designing the revenue structure in an organisation (Westerman and Bonnet, 2015). Digital transformation induces agility, improves reliability, and introduces transparency (Kugeler et al., 2013; Bonnet et al., 2014). It affects the delivery of organisational products and services (Kruschwitz et al., 2014). Digital transformation improves customer interactions (Westerman and Bonnet, 2015). This leads to a significant improvement of customer experience (Palmer et al., 2015; Ward and Peppard, 2016).

There are various activities in the implementation of digital transformation for improving customer experience. These activities include (a) formulating customer experience improvement strategies (Tafti et al., 2013), (b) analysing customer data (Shockley et al., 2012), (c) enhancing the customer value proposition (Berman, 2012), (d) developing customer interaction channels (Wrigley et al., 2015), and (e) redesigning customer engagement processes (Lemon and Verhoef, 2016). To ensure the successful implementation of digital transformation, all these activities have to be coordinated in a timely manner with specific attention being paid to the organisational functions, technologies, and stakeholders.

The implementation of digital transformation for improving customer experience is not a simple task (Ward and Peppard, 2016). Organisations face many challenges from different perspectives (Kruschwitz et al., 2014; Bonnet et al., 2014; Feki et al., 2016). As a result, it becomes critical in organisations to manage these challenges effectively for successfully implementing digital transformation (Berman, 2012; Kruschwitz et al., 2014).

Several studies have been conducted to investigate the implementation of digital transformation towards improving customer experience in organisations (Palmer et al., 2015; Venkatesh et al., 2013; Gao et al., 2010; Nylén and Holmström, 2015). Palmer et al. (2015), for example, conduct a comprehensive analysis of available strategies for implementing digital transformation for improving customer experience. Klaus and Nguyen (2013) evaluate the process of digital transformation for enabling multi-channel customer interaction in order to improve customer experience in retail banking. Berman (2012) investigates the critical factors for reshaping the customer value proposition through greater customer collaboration. Andzulis et al. (2014) examine the impact of integrating social media technologies in the operations of an organisation for improving the customer experience. These studies provide better understanding of the digital transformation process in organisations from different perspectives.

There are several attempts to investigate the critical success factors of digital transformation in organisations. Chen et al. (2011), for example, investigate the critical success factors of digital transformation in high tech organisations in Taiwan. Astri (2015) evaluates the critical success factors of digital transformation for improving the performance of its customer processes. Zhou (2011) studies the critical success factor of digital transformation for improving customer experience in organisations in China. Overall these studies try to identify the critical success factors from the perspective of either the internal organisation or the perception of customers for digital transformation. There is, however, lack of the adoption of a holistic approach for better understanding the critical success factors of digital transformation for improving customer experience. To adequately address this issue, this study aims to investigate the critical successful factors of digital transformation in organisations for improving the customer experience in a holistic manner.

3. An ABCD Framework

The dynamic capability theory states that the ability of an organisation is determined by its capability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Pisano et al., 1997). Such a theory provides this research with a solid background for investigating the critical success factors of digital transformation for improving customer experience. This leads to the development of a conceptual framework referred to as an ABCD framework based on the analysis of the related literature. The ABCD framework consists of four dimensions including (a) analytics, (b) business, (c) customers, and (d) digital shown as in Figure 1.

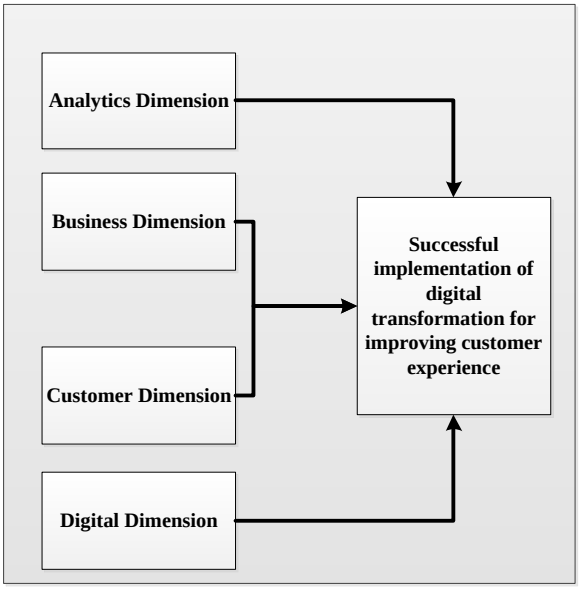

Figure 1: An ABCD framework

3.1 Analytics

The analytics dimension is related to the systematic analysis of customer data using digital technologies to discover embedded knowledge in organisations. Such knowledge can then help organisations better collaborate with their customers for improving customer experience (Shockley et al., 2012). Usually there is a large volume of digital data in structured and un-structured formats available in organisations (Fukawa et al., 2016). Digital transformation of an organisation allows an organisation to perform complex analytics for better understanding customer behaviours, market trends, and customer engagement patterns (Fukawa et al., 2016).

There are various factors in the analytics that can affect the success of digital transformation including customer understanding (Dong et al., 2006; Kruschwitz et al., 2014), data capturing (Sambamurthy and Zmud, 2012), digital customer data (Westerman and Bonnet, 2015), customer insights (Berman, 2012; Shockley et al., 2012), market trends (Cartwright et al., 2012), customer centric decision making (Palmer et al., 2015), customer segment (Cartwright et al., 2012; Matt et al., 2016), customer engagement pattern (Ward and Peppard, 2016), and forecasting customer behaviours (Shockley et al., 2012). The effective consideration of these factors has been signed out as most critical for digital transformation towards improving customer experience.

3.2 Business

The business dimension is about the changes of business conditions for improving customer experience through digital transformation in organisations. The internal conditions in an organisation are related to changes in management decisions, financial conditions, organisation's performance, organisation's directions, organisation`s infrastructure, and support activities (Hess et al., 2015). External conditions are mostly related to competition, regulation, and policies (El Sawy et al., 2013; Verhoef et al., 2014; Matt et al., 2016). Such a dimension includes four components including digital strategy, business model, customer value proposition, and business strategy.

There are various business factors that can affect the success of digital transformation for improving customer experience. These factors include value proposition (Berman, 2012), customer analysis (Hess et al., 2015), market analysis (El Sawy et al., 2013), cost optimisation (Sambamurthy and Zmud, 2012), flexible pricing (Dong et al., 2006), cost reduction (Cartwright et al., 2012), product implementation strategy (Ward and Peppard, 2016), product demand and supply (Dong et al., 2006), and regulations and policies (Gao et al., 2010). The consideration of these factors is significant towards the success of digital transformation for improving customer experience.

3.3 Customer

The customer dimension concerns about the entire customer interaction journey with the organisation through digital transformation. It focuses on bi-directional interactions between customers and organisations (Lemon and Verhoef, 2016). Two significant aspects of improving customer experience through digital transformation including (a) customer touch points and (b) customer engagement usually need to be considered.

There are various customer factors that can affect the success of digital transformation for improving customer experience, customer collaboration (Berman, 2012; Kruschwitz et al., 2014), customer interaction points (Berman, 2012), customer engagement (Cartwright et al., 2012; Berman, 2012), services (Ward and Peppard, 2016), personalised sales and marketing (Palmer et al., 2015; Ryan, 2016), process improvement (Sambamurthy and Zmud, 2012), service quality (Westerman and Bonnet, 2015), customer self-serving (Berman, 2012, Westerman and Bonnet, 2015), and process transparency (Gao et al., 2010). The consideration of these factors in digital transformation is identified as significant towards the improvement of customer experience in organisations.

3.4 Digital

The digital dimension refers to the adaptability, usability, and integration of digital technologies and their applications in organisation`s existing infrastructure. It considers the capability of various digital technologies for improving customer experience effectively. Usually there are five aspects including (a) applications, (b) platforms, (c) infrastructure, (d) functions and (e) channels that have to be considered.

There are several digital factors that can affect the success of digital transformation for improving customer experience including ease of use (Zhou, 2011), availability (Kruschwitz et al., 2014), infrastructure capacity (Palmer et al., 2015), data security (Dong et al., 2006), and digital content (Palmer et al., 2015). These factors play a very critical role in digital transformation for improving customer experience in organisations.

4. Research methodology

The aim of the study is to investigate the critical success factors of digital transformation for improving customer experience in organisations. Such a study is exploratory in nature. It can seek experts` experience and belief towards improving customer experience through digital transformation. As result, a qualitative methodology is adequate for the study. Using a qualitative approach helps this research understand people's motivation, beliefs and actions in digital transformation for improving customer experience.

The study adopts interviews for gathering appropriate research data. This is because interviews are as a social research method for capturing and understanding perceptions, beliefs, and interpretations of a group of population (Deng and Gupta, 2005). Interviews make

it possible to gather rich data from people in various roles and situations (Myers, 2013). They help to understand how people think and feel (Hussey et al., 2003). They are effective for getting the insights about the experience of the interviewee who can provide in-depth information about the subject. This study follows two rounds of semi-structured face-to-face interviews for data collection.

The interview questions are developed with respect to the ABCD framework. Such questions focus on the nature, process, and elements of digital transformation in organisations. Participants are first contacted through emails that contain the brief summary about the project. The participants for this research are selected from an organisation in Australia that has implemented a digital transformation program. Once the participants accept to volunteer for the research, the details of the interview such as the time and location are communicated.

28 invitations were sent out. 21 have accepted to be part of the research. The participants experience is ranged from 5 years to 18 years. During the interview, at first the participant is introduced with the research topic. For each round of interview iteration, a list of pre-identified question is prepared. The average interview lasts for about 60 minutes, ranging from 45 minutes to 90 minutes.

Thematic analysis is used for analysing the qualitative data. Five stages including transcribing data, organising data, coding data, theming data, and interpreting data are involved (Miles and Huberman, 1994; Karunasena et al., 2013). In the first stage, information related to the topic of the study is captured in different formats including notes, diagrams, files, pictures, and supporting reports from the participants. In the second stage, data is captured and transcribed. The third stage involves providing codes for the participants for performing thematic analysis. The fourth stage involves identifying the themes consisting of three steps including (a) data reduction which focuses on deriving the most relevant data for the research (Alhojailan, 2012), (b) data display which focuses on organising, compressing, assembling, and data presentation (Miles and Huberman, 1994), and (c) data conclusion which focuses on summing up conclusions (Alhojailan, 2012). The fifth stage involves revisiting the research question and using the themes identified to answer the questions.

5. Research Finding

The research is organised around the dimension of analytics, business, customer, and digital. The identified factors under each dimension are examined, discussed and presented based on the relevance, characterises, and the relationship with the dimension. The thematic analysis presents a strong linkage between each dimension, sub-dimension, and factors, which cumulatively influence the success of digital transformation for improving customer experience in organisations. Table 1 summarises the research findings.

5.1 Analytics

Interviewees unanimously assert a positive influence of the analytics dimension on the success of digital transformation for improving customer experience. The interviewees underpinned many aspects of analytics capabilities that directly influence the effectiveness of digital transformation. An analysis of interview data presents three sub-dimensions under analytics including (a) data analytics, (b) customer trends analysis, and (b) process analytics.

Data analytics is about the analysis of customer related data which is captured through various digital channels. Interviewees coherently suggest that efficient analysis of customer related data enables organisations to understand trends and execute customer specific strategies to improve customer experience. The factors undisclosed during the analysis of the interviews for data analytics are – (a) data management, (b) data understanding, and (c) real time data

processing. One of the interviewees explains that - "*Organisation that is capable of using and understanding large un-structured data by digital transformation are able to make better decisions for their customer*".

Dimension	Sub Dimension	Critical Success Factors
Analytics	Data analytics	○ Data management, data understanding, real time data processing
	Process analytics	○ Analytics based segmentation, improved insights, customer engagement pattern
	Trends analysis	○ Forecasting analysis, predictive marketing and service, real time customer information, real time decision making, capacity utilisation analytics
Business	Strategic execution	○ Understanding customer needs, providing single view to customers, enabling customer centric execution, adapting changing market situations
	Business model	○ Effective costing model, dynamic pricing model, expanding geographies
	Value proposition	○ Unique products and services, continuous innovation, economic value, emotional value, recognition and rewards
Customer	Process	○ Process automation process optimisation, simplified customer processes, process transparency, coherent experience across various channels and devices
	Collaboration	○ Feedback, communication, training
	Services	○ 24x7 real time servicing, personalise servicing, self-servicing, service response time, improving knowledge management
	Engagement	○ Personalised marketing, proactive engagement, integrated offline and online channels
Digital	Integration	○ Digital enterprise integration, integration with 3rd party, integration with social media
	Capability	○ Multiple digital channels, platform and device independent services, high quality digital content, usability, data security and reliability
	Capacity	○ System capacity, processing capacity, performance and speed, availability

Table 1: An overview of the critical success factors of digital transformation for improving customer experience

Customer trends present key insights on the behaviour, demographical, and attitudinal direction which assist an organisation to make customer centric decisions. The factors discovered in the analysis of interview data are - (a) analytics based segmentation, (b)

improved insights, and (c) customer engagement pattern. An interviewee presents the link between segmented customer analytics and customer happiness as - "*Digital analytics segmentation focuses on data driven strategy…It ensures that the right customer segment is receiving right information…making customer feel very happy".*

Process analytics is a systematic analysis of a process and the process related information to develop critical understanding to optimise customer related processes, leading to the improvement of customer experience. The factors identified under the process analytics are - (a) forecasting analytics, (b) predictive marketing and service, (c) real time customer information, (d) real time decision making, and (e) capacity utilisation analytics. An interviewee illustrates the linkage between customer expectations and forecasting as - *"Real time forecasting in customer processes is very critical in meeting customer expectation".*

5.2 Business

The interviews highlight various aspects of business that influence the effectiveness of digital transformation for improving customer experience. These aspects are majorly related to customer expectation, market dynamics, plan to execute digital transformation, costing of products and service, pricing of product and service, and values which the customer receive from the organisation. An analysis of the interview data underpins three sub- dimensions for business, namely, (a) strategic execution, (b) business model, and (c) value proposition.

Strategic execution is related to the executing the strategic plan which organisation`s leadership and management envision for digital transformation towards improving customer experience. Most of the interviewees believe that better managing strategic execution elements including fulfilling customer needs, responding to market dynamics, inculcating technological capabilities, planning and executing customer engagement, results in greater impact to the customer experience. The factors unearthed under strategic execution are - (a) understanding customer needs, (b) providing single view to customers, (c) enabling customer centric execution, and (d) adapting changing market situations. An interviewee illustrates - *"Digital transformation helps us to bind the entire vision of enhancing customer experience right from the planning stage till the delivering stage".*

A business model is referred as the way that an organisation performs their business by focusing on the cost structure, revenue, and value. The factors identified under business model are - (a) effective costing model, (b) dynamic pricing model, and (c) expanding geographies. The following section on the interview transcript presents the significance of having effective costing model on customer experience as -*"Making the cost of product and services competitive and flexible …drives the overall reduction of cost of product…which benefits end customer who is consuming it".*

A customer value proposition is about the benefits which customer receive from the organisation`s offerings. These benefits can view from two aspects, the one which provides value that can be calculated and the other which cannot be calculated but can be experienced. The factors extracted from the analysis of interview transcripts under customer value proposition are - (a) unique products and services, (b) continuous innovation, (c) economic value of product and service, (d) emotional value, and (e) recognition and rewards. An interviewee highlights - *"Creating unique products and services grab customer attention and develop superior perceptions in comparison with other service provides".*

5.3 Customer

The customer dimension involves all the processes, features, functions, and activities related to the engagement between organisation and customers. It considers the entire journey of the customers while they engage with the organisation physically or immaterially. The analysis of

interview data presents a descriptive picture of the various feature, functionalities, and instances which can be enhanced in digital transformation for having a high influence on customer's perception. The analysis of interview data extracted four sub-dimensions, namely, (a) processes, (b) collaboration, (c) service, and (d) engagement.

Processes are related to a series of tasks, and activities which are performed internally in an organisation for its customers to enhance the overall experience. The factors extracted under processes are - (a) process automation (b) process optimisation, (c) simplified customer processes, (d) process transparency, and (e) coherent experience across various channels and devices. An interview explains the impact process optimisation on customer experience as - *"Digital transformation facilitates to optimise the operational processes which impact the cost and outcome of production….and hence improves customer offering and experience"*.

Collaboration is referred as a group of processes and features in which an organisation conjointly interacts with the customers for improving their experience. It focuses on implementing customer perceptions, suggestions, and inputs about the products and services for improving the value offering for the customers so that they can be satisfied. It is abstracted from - (a) feedback, (b) communication, and (c) training. An interview highlights - *"Customer likes to be informed and communicated with relevant information using both direct and in-direct interaction channels…which triggers customer empowerment"*.

Services are related to the set of services organisations offer to the customers for fulfilling their needs throughout the lifecycle of the organisation and customer relationship. An analysis of interview data illustrates various elements quality of customer service, ability and knowledge of people working on customer services, promptness of customer servicing, and cognizance of the customers and their characteristics, which are very critical to manage the customer experience. The factors identified under services are - (a) 24x7 real time servicing, (b) personalise servicing, (c) self-servicing, (d) service response time, and (e) improving knowledge management. An interview explains - *"Personalised services gives customers confidence on the product that they are using, improving their experience"*.

Engagement is an approach where an organisation engages with its customers in order to acquire them. It focuses on utilising digital transformation capabilities to understand customers and their needs, and to reach out to them with most appropriate offerings based on their behaviour. The factors identified under engagement are - (a) personalised marketing, (b) proactive engagement, and (c) integrated offline and online channels. An interviewee elaborates - *"Personalise marketing helps customers to make smarter decision for organisations....raising customer satisfaction"*.

5.4 Digital

Digital reflects the key features, characterises, properties, and capabilities of digital technologies that organisations adopt for digital transformation. The study reveals that a better integration and utilisation of digital technologies could propel organisation to generate better feature, functional, and processes for customer processing, leading to the improvement of customer experience. The analysis of interview data reveals various characteristics of digital technologies which could impact the effectiveness of digital transformation for improving customer experience including processing capacity, functionality, integration capability, information features, and usability. An analysis of interview data presents three sub-dimensions of digital dimension including (a) integration, (b) capacity, and (c) capability.

Integration refers to the integration of digital technology in organisation`s existing infrastructure. Interviewees reveal that organisation in order to generate specific capability for improving customer experience adopt single of multiple digital technologies based on their

motivation for digital transformation. The factors identified under integration of digital technology are - (a) digital enterprise integration, (b) integration with 3rd party, and (c) social media integration. An interviewee explains - *"It is very critical for organisation to integrate digital products and technologies with existing non-digital or other enterprise technologies to ensure to all customer related processes are of high quality"*.

Capacity refers to the ability of the digital technologies to support customer processes and functionalities for improving customer experience in an organisation. An analysis of interview data suggests various digital technologies capabilities that are used by organisation for their customer engagement processes. Interview data presents five factors under capacity - (a) multiple digital channels, (b) platform and device independent services, (c) high quality digital content, (d) usability, and (e) data security and reliability. An interviewee states - *"Creating multiple digital interaction channels provides customer with a lot of flexibility… this facility to use any functions using any channel makes the customers feel happy"*.

Capacity is related the ability to provide the maximum level of output digital technologies can sustain to make sure that the customer processes or services it caters to remains uninterrupted. An analysis of interview data extracts four factors of capacity - (a) system capacity, (b) processing capacity, (c) performance and speed, and (d) availability. An interviewee explains processing capacity and its impact on customer experience as - *"Ability to process large and complex data effectively and quickly helps in improving customer experience"*.

Summarising the discussion above leads to the development of a revised ABCD framework. This framework represents the first in-depth study to investigate the critical success factors of digital transformation for improving customer experience in organisations. It would enable the discovery of the areas of implementation which are critical for the success of such initiatives. It assists in analysing the strengths and weakness of the implementation of such initiates in organisations. Moreover, this study would be helpful for organisations to mitigate the risk of failure and realise potential benefits from the execution.

This research contributes to the field of digital transformation research both theoretically and practically. From the theoretical perspective, this research provides better understanding of the critical success factors of digital transformation for improving customer experience. From the practical perspective, this research provides a comprehensive investigation of the critical success factors of digital transformation for improving customer experience in an Australian organisation. Such a study is helpful for organisations to better implement their digital transformation programs in today's dynamic environment.

6. Conclusions

The study reveals that data analytics, trends analytics, process analytics, strategic execution, business model, value proposition, customer processes, customer collaboration, customer services, customer engagement, integration, capability, and capacity are critical for the successful implementation of digital transformation in organisations. This leads to the development of a new framework for successfully implementing digital transformation towards improving customer experience.

Despite the significance of this study to the digital transformation research, this study does have a few limitations. The study only considers a particular organisation in the investigation. It only focuses on the perspective of internal organisation stakeholders. The study only adopts the qualitative data analysis approach for conducting the research from an exploratory perspective. Future research could consider addressing these limitations for the development

of a comprehensive framework for digital transformation towards improving customer experience in organisations.

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