



Investigating the Critical Success Factors of Digital Transformation for Improving the Customer Experience in Australian Organisations

A thesis submitted in fulfilment of the requirements for the degree of
Masters of Business

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

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List of Publications

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List of Abbreviations

ACT:	Absorptive capacity theory
CCT:	Collaboration capacity theory
CE:	Customer experience
CSF:	Critical success factor
DCT:	Dynamic capabilities theory
DT:	Digital transformation
INT:	Interview
KBT:	Knowledge-based theory
RBV:	Resource-based view

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Abstract

Digital transformation is about the changes that an organisation experiences in its structure, processes, functions, and business models through the adoption of digital technologies for radically improving its performance. It is growing rapidly in organisations worldwide due to its ability to deliver numerous nonpareil values to both organisations and their customers. One of the most significant benefits that drive organisations to undertake digital transformation is the improvement of customer experience. The implementation of digital transformation for improving customer experience in organisations, however, has not been very encouraging. There is lack of understanding of the critical success factors for the successful implementation of digital transformation towards improving customer experience.

This research aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. Specifically, the research aims to (a) identify the critical success factors of digital transformation for improving customer experience, (b) develop a framework for facilitating the successful implementation of digital transformation towards improving customer experience in organisations, and (c) provide organisations with some appropriate recommendations for improving customer experience through digital transformation. To fulfil the objectives of the study, a qualitative research methodology is employed. A conceptual framework, consisting of four dimensions – analytics, business, customer, and digitalization – is developed for data collection using semi-structured interviews with digital transformation experts in an organisation in Australia. Thematic analysis is performed on the collected data for achieving the objectives of the study.

The study reveals that data analytics, trends analytics, process analytics, strategic execution, business models, 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. Based on the critical success factors identified, a new framework for successfully implementing digital transformation towards improving customer experience in organisations is developed.

This research contributes to the field of digital transformation research both theoretically and practically. From the theoretical perspective, this research contributes to better understanding of digital transformation by developing a theoretical framework for investigating 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. This study can contribute to better understanding of the critical success factors in the effective implementation of digital transformation for improving customer experience in organisations.

Chapter 1

Introduction

1.1 Research Background

Digital transformation is about the change in an organisation`s structure, processes, functions, and business models due to the adoption of digital technologies for radically improving its performance (Matt et al. 2015). It integrates digital technologies and organisational processes for generating significant improvements in organisational performance (Westerman et al. 2014a; Sahu et al. 2018a). Digital transformation can provide numerous benefits for an organisation including improving organisational processes, enhancing customer value propositions, providing better customer collaboration, improving the quality of customer services, empowering customers, reducing the costs of products and services, innovating new products and services, gaining competitive advantages, increasing customer retention, increasing revenue in-flow, and improving customer experience (Davenport 2013; Fitzgerald et al. 2014; Rajabi and Bolhari 2015; Westerman and Bonnet 2015). As a result, numerous organisations have been investing in digital transformation in today`s dynamic environment (Kane et al. 2015; Ward and Peppard 2016).

Customer experience is about a customer`s perception of and the perceived value from the consumption of specific products and services in an organisation. It directly affects the attitudes and behaviours of customers towards an organisation and its offerings (Lemon and Verhoef 2016). Improving customer experience can help organisations to improve their customer relationships, build brands, enhance customer loyalty, improve customer satisfaction, and augment competitive advantages (Dunning 2014; Prahalad and Ramaswamy

2013). Organisations can improve customer experience by better understanding customer behaviours, improving customer processes, providing better customer services, engaging effectively with customers, and optimising the cost of products and services (Chi et al. 2016; Lemon and Verhoef 2016).

Digital transformation equips organisations with various capabilities including introducing new customer interaction channels, innovating new products and services, understanding customer behaviours and trends, assisting personalised marketing and sales, providing real-time customer services, and developing dynamic pricing models (Hess et al. 2015, Lemon and Verhoef 2016; Westerman et al. 2014a; Sahu et al. 2018b). These capabilities assist organisations to enhance their customer processes, engage effectively with customers, improve features of their products and services, and provide better value offerings for their customers, leading to the improvement of customer experience (Piccinini et al. 2015).

The implementation of digital transformation for improving customer experience in organisations is a complex process (Matt et al. 2015). This is due to the nature of digital transformation, which demands (a) managing highly volatile customer behaviours, (b) analysing complex customer information (Westerman and Bonnet 2015), (c) responding to changing business conditions (Kane et al. 2015; Matt et al. 2015), (d) maintaining efficient customer processes (Berman 2012), (e) managing cost over-run (Sambamurthy and Zmud 2012), (f) providing better customer value propositions (Berman 2012), (g) continuously improving business models (Nwankpa and Roumani 2016) and (h) integrating digital technologies effectively (Bharadwaj et al. 2013). For successfully undertaking digital

transformation, it becomes essential for organisations to understand the critical success factors of digital transformation for improving customer experience.

There are several studies that have been conducted for better understanding the implementation of digital transformation towards improving customer experience (Kane et al. 2015). These studies primarily focus on (a) evaluating the strategies and their implementation for digital transformation, (b) examining customer engagement features and processes for digital transformation, (c) investigating the integration of digital technologies for digital transformation and (d) analysing the value of digital transformation. Hess et al. (2015), for example, evaluate the strategies for implementing digital transformation towards improving customer experience in organisations. Andzulis et al. (2014) investigate the impact of integrating digital technologies for improving customer experience. Klaus and Nguyen (2013) examine the customer engagement process to implement digital transformation for improving customer experience. Berman (2012) analyses the critical factors for reshaping the customer value proposition for enhancing customer experience in digital transformation. These studies show that the implementation of digital transformation can improve customer experience. Existing studies, however, are lacking in the exploration of the critical success factors of digital transformation for improving customer experience.

The present research aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. Such research can lead to the development of a conceptual framework for facilitating the implementation of digital transformation towards improving customer experience in organisations. It can provide

organisations with some specific recommendations for the effective implementation of digital transformation towards improving customer experience.

1.2 Motivation of the Research

The motivation to undertake this study is due to two main reasons. Firstly, there is lack of empirical research that investigates the critical success factors of digital transformation for improving customer experience. Although several studies exist that analyse the implementation of digital transformation for improving customer experience (Mithas et al. 2013), these studies primarily focus on the process and the technical aspect of the implementation in organisations. Few attempts have been made to investigate the critical success factors of digital transformation for improving customer experience in organisations.

Secondly, there is a need for a framework in order to adequately understand the digital transformation process for improving customer experience in organisations (Fitzgerald et al. 2014). Despite the large investment in digital transformation for improving customer experience, the successful implementation of such transformation has not been encouraging in many organisations (Fitzgerald et al. 2014; Hess et al. 2016). By having a validated framework, organisations can improve the performance, mitigate uncertainties, and reduce the risk of failures, of taking such initiatives.

1.3 Research Aims and Research Questions

This research aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. Specifically, the research aims to (a) identify the critical success factors of digital transformation for improving customer experience, (b) develop a framework for facilitating the successful implementation of digital transformation towards improving customer experience in organisations and (c) provide organisations with some appropriate recommendations for improving the performance of digital transformation towards improving customer experience. To fulfil these aims of the research, a primary research question has been developed as follows:

- *What are the critical success factors that influence the effectiveness of digital transformation for improving customer experience?*

To facilitate answering this primary research question, several secondary research questions have been developed as follows:

- *What are the factors that are critical from an organisation's perspective that can influence the success of digital transformation for improving customer experience?*
- *What is an appropriate framework for implementing digital transformation towards improving customer experience in an organisation?*

1.4 Research Methodology

The primary objective of this research is to investigate the critical success factors that influence the success of digital transformation for improving customer experience in organisations. To fulfil the objective of the study, a qualitative research methodology is

employed (Creswell 2011). A qualitative methodology is used to understand what people say and do and the reason behind their decisions and actions (Myers 2013). In particular, a qualitative methodology is used in this study to investigate the behaviours, feelings, experiences and actions of a population for a particular phenomenon (Myers 2013).

The adoption of a qualitative methodology in this research is appropriate for meeting the objectives of this study due to three reasons. Firstly, the data collected with the use of a qualitative methodology assist this study in drawing strong inferences from digital transformation experts' perceptions, experience and attitudes towards the successful implementation of digital transformation for improving customer experience in organisations (Creswell 2011). Secondly, the adoption of a qualitative methodology allows this study to build reliable consensus in a group of digital transformation experts (Padgett 2016). Thirdly, this study uses a qualitative methodology to describe and explain the relationships between the critical success factors of digital transformation for improving customer experience in organisations since there is lack of research of this kind to analyse the critical success factors of digital transformation (Creswell 2011).

As indicative in Figure 1.1, this research follows six stages to fulfil the objectives of the study. The first stage focuses on the identification of the motivation of the research and the objective that this research seeks to fulfil. This stage formulates the primary and secondary research questions for the study. In the second stage, the related literature is reviewed, leading to better understanding of digital transformation and its impact on customer experience. This stage helps in creating a basis for this research.

In the third stage, a conceptual framework for the research is developed. The conceptual framework in this study serves as a foundation for developing the interview question for identifying the critical success factors. It is based on the literature review backed by the dynamic capability theory (Teece et al. 1997). The dynamics capability theory is referred to in this study due to its ability to build understanding of the internal capabilities of digital transformation, focusing on adapting, integrating and re-configuring the internal capabilities for creating new capabilities, and enabling utilising the new capabilities towards improving customer experience.

In the fourth stage, data are collected from digital transformation experts using semi-structured interviews. The Delphi technique, which consists of three rounds of iterations, is adopted for adequately identifying the critical success factors of digital transformation for improving customer experience in organisations. The first iteration generates the preliminary list of the critical success factors by interviewing the participants in a semi-structured manner. The second iteration collects the data using structured interview questions. Finally, a list of the critical success factors is identified in the third iteration, which highlights the inputs taken from all the participants collectively. The third iteration validates the comprehensive list of the critical success factors of digital transformation for improving customer experience.

In the fifth stage, the data collected in stage four are analysed. Thematic analysis is adopted for analysing the qualitative data captured from the participants. It follows five stages of data analysis including transcribing data, organising data, coding data, theming data, and interpreting data. The outcome of this stage presents an updated framework of digital transformation towards improving customer experience.

In the sixth stage, the results of data analysis are interpreted to draw specific conclusions for adequately answering the research question. This stage provides recommendations to senior managers and executives for implementing digital transformation towards improving customer experience. The outcome highlights the limitations, implications and contributions of the study and presents the conclusion of the study. **Figure 1.1** presents the six stages of the research.

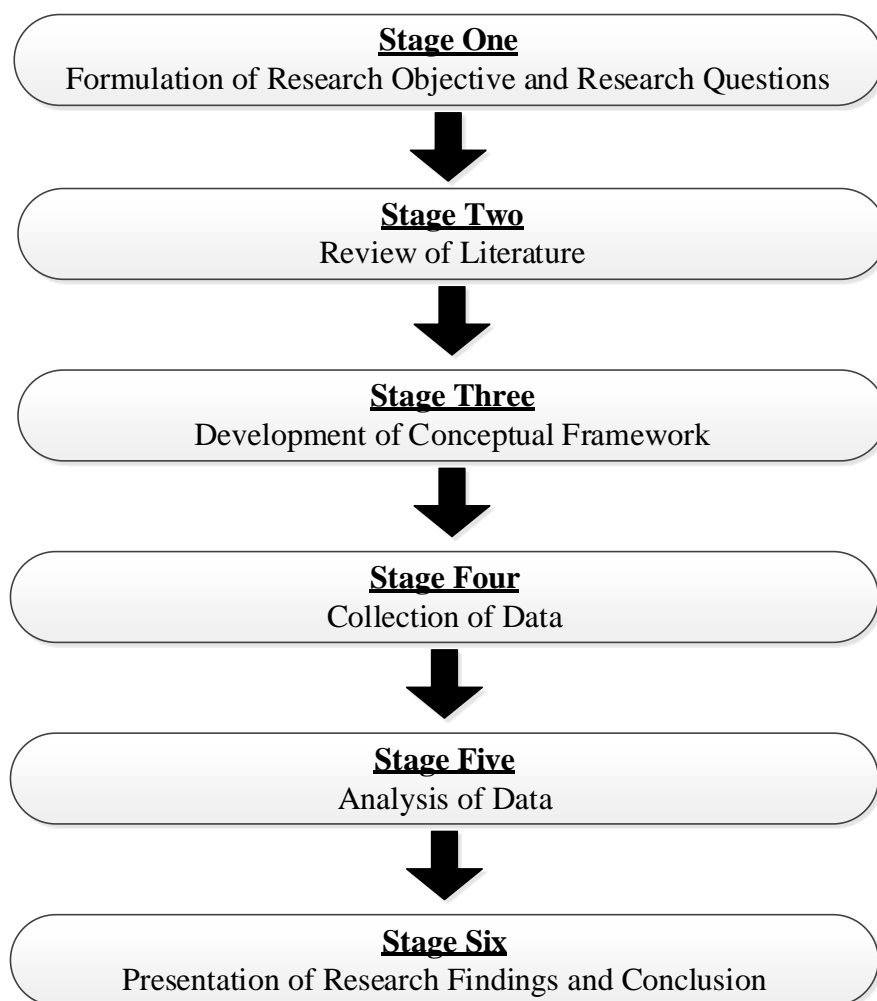


Figure 1.1 The research process

1.5 Outline of the Thesis

The research thesis is divided into six chapters. **Chapter 1** presents an introduction to the study with a specific focus on the research background on digital transformation. The chapter describes the rationale behind the study. It outlines the research objectives, the research questions, and the research methodology that the study follows.

Chapter 2 surveys the literature underpinning the study. It introduces digital transformation and highlights its key areas. The chapter discusses the characteristics of digital transformation for improving customer experience. Furthermore, this chapter reviews the existing studies related to digital transformation for improving customer to justify the need for this study.

Chapter 3 develops a conceptual framework for identifying the critical success factors of digital transformation towards improving customer experience. It highlights an analysis of existing theories and the related literature for developing the conceptual framework. The chapter presents various dimensions and the key characteristics of the conceptual framework. Such a discussion serves as a foundation of this research and helps to adequately answer the research questions in the study.

Chapter 4 focuses on the research methodology followed in this study. A discussion on the qualitative methodology is presented with an emphasis on using the Delphi technique for data collection and analysis. The chapter highlights the way in which the research is designed to meet the research objective using the selected research methodology. It presents the research method, the data collection process, and the data analysis process used in this study.

Chapter 5 presents the analysis of the qualitative data collected through interviews. It provides an overview of the data collection and analysis process and reports the detailed findings from the data analysis. The chapter presents an updated conceptual framework for successfully implementing digital transformation towards improving customer experience in organisations. Furthermore, it provides organisations with appropriate recommendations for facilitating digital transformation for improving customer experience.

Finally, **Chapter 6** presents an overview of the research findings. It revisits the research questions and presents an overview of the key findings of the study. The chapter discusses the contributions and the implications of this study. It highlights the limitations of the research and discusses the opportunities for future research in the related areas.

Chapter 2

Literature Review

2.1 Introduction

Digital transformation is growing very rapidly in organisations across the world (Kane et al. 2015). Many organisations that involve direct customer interactions are investing significantly in digital transformation (Bharadwaj et al. 2013; Kane et al. 2015; Ward and Peppard 2016). Such a rapid adoption of digital transformation is due to its ability to improve organisational processes, reduce the costs of products and services, enhance customer collaboration, increase the quality of products and services, innovate new products and services, augment competitive advantages, and improve customer experience (Westerman et al. 2014b).

Improving customer experience has been one of the most significant motivations for organisations to engage in digital transformation. Digital transformation has, therefore, been becoming one of the most significant motivations for organisations (Fitzgerald et al. 2014). Digital transformation can induce significant benefits for an organisation including improving customer relationships, building brands, improving customer loyalty, enhancing customer satisfaction, and providing a competitive edge (Piccinini et al. 2015; Westerman and Bonnet 2015). Organisations can improve customer experience by better analysing complex customer data for understanding customers, providing enhanced customer services, effectively collaborating with customers, and optimising the costs of products and services (Chi et al. 2016; Lemon and Verhoef 2016; Sahu et al. 2018a). Digital transformation enables organisations to develop new capabilities that allow them to engage effectively with

customers, enhance customer processes, and provide better customer value, leading to the enhancement of customer experience (Fulgoni and Lipsman 2014; Westerman et al. 2014b).

Despite the tremendous benefits of digital transformation, the implementation of digital transformation in organisations is not encouraging (Kane et al. 2015; Sahu et al. 2018 a). This is due to the complex implementation process of digital transformation for improving customer experience (Matt et al. 2015). Such a complex process involves managing volatile customer behaviours, enabling the understanding of complex customer information (Westerman and Bonnet 2015), optimising customer processes (Berman 2012), enhancing business models (Nwankpa and Roumani 2016), integrating technologies (Bharadwaj et al. 2013), and adapting to changing business conditions (Matt et al. 2015). Better understanding of the critical success factors of digital transformation would ensure its successful implementation in organisations.

Many studies have examined the implementation of digital transformation towards improving customer experience in organisations (Kane et al. 2015). These studies tend to approach digital transformation primarily on the technical and the process perspectives. Few attempts have been made to develop a comprehensive framework for facilitating the implementation of digital transformation for improving customer experience.

The purpose of this chapter is to review the related research on digital transformation for improving customer experience in organisations. Such a review can help to justify the need to conduct this study. To achieve this objective, the rest of the chapter is organised as follows. Section 2.2 presents an overview of digital transformation in organisations. Section 2.3

highlights the impact of digital transformation on customer experience and presents a comprehensive analysis of existing studies on digital transformation for improving customer experience. Section 2.4 discusses the critical success factors of digital transformation in organisations. Finally, Section 2.5 draws a summary of the literature review.

2.2 Digital Transformation in Organisations

Digital transformation has been described from various perspectives in the literature. Bonnet et al. (2014a), for example, treat digital transformation from the data analytics perspective, as a modification of the process of capturing, storing, understanding, and analysing complex customer data using digital technologies for enhancing customer understanding. Palmer et al. (2015) depict digital transformation from the process perspective, as the changes in the customer engagement process due to the integration of digital technologies for improving customer services and operational efficiencies. Kruschwitz et al. (2014) showcase digital transformation from the technology perspective, as the change an organisation experiences in its technological environments caused by the adoption of digital technologies. Hess et al. (2015) approach digital transformation from the business performance perspective, as the changes that the adoption of digital technologies brings into the organisation's structure, processes, functions and business models for radically improving the business performance. In the present study, digital transformation is referred to as the changes that the adoption of digital technologies induces in an organisation which significantly enhance customer analytics features, modify business functions, and improve customer processes.

Digital transformation has become very popular worldwide due to its capability to deliver nonpareil value to both organisations and their customers (Berman 2012; Matt et al. 2015;

Westerman et al. 2014a). From an organisation`s perspective, digital transformation can improve the quality of customer services (Setia et al. 2013a). It has the potential to improve the effectiveness and efficiencies of organisational processes (Nylén and Holmström 2015). Digital transformation assists organisations to build dynamic and flexible business models (Lederer et al. 2017; Sahu et al. 2018b). It has the ability to enhance data analytic capabilities (Westerman et al. 2014a). Digital transformation can facilitate innovation in the development of new products and services (Fitzgerald et al. 2014; Nylén and Holmström 2015). It can strengthen the decision making capabilities in an organisation (Kane et al. 2015; Matt et al. 2015). Overall, digital transformation can drive organisations to improve their business performance and stay competitive in the marketplace (El Sawy et al. 2013; Sahu et al. 2018a).

From a customer`s perspective, digital transformation can empower customers by promoting self-service (Westerman et al. 2014a). It can bring transparency into the customer process (Westerman et al. 2014a). Digital transformation can enhance collaboration between organisations and their customers (Ryan 2016). It can generate capabilities to reduce the cost of products and services (Lemon and Verhoef 2016). As a result, numerous organisations have been investing in digital transformation (Kane et al. 2015; Ward and Peppard 2016).

There are numerous digital technologies that organisations can adopt for digital transformation, including social media, cloud computing, Internet of things, Web 2.0, big data analytics, and mobile technologies (Fitzgerald et al. 2014). These digital technologies equip organisations with several distinct capabilities, enabling them to transform their business processes, functions, and business models (Berman 2012; Berman et al. 2012). Each digital technology possesses unique capabilities (Basole and Karla 2012; Berman 2012;

Shelton 2013). As a result, these digital technologies can act as an enabler that drives individual organisations to implement digital transformation.

The implementation of digital transformation is a complex and evolutionary process (Matt et al. 2015; Sahu et al. 2018b). It involves several phases including (a) strategy formulation, in which long term strategies and plans for digital transformation are prepared (Hess et al. 2016; Kane et al. 2015), (b) organisational analysis, in which the need for digital transformation is explicitly discussed (Berman 2012; Ward and Peppard 2016), (c) implementation, in which digital transformation strategies and plans are executed (Fitzgerald et al. 2014; Matt et al. 2015), (d) change management, in which specific changes related to people, processes and technologies due to the adoption of digital transformation are managed (Beetham and Sharpe 2013; Berman 2012; Henfridsson et al. 2014) and (e) performance evaluation, in which the outcomes from implementing digital transformation are evaluated (Ashurst and Hodges 2010; Kane et al. 2015; Kenneally et al. 2012). **Table 2.1** presents an overview of digital transformation in organisations.

Table 2.1 An overview of digital transformation activities in organisations

Stages	Activities
Strategy Formulation	<ul style="list-style-type: none"> • Shape new business infrastructure • Create value • Manage funding • Manage costing • Manage structural changes • Plan products and features
Organisational Analysis	<ul style="list-style-type: none"> • Business analysis • Functional analysis • Feature analysis • Process analysis • Digital technology analysis • Integration analysis
Implementation	<ul style="list-style-type: none"> • Manage capability • Manage communication • Manage project • Manage delivery • Manage resources • Manage risk • Manage activities
Customer Interaction Channels	<ul style="list-style-type: none"> • Manage people changes • Manage process changes • Manage technology changes • Manage knowledge changes • Manage skill changes
Customer Engagement	<ul style="list-style-type: none"> • Evaluate monetary and non-monetary benefits • Evaluate customer experience improvement

Strategy formulation focuses on the development of specific strategies and plans for the adoption of digital technologies to leverage their capabilities in an organisation (Mithas et al. 2013; Sahu et al. 2018a). It lays the foundation for implementing digital transformation by preparing the guidelines for implementation (Bharadwaj et al. 2013; Mithas et al. 2013). In such a situation, various aspects of digital transformation are planned including (a) the rationality for implementing digital transformation (Bharadwaj et al. 2013), (b) the strategy to create better products and services (Bharadwaj et al. 2013) and (c) the guidelines to implement digital transformation (Matt et al. 2015).

Organisational analysis focuses on analysing the implementation of digital transformation to achieve the strategic objectives for an organisation. Such an analysis usually evaluates digital transformation from three distinct perspectives including (a) a business perspective, in which the justification for investing in digital transformation is examined, and the scope, cost and risk of digital transformation are analysed (Kane et al. 2015; Westerman et al. 2012), (b) a capability perspective, in which digital transformation capabilities are assessed (Berman 2012) and (c) a technology perspective, in which the digital technologies for digital transformation are evaluated (Sambamurthy and Zmud 2012; Westerman et al. 2014a).

Implementation focuses on managing people, activities, costs and risks in undertaking digital transformation in an organisation. It considers administering digital transformation from two key perspectives (a) leadership, and (b) project management. Leadership is about managing opportunities, risks, and uncertainties, of implementing digital transformation in an organisation (Cummings and Worley 2014). It induces strategic direction in the team to achieve the objectives for digital transformation (Peppard 2015). Project management focuses

on planning, controlling and executing activities for implementing digital transformation in an organisation. It involves defining boundaries, estimating cost and effort, managing quality, planning resources, and controlling risks, of the implementation (Sambamurthy and Zmud 2012; Schwalbe 2015).

Change management in digital transformation is about managing changes that are caused by the implementation of digital transformation in an organisation (Fitzgerald et al. 2014; Ward and Peppard 2016). It focuses on managing three key changes caused by digital transformation. Firstly, changes in the job skills, knowledge, and motivations which impact people working in an organisation (Botha et al. 2014; Brynjolfsson and McAfee 2012; Buckley and Carter 2016; Deshler et al. 2016). Secondly, changes in the functions, tasks and activities which impact the business processes (Laguna and Marklund 2013; Patel et al. 2012). Thirdly, changes in the technological infrastructure of an organisation (Clarke et al. 2014).

Performance evaluation focuses on evaluating the monetary and non-monetary benefits of digital transformation in an organisation (Fitzgerald et al. 2014; Sambamurthy and Zmud 2012; Westerman et al. 2012). Evaluating monetary benefits is about examining the outcomes of digital transformation that reflect financial benefits such as increased profitability, and improved revenue in-flow from enhanced customer base. Evaluating non-monetary benefits is related to assessing the outcomes that cannot be directly measured in financial terms, such as reduced service time, enhanced quality of products and services, improved process efficiencies, and improved customer experience (Hess et al. 2016; Westerman et al. 2014a).

There are several key areas in an organisation which are impacted by digital transformation which assists the improvement of customer experience including (a) business models, (b) operational processes, (c) products and services, and (d) customer engagement (Andal-Ancion et al. 2003; Berman 2012; Bowersox et al. 2005; Fitzgerald et al. 2014; Ward and Peppard 2016; Westerman et al. 2014a; Westerman et al. 2014b). Digital transformation impacts the business model by re-designing the cost and revenue structures in an organisation (Hellbe and Leung 2015; Westerman and Bonnet 2015). It influences the operational processes by inducing agility, improving reliability, and enabling transparency agilities, improving reliabilities, and enabling transparencies (Becker et al. 2013; Westerman et al. 2014a). Digital transformation affects the products and services by embedding innovation and improving their features (Fitzgerald et al. 2014; Matt et al. 2015). It changes the customer engagement by improving customer interactions and upgrading engagement behaviours (Berman 2012; Westerman and Bonnet 2015; Westerman et al. 2014a). Such impacts trigger the improvement of customer experience in organisations (Bharadwaj et al. 2013; Kane et al. 2015; Ward and Peppard 2016). **Figure 2.1** presents an overview of the areas impacted by digital transformation.

<p style="text-align: center;">Business Model</p> <ul style="list-style-type: none"> • Optimising cost structure • Re-designing revenue model • Enhancing customer value proposition 	<p style="text-align: center;">Organisational Process</p> <ul style="list-style-type: none"> • Digitising processes • Transforming customer services • Improving performance
<p style="text-align: center;">Products and Services</p> <ul style="list-style-type: none"> • Improving features of products and services • Innovating new product and service 	<p style="text-align: center;">Customer Engagement</p> <ul style="list-style-type: none"> • Integrating digital channels • Personalising sales and marketing • Improving customer servicing • Inducing self –servicing

Figure 2.1 An overview of the affected areas of digital transformation

The business model focuses on optimising the cost of creating products and services, and on designing the revenue model in an organisation (Amit and Zott 2012). Digital transformation enables an organisation to transform three core components of the business model including (a) the cost structure, (b) the revenue model, and (c) the customer value proposition (Hellbe and Leung 2015; Westerman and Bonnet 2015). Digital transformation impacts the cost structure by optimising the activities and processes and reducing the cost of creating products and services (Agarwal et al. 2010b; Westerman and Bonnet 2015). It changes the revenue model by exploiting new business opportunities and introducing revenue avenues (Matt et al. 2015; Westerman and Bonnet 2015). Digital transformation transforms the customer value

proposition through modified products and services, better economic value, and enhanced customer experience (Amit and Zott 2012). The transformation of the core components of a business model triggers the improvement of customer experience (Andal-Ancion et al. 2012; Berman 2012).

The organisational process focuses on efficiently utilising organisational resources, improving reliability, maintaining quality, inducing agility, and increasing productivity (Davenport 2013; Patel et al. 2012). Digital transformation induces automation in the process, which eliminates process inaccuracies, by transforming manual activities to automated activities, and assisting automated decision making (Fitzgerald et al. 2014; Westerman et al. 2014a; Westerman et al. 2014b). It triggers the virtualisation of customer support activities in an organisation (Brown et al. 2013; Colbert et al. 2016; Westerman et al. 2014b). Digital transformation improves the performance of the processes by reducing the cost of products and services, inducing process transparency, and providing real-time customer support (Delmond et al. 2016; Westerman et al. 2014b). The changes to the operational processes caused due to the implementation of digital transformation assist organisations to improve the customer experience (Andal-Ancion et al. 2003; Berman 2012; Bowersox et al. 2005; Fitzgerald et al. 2014; Ward and Peppard 2016; Westerman et al. 2014a; Westerman et al. 2014b).

Products and services deals with improving the offerings for customers by (a) enhancing the features of products and services and (b) innovating new products and services (Fitzgerald et al. 2014; Matt et al. 2015). Digital transformation provides organisations with various functional capabilities to enhance the features of products and services through integrating

real-time customer communications, integrating social media for customer services, inducing customer analytics to provide predictive customer services, and providing highly customisable products (Fitzgerald et al. 2014; Ganguly 2015; Kane et al. 2015; Sia et al. 2016). It enables organisations to innovate and develop new products and services by focusing on maintaining a high degree of efficiency in its product development process, reducing time to market, and developing highly flexible products (Bharadwaj et al. 2013; Fitzgerald et al. 2014; Matt et al. 2015; Nylén and Holmström 2015). Such improvements in the products and services enable the improvement of customer experience in an organisation.

Customer engagement focuses on enhancing the interactions between organisations and their customers through better processes, activities, methods and channels (Berman 2012; Westerman and Bonnet 2015; Westerman et al. 2014a). Digital transformation introduces new capabilities in an organisation to improve customer engagement through (a) integrating digital channels, (b) personalising sales and marketing and (c) improving customer service (Basole and Karla 2012; Chi et al. 2016; Piccinini et al. 2015; Ryan 2016). It assists the integration of various digital channels such as mobile, web-based and social media in organisations for effective customer collaboration (Fitzgerald et al. 2014). Digital transformation utilises the analytics capabilities for better understanding customer needs, which triggers personalised sales and marketing (Kane et al. 2015). It enables simple and efficient process towards improving customer engagement (Ward and Peppard 2016). The improvement in the customer engagement using digital transformation thus leads to the improvement of customer experience in organisations (Andal-Ancion et al. 2003; Berman 2012; Bowersox et al. 2005; Fitzgerald et al. 2014; Ward and Peppard 2016; Westerman et al. 2014a; Westerman et al. 2014b).

2.3 Improving Customer Experience through Digital Transformation

Customer experience is defined in various ways in the literature (Rose et al. 2012). Klaus and Maklan (2013), for example, consider customer experience as the customer's cognitive and affective assessment of all the direct and indirect encounters with an organisation relating to their purchasing behaviours. Gounaris (2015) presents customer experience as subjective responses of the customer to conscious and unconscious events. Meyer and Schwager (2007) describe customer experience as a subjective and internal response that a customer registers when any direct or indirect interactions with an organisation occur. These definitions highlight various characteristics of customer experience, including multi-dimensional, measurable, flexible, predictable, and operational aspects (Lemon and Verhoef 2016; Meyer and Schwager 2007). This study refers customer experience as the changes a customer experiences in its physical and emotional states while interacting with products and services in an organisation.

Organisations can face several challenges due to their internal and external business conditions for implementing digital transformation (Ashurst and Hodges 2010; Brynjolfsson and Hitt 2000; Elliot 2011; Fitzgerald et al. 2014; Henriette et al. 2016; Rouse 2005; Westerman et al. 2014a). The business challenges, for example, are triggered due to the changing market behaviours such as changes in demand and supply, customer behaviours and technologies, and competition (Fischer and Heutel 2013). The financial challenges are caused by funding issues, cost fluctuations, unplanned expenses, and in-accurate cost forecasting (Berman 2012; Fitzgerald et al. 2014; Nylén and Holmström 2015). The management challenges occur due to unclear vision, lack of planning and motivation, improper team

management, and ineffective direction (Fitzgerald et al. 2014; Kane et al. 2015). The operational challenges are due to the need to maintain a high degree of operationalization by organisations to transform their customer processes (Berman 2012; Berman et al. 2012; Ganguly 2015; Hess et al. 2016). The technological challenges are due to management of capacities and capabilities of the technological infrastructure in an organisation, such as managing security, preventing data loss, maintaining reliability, aiding better data capturing and processing, and supporting customer processes (Gens 2013; Hess et al. 2016; Hoffman 2012; Kane et al. 2015). These challenges have potential to hinder the success of digital transformation towards improving customer experience in an organisation.

Numerous activities performed by organisations in the process of implementing digital transformation to improve customer experience are summarised in **Table 2.2**. The key activities comprise (a) formulating and implementing customer experience improvement strategies (Mithas et al. 2013; Sahu et al. 2018a), (b) analysing complex customer data (Kiron et al. 2012), (c) enhancing the customer value proposition (Berman 2012), (d) developing new customer interaction channels (Straker et al. 2015) and (e) redesigning customer engagement features and processes (Lemon and Verhoef 2016).

Table 2.2 A summary of activities of digital transformation for improving customer experience

Activities	Attributes	Functions	Technologies	Stakeholders
Customer Improvement	<ul style="list-style-type: none"> • Scope • Scale • Speed 	<ul style="list-style-type: none"> • Plan and implement • Access internal capabilities • Decision making 		<ul style="list-style-type: none"> • Program managers • Strategy executives • Product managers
Customer Analytics	<ul style="list-style-type: none"> • Structured and unstructured data • Data quality • Volume and Velocity 	<ul style="list-style-type: none"> • Capture data • Model data • Data analytics • Analyse trends 	<ul style="list-style-type: none"> • Hadoop • Hive • Sqoop • Polybase 	<ul style="list-style-type: none"> • Data analysts • Data scientists • Analyst managers
Customer Value Proposition	<ul style="list-style-type: none"> • Functional value • Economic value • Quality • Service 	<ul style="list-style-type: none"> • Value capture • Value creation • Value proposition 		<ul style="list-style-type: none"> • Product managers • Commercial managers • Pricing managers
Customer Interaction Channels	<ul style="list-style-type: none"> • Usability • Content • Ease of use • Availability • Experience 	<ul style="list-style-type: none"> • Unique experience • Simplified customer journey • Enable customer interaction • Enhance customer experience 	<ul style="list-style-type: none"> • Social media • Mobile technologies • Web technologies • Live chat and email support 	<ul style="list-style-type: none"> • UX experts • Technology architects • Customer experience designers
Customer Engagement	<ul style="list-style-type: none"> • Direct engagement • Indirect engagement • Location • Time • Real-time information 	<ul style="list-style-type: none"> • Personalise direct marketing • Segment specific marketing • On-demand sales • Self-servicing • Proactive service 	<ul style="list-style-type: none"> • Digital marketing • Instant messaging • Online support • On-platform support 	<ul style="list-style-type: none"> • Support analysts • Customer service agents • Marketing analysts • Service specialists

Customer experience improvement strategies are about planning a differential customer value proposition to enable customers with an unique experience in their journey with an organisation (Ward and Peppard 2016). It includes conceptualising, designing, and implementing specific approaches to improve customer experience by leveraging digital transformation capabilities. The customer experience improvement strategies consider two key attributes including (a) defining the scope of the strategies, which focuses on developing the products and services for the target customers (Bharadwaj et al. 2013) and (b) designing the scale of strategies, which focuses on innovating and delivering unique value proposition to customers (Barrett et al. 2015). Such strategies assist organisations to focus more on customers, which enhances customer experience (Sahu et al. 2018b).

Customer data analysis focuses on the computational analysis of customer data for identifying customers trends and understanding customers better (LaValle et al. 2013; Loebbecke and Picot 2015). It consists of the following key activities including (a) capturing customers' data, (b) modelling the data, (c) analysing the data and (d) generating key customer trends (LaValle et al. 2013; McAfee et al. 2012; Van Dijck 2014). Customer data analysis equips an organisation with in-depth understanding of customers (Berman 2012; Kiron et al. 2012). It enables organisations to make better customer-centric decisions and improve customer engagement, leading to the improvement of customer experience (McAfee et al. 2012).

Customer value propositions are about delivering enhanced products and services for customers, which plays a key role in their decision making processes (Anderson et al. 2006). Such enhanced products and services features are achieved by (a) optimising the economic

value (Bocken et al. 2014), (b) improving the emotional value (Kim et al. 2011), (c) creating innovative products and services (Berman 2012), and (d) delivering better service features (Setia et al. 2013a). The impact of better customer value propositions drives customer experience improvement in organisations.

Customer interaction channels are instruments through which customers can connect with an organisation (Lemon and Verhoef 2016). There are usually two types of interactions in which a customer engages with an organisation. Firstly, direct interaction, in which customers engage with an organisation via the products and services they consume. Secondly, indirect interaction in which an organisation connects with its customers through brands and promotions (Klaus and Maklan 2013; Lemon and Verhoef 2016). Digital transformation introduces various capabilities in organisations which assist them to manage both the direct and indirect interactions (Berman 2012; Sahu et al. 2018a). Such capabilities enable organisations to provide a unique and coherent experience to their customers which enhances customer experience (Hansen and Sia 2015; Straker et al. 2015).

Customer engagement considers all the instances of the customer journey in which an organisation interacts with its customers through direct or indirect methods (Chi et al. 2016). Digital transformation enables organisations to transform three core functions of customer engagement including (a) the sales function, by personalising the sales process, expanding the geographical boundaries, and providing on-demand sales (Fitzgerald et al. 2014; Westerman and Bonnet 2015), (b) the marketing function, by connecting with customers in a more targeted manner (Ryan 2016) and (c) the service function, by empowering self-service, inducing flexible services, reducing service timings, and providing real-time customer

communication (Barrett et al. 2015; Berman 2012; Westerman et al. 2014a). The implication of such focused customer engagement is that it delivers highly positive customer experience. Several studies have been conducted to investigate the implementation of digital transformation for improving customer experience in organisations (Kane et al. 2015). These studies primarily focus on four distinct perspectives, as highlighted in **Figure 2.2**.

<p style="text-align: center;">Planning and Execution</p> <ul style="list-style-type: none"> • Evaluating market situation • Understanding customer need • Analysing existing strengths • Addressing gaps in capabilities • Devising strategies for execution • Implementing strategies • Performing activities 	<p style="text-align: center;">Digital Technology Integration</p> <ul style="list-style-type: none"> • Analysing the capabilities of technologies • Identifying the impact of digital technologies on customers • Examining technology integration impact in existing technologies, processes, and functions • Evaluating its impact on creating digital products and services
<p style="text-align: center;">Customer Engagement</p> <ul style="list-style-type: none"> • Enhancing customer interaction • Improving customer related processes • Evaluating customer communication using digital transformation • Analysing customer engagement impact on customer experience • Examining personalisation of services and marketing 	<p style="text-align: center;">Customer Value</p> <ul style="list-style-type: none"> • Providing better economic value • Enhancing customer service quality and response time • Improving productivity • Delivering better emotional value • Capturing better satisfaction, feeling, and perception

Figure 2.2 The various perspectives of implementing digital transformation

Strategy formulation develops the guidelines for implementing digital transformation and leveraging its capabilities to improve the organisation's performance. Such an approach examines market conditions, focuses on providing customer-centric solutions, abridges capability gaps to achieve desired outcomes, and designs specific strategies for effective implementation of digital transformation in organisations (Matt et al. 2015, Sahu et al. 2018a).

Palmer et al. (2015), for example, evaluate the strategies to implement digital transformation towards improving customer experience in organisations. Their study examines the perspectives of 4,800 executives and managers to understand the key elements of digital transformation which lay the foundation to improve customer experience. The study presents the key drivers of digital transformation. It highlights the strategies to implement digital transformation for improving customer experience.

Hess et al. (2015) examine the strategic procedures for implementing digital transformation in organisations towards improving customer experience. Their study adopts a framework consisting of four dimensions including the use of technologies, the financial aspects, the structural changes, and the changes in the value creation, for better understanding the digital transformation strategies. It explores multiple case studies to analyse various strategies, focusing on the usability of the digital technologies, development of the operational processes, and execution of the procedures, for implementing digital transformation towards improving customer experience in organisations.

Tafti et al. (2013) investigate strategies to implement digital transformation for improving customer experience in organisations. Three dimensions of a digital transformation strategy, investment, activities and posture, are considered. The study examines the data from 400 US organisations to determine the strategies and their characteristics for implementing digital transformation in organisations. The study determines the key factors of digital transformation strategies and presents various factors that influence the strategies for implementing digital transformation.

Kraemmergaard et al. (2011) present the strategies for implementing digital transformation towards improving customer experience. The study adopts a participatory process model for developing a framework. It focuses on capturing the perspectives of business leaders towards implementing digital transformation, based on various parameters such as leadership, challenges, activities and collaborations. The study conducts multiple interviews to present a framework consisting of three dimensions including the value of digital technology, the strategic orientation, and the leadership roles.

Cartwright et al. (2003) highlight the strategies to respond to the key drivers of digital transformation for improving customer experience in organisations. The study develops a framework which focuses on the usability, deliverability, intensity, cost, response, effect, risks, and benefits, of implementing digital transformation for improving the customer experience. The study analyses 20 case studies from various organisations implementing digital transformation. Multiple rounds of interviews are conducted with executives to identify and evaluate the strategies for successfully implementing digital transformation in organisations. The study presents a systematic framework that identifies various drivers, their

relevant importance, and their subsequent strategies to execute digital transformation for improving customer experience.

The above studies provide organisations with guidelines to implement digital transformation towards improving customer experience. These studies assist organisations to analyse the strengths and weaknesses of the implementation and help to identify guidelines to improve the customer experience by presenting an implementation framework (Matt et al. 2015). Such studies often lack in explaining the impact of internal organisational factors for digital transformation on customer experience.

Process development focuses on exploiting the digital transformation capabilities for designing the organisational processes towards enhancing the customer experience. Such an approach determines to improve process efficiencies and enhance customer engagement in organisations, which generate positive customer experience (Greenberg 2010).

Klaus and Nguyen (2013), for example, evaluate the organisational processes enabled by digital transformation for multi-channel customer interactions in retail banking services. The study adopts a framework consisting of five dimensions for analysing the effectiveness of the processes including key objectives, business processes, benefits, integration, and outlook. Data are captured from multiple in-depth interviews with senior executives from various banking organisations. The data are analysed using an emerging consensus technique. The results highlight various factors that define the effectiveness of the customer interaction process including social media integration, sales, communication and usability.

Thirumalai and Sinha (2011) investigate the usability of digital transformation for designing customer processes towards improving customer experience in the online retail sector. The study conceptualises the customer decision process and transaction process as two key processes in the online retailing sector that have a significant impact on customer experience. It adopts the technology usability theory and technology acceptance model as theoretical bases for the investigation. Data collected from 422 retailers are analysed using multivariate analysis technique. The analysis highlights several factors of digital transformation that are critical for designing the customer processes for improving customer experience.

Greenberg (2010) investigates the role of analytics generated through digital transformation in the customer process towards improving customer experience in organisations. The study focuses on analysing analytics in improving buyer-seller processes, social media integration, and customer relationship management processes. It designs a framework consisting of five dimensions for the investigation including customer data, sentiment analysis, social media monitoring, customer profiles, and the customer journey. The study analyses the data collected from experts using multiple case studies. The results present key analytics factors related to transparency, authenticity, and interaction of customer processes, which play a significant role in improving the customer experience in organisations.

Venkatesh et al. (2013b) analyse the effectiveness of the customer service processes of digital transformation for improving customer experience in organisations. The study develops a framework consisting of five customer service factors including customer service performance, customer orientation capability, customer response capability, information quality, and process sophistication. The data, which are collected from 170 branches of a

large Indian bank through survey questionnaire, are analysed using structure equation modelling to evaluate the impact of the customer service processes on customer experience. The results present the strong influence of the customer service performance and information quality on the customer service processes for improving the customer experience.

Gregory et al. (2015) examine the impact of customer processes in digital transformation on customer experience. The study adopts a five-stage iterative, systematic literature review analysis process which is backed by the grounded theory. It uses thematic analysis to determine the key factors of the customer processes of digital transformation which impact customer experience. The results highlight various factors related to the customer processes which can affect the relationship between an organisation and its customers, impacting the customer experience.

The above studies enable an organisation with a deeper understanding of the usability of digital transformation to re-design its customer processes for improving customer experience. Such studies equip organisations with the visibility to enhance customer interactions and develop more personalised services. They assist organisations to examine the impact of digital transformation on process efficiencies and productivity (Greenberg 2010). Such studies, however, lack in identifying the factors of digital transformation which are critical for improving customer experience in organisations.

Digital technology integration evaluates the adoption of digital technologies in an organisation. Such an approach focuses on the usability and acceptance of digital

technologies in an organisation's existing infrastructure. It aims to evaluate the impact of capabilities leveraged from digital transformation on customer experience.

Andzulis et al. (2014), for example, examine the impact of social media on customer experience. Their study evaluates 308 responses collected from an online survey questionnaire using structural equation modelling to evaluate the effectiveness of integrating social media technologies in organisations for improving the customer experience. The results highlight several factors that affect the integration of social media technologies towards improving customer experience. The study shows a positive impact of social media on the customer relationship, customer retention and customer loyalty.

Huang et al. (2011) investigate the impact of integrating web technologies into the financial service processes in organisations on improving customer experience. The study adopts a framework consisting of various dimensions including technological readiness, service system interfaces, flow experience, and behaviour intention, to evaluate their impact. Data are collected from 258 online users using online survey. The study analyses the collected data using confirmatory factor analysis for evaluating the relationship between customers' experience and their belief in technology, service system interfaces, customer-technology interaction, and customer behaviours. The results showcase various factors of digital technology integration that can impact customer experience.

Piotrowicz and Cuthbertson (2014) analyse the impact of digital technology integration on customer experience in retail organisations. The study focuses on analysing the impact of

digital technologies on business models and business processes towards improving customer experience. It adopts a framework consisting of seven dimensions including channel integration, impact of digital technologies, role of digital technologies, customer requirements, personalisation, privacy, and supply chain redesign. The data for the study are collected using six focus groups with experts. The analysis of the qualitative data presents key themes for integrating multi-channel digital technologies into retailing for improving the customer experience in organisations.

Nylén and Holmström (2015) evaluate the integration of digital technologies for innovating new products and services towards improving customer experience. The study adopts a framework consisting of three dimensions for the exploratory study including digital environment, the organisation`s products, and organisational properties. Multiple case studies and interviews are used to collect data from experts to examine the impact of digital technology integration for creating new products and services on customer experience. The study presents three factors, namely, usability, aesthetics, and engagement with the new products and services, which have a significant impact on customer experience due to the integration of digital technologies.

Blázquez (2014) examines the integration of digital technologies in multi-channel retail organisations for enhancing customer experience. The study considers an analysis of the effect of various digital channels enabled by the integration of digital technologies on customer experience. It adopts a hedonic and utilitarian framework to analyse the impact. The data for the study are collected from 439 customers in the United Kingdom through an online survey questionnaire. An exploratory factor analysis is performed to evaluate the importance

of digital technology integration for improving customer experience. The results highlight various factors related to the integration of mobile, online and social media technologies for improving customer experience in organisations. The study presents the advantages and the need to re-define the customer experience using digital technologies in organisations.

The above studies assist organisations through analysing the impact of the integration of digital technologies on customer experience. Such an analysis focuses on the impact of digital technology on customer processes and functions, and its effect on customer experience (Ding et al. 2011). Such studies present organisations with detailed analysis of various digital technologies, their attributes, features, and impact on customer experience (Blázquez 2014). These studies, however, lack in considering two very critical aspects: (a) analysing various digital capabilities for customer experience improvement, and (b) relationship between digital capabilities and customer experience.

Value evaluation focuses on assessing the benefits that customers receive from the implementation of digital transformation in an organisation, towards improving customer experience. Such an approach analyses value offerings received by the customers, investigates the components of value received by customers, and the re-designing of customer value offerings (Berman 2012).

Berman (2012), for example, evaluates the factors that help organisations to reshape the customer value in digital transformation through greater customer collaboration, for enhancing customer experience. The study creates a framework consisting of three

dimensions, creation, leverage, and integration for the investigation. Data are collected by conducting interviews and surveys to investigate the factors. The analysis of the data reveals various factors that help organisations to reshape customer value. The study presents an updated framework for enhancing customer value through digital transformation.

Hughes et al. (2013) examine the value created through digital transformation by enabling customer self-service towards improving the customer experience in organisations. The study adopts a framework focusing on two resources of customer self-service, the customer resources and the organisational resources, for examining the effect of the value created on customer perception. It collects data by conducting 24 in-depth interviews with industry experts. The analysis of data, which is performed using thematic analysis technique, reveals several key aspects of customer self-service that enhance customer value and trigger improvement in customer experience.

Nylén and Holmström (2015) analyse the value created by digital transformation through innovating digital products and services, which triggers improvement of customer experience. The study focuses on developing a framework for organisations which supports innovation of digital products and services towards creating value for customers. The base conceptual framework developed for the study consists of five dimensions including customer expectation, value proposition, digital features, skills, and improvisation. The study analyses multiple case studies using in-depth interviews with experts to evaluate the value resulting from innovative products and services. The results of the study present various factors and implementation processes for creating value for the customers through innovative products and services in digital transformation, for improving customer experience.

Gao et al. (2010a) investigate the value delivered by digital transformation for improving the customer experience in the healthcare industry. The study focuses on digital technology features, its adoption, design, implementation, value creation, and impact on customers. It develops a theory which considers several aspects of the adoption of digital transformation which can create value for customers, comprising customer perspectives, quality, transparency, competition, barriers, and adoption. The study surveys the value delivered by digital transformation for improving customer experience, through multiple case studies. The results highlight various parameters and attributes of digital transformation that impact the customer value in digital transformation for improving customer experience.

T'Joens et al. (2014) evaluate the value delivered by data analytics in digital transformation for improving customer experience. The study adopts a framework consisting of three dimensions, customer effort score, process improvement, and net promoter score, to analyse the customer value delivered. The study analyses various case studies to investigate the factors related to the customer pain points, customer trust, and creation of irrational loyalty, which are responsible for impacting the customer value. The results of the study illustrate various factors that influence the customer value and enhance the customer experience.

The above studies consider various processes and activities within organisations for creating and delivering better value for customers which thus have a potential to enhance customer experience (Agarwal et al. 2010a; Berman 2012). Such studies assist organisations to identify the factors that can create value for customers, evaluate values that are critical for customers, and examine the relationship between customer value and customer experience (Nylén and Holmström 2015; Spiess et al. 2014). Such studies, although, lack in analysing the internal

organisational factors which can impact the effectiveness of digital transformation for improving customer experience.

The existing studies adopt various methodologies to investigate the impact of digital transformation on customer experience from different perspectives. These methodologies assist the studies with a deeper understanding of the key factors of digital transformation, relationships between digital transformation and customer experience, and the magnitude of the impact of digital transformation on customer experience. The methodologies can be classified under three broad categories including a) qualitative methodology, b) quantitative methodology, and c) mixed-methods methodology. It shown respective significance towards achieving the objectives of the specific research study as highlighted in **Table 2.3**.

Table 2.3 A summary of existing studies in digital transformation

Methodology	Existing Studies	Research Objectives
Qualitative	Kraemmergaard et al. (2011), Cartwright et al. (2003), Klaus and Nguyen (2013), Greenberg (2010), Gregory et al. (2015), Piotrowicz and Cuthbertson (2014), Nylén and Holmström (2015), Gao et al. (2010a), Hughes et al. (2013)	<ul style="list-style-type: none"> • Process formulation for digital transformation • Identification of the drivers of digital transformation • Impact of digital transformation • Relationship of digital transformation and customer experience • Technology integration • Customer value analysis of digital transformation
Quantitative	Palmer et al. (2015), Tafti et al. (2013), Venkatesh et al. (2013b), Andzulis et al. (2014), Huang et al. (2011), Blázquez (2014)	<ul style="list-style-type: none"> • Strategy formulation for implementing digital transformation • Evaluation of the effectiveness of digital transformation • Analyse the impact of digital technology on customer experience
Mixed-methods	Hess et al. (2015), Thirumalai and Sinha (2011), Nylén and Holmström (2015), Berman (2012), T'Joens et al. (2014)	<ul style="list-style-type: none"> • Strategies and procedures to execute digital transformation • Impact analysis of digital transformation on customers • Performance analysis of digital transformation • Factor identification of digital transformation that impact customer experience • Impact of digital transformation on customer value

Overall, the existing studies to investigate the implementation of digital transformation highlight the significance of strategy formulation, technology integration, process formulation, and customer value enhancement towards achieving better customer experience (Agarwal et al. 2010a; Berman 2012). Strategy formulation studies, for example, focus on guiding organisations to develop customer focused solutions using digital transformation for improving customer experience. Process development studies advice organisations to design new customer centric processes for making customer journey better which can enhance customer experience. Digital technology integration studies help organisations to enhance their ability to leverage new capabilities towards better customer experience. Customer value evaluation studies assist organisations to analyse and measure the impact of digital transformation on customer experience towards improving the execution of digital transformation.

The existing studies aid organisations in various capacities to manage the execution of digital transformation. These existing studies, however, lack a comprehensive investigation of the critical success factors of digital transformation for improving customer experience in organisations. There is also a lack of a comprehensive framework for adequately implementing digital transformation in organisations. This triggers the need for identifying critical success factors and developing a framework of digital transformation for improving customer experience in organisations. The next section presents an analysis of existing studies on the critical success factors of digital transformation.

2.4 Critical Success Factors of Digital Transformation

Critical success factors are those characteristics, conditions or variables that, when properly sustained, maintained, or managed, can have a significant impact on the success of an organisation (Howell 2009; Leidecker and Bruno 1984; Parker Gates 2010). They include events, circumstances, conditions, and activities that, due to their significance, demand special attention towards an organisation's success (1984). Such factors, if addressed adequately, can significantly improve the performance of an organisation's initiatives (1987).

The awareness of the critical success factors can bring tremendous success in the outcome of any initiative for an organisation (Howell 2009). Such knowledge determines that the organisation should focus on the factors with continuous attention to reduce the risk of failure (Howell 2009). The critical success factors allow the use of specific measures to monitor the performance of these factors, impacting the overall performance in an organisation. This ensures that an organisation can improve its operational value, gain comprehensiveness, and achieve flexibility while undergoing any initiative (Dickinson et al. 1984; Howell 2009). As a result, the investigation of the critical success factors becomes crucial for an organisation's success.

The critical success factors can be both internal or external to an organisation (Auruskeviciene et al. 2006; Howell 2009). They can be distinguished at five levels in an organisation including (a) the environmental level, in which the opportunities and threats that are induced by economic environment are identified (Howell 2009; Leidecker and Bruno 1984; Parker Gates 2010), (b) the industry level, in which the individual industry segment

characteristics are investigated (Howell 2009), (c) the strategic level, in which the competitive strategies and industry positioning of an organisation are determined (Howell 2009), (d) the temporal level, in which the internal organisation forces that change the organisation`s behaviour are considered (Howell 2009; Parker Gates 2010) and (e) the individual level, in which the characteristics related to the performance of individuals of a specific function within an organisation are incorporated (Parker Gates 2010).

The process of investigating the critical success factors in organisations involves five phases including (a) the scoping phase, where the boundaries of the investigation are defined (Howell 2009), (b) the collecting data phase, where the information around factors is gathered (Belassi and Tukel 1996), (c) the evaluating and organising phase, where the information captured is analysed using various methods (Howell 2009; Somers and Nelson 2001), (d) the identifying and selecting critical success factors phase, where all the identified factors are listed (Leidecker and Bruno 1984) and (e) the analysing and validating critical success factors phase, where the most critical success factors are validated and a list of critical success factors are generated (Howell 2009; Leidecker and Bruno 1984).

Several studies have been conducted towards the investigation of the critical success factors of digital transformation in organisations. These studies, primarily, have been conducted from three distinct approaches including (a) examining the adoption of digital transformation in organisations (Fitzgerald et al. 2014), (b) evaluating the impact of digital transformation on an organisation`s performance (Zhu et al. 2006) and (c) analysing the impact of digital transformation on the customer relationship, experience, satisfaction and motivation (Andal-

Ancion et al. 2012; Berman 2012). **Figure 2.3** highlights the various approaches for identifying the critical success factors of digital transformation in organisations.

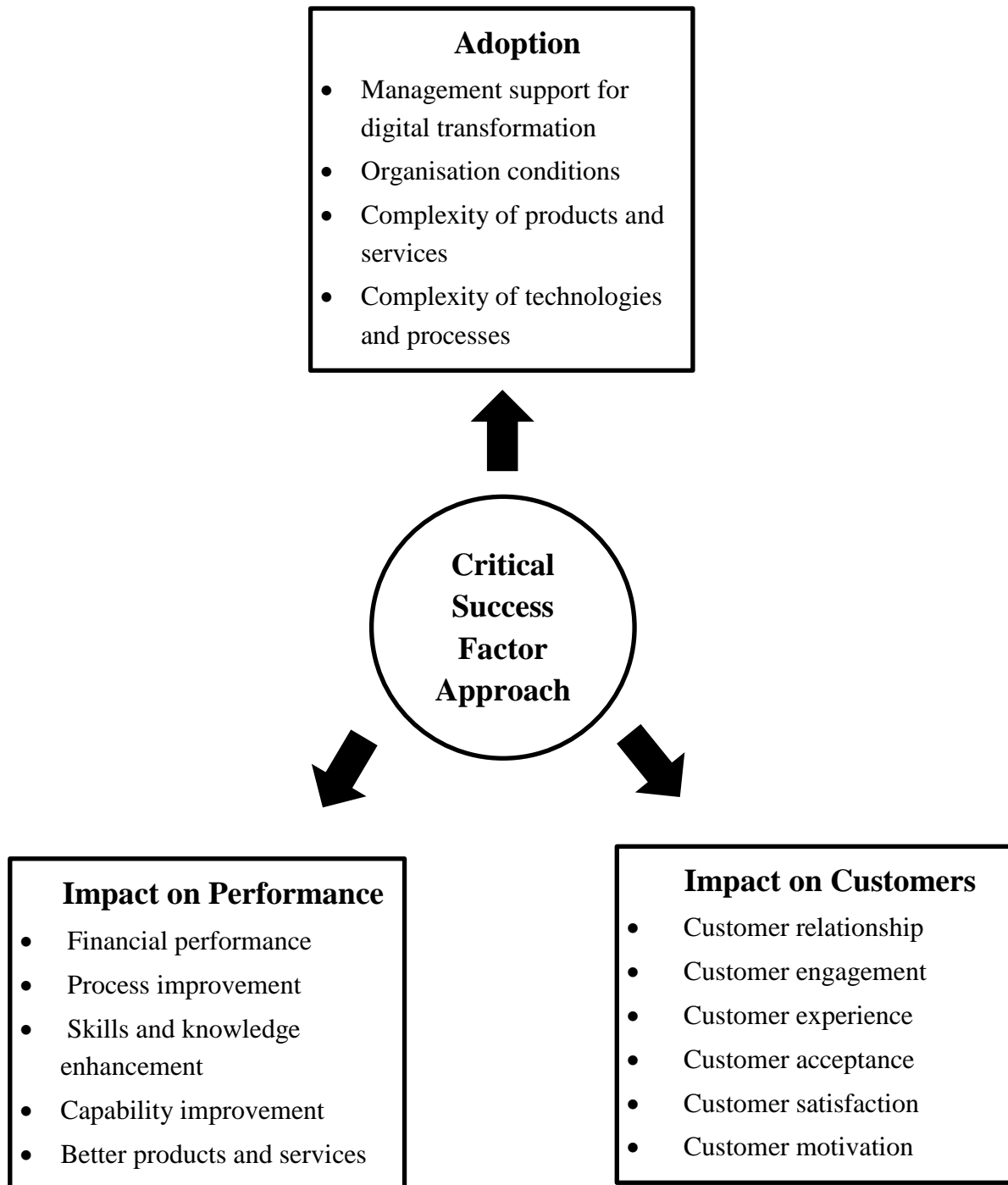


Figure 2.3 The approaches of critical success factors for digital transformation

The adoption of digital transformation considers various events, situations and conditions in an organisation that impact the successful integration of digital transformation (Trkman 2010). Such an approach enables an organisation to evaluate the adoption of digital transformation from various internal organisational perspectives.

Chen et al. (2011), for example, investigate the critical success factors of the adoption of digital transformation in high tech organisations in Taiwan. The study adopts technology, organisation, and environment framework to examine eight factors which can affect the adoption. The data, which are collected from 111 organisations in high tech industries in Taiwan through survey questionnaire, are analysed using logistics regression technique. The study reveals that relative advantage, firm size, top management support, competitive pressure and trading partner pressure, are the most significant factors that can impact the adoption of digital transformation in organisations.

Kim et al. (2012) investigate the critical success factors of the adoption of digital transformation in organisations. The study builds a research framework consisting of three dimensions for the investigation including relational, technical, and managerial dimensions. Data collected by survey questionnaire from 314 executives are analysed using a structural equation model. The study highlights several critical success factors which influence the execution of digital transformation, comprising competition, government regulation, operating cost, business agility, and IT capability.

Trkman (2010) investigates the critical success factors of the adoption of digital transformation in organisations. The study adopts three theories for the investigation including (a) contingency theory, (b) dynamic capability theory, and (c) task-technology fit theory. A case study is used on a mid-sized bank in Slovenia for collecting and analysing data from experts. The study highlights various critical success factors related to the strategic alignment, performance, investment, changes, processes, and people, which can influence the successful adoption of digital transformation in organisations.

Helo et al. (2010) inspect the critical success factors of the adoption of digital transformation for online customer services in organisations. The study adopts a framework consisting of six factors including familiarity with knowledge management, coordination among employees and departments, incentives for knowledge effort, authority to perform knowledge activities, system for handling knowledge, and cultural support. Data are collected from 41 subject-matter experts. A weighted average method is used to analyse the collected data. The analysis showcases incentives for knowledge effort and the system for handling knowledge as the two most critical success factors that can influence the adoption of digital transformation in organisations.

Kaur and Aggrawal (2013) present the critical success factors of the adoption of digital transformation in organisations. The study adopts a grounded theory approach to capture qualitative data from experts in organisations using interviews. The analysis of the data presents six factors which can have the most significant affect in the successful adoption of digital transformation in organisations including stabilisation, human resource factors, planning factors, implementation factors, continuous updating, and evaluation factors.

Hussin et al. (2013) investigate the critical success factors of the adoption of digital transformation in organisations. The study adopts technology, organisation, and environment framework for data collection from experts in organisations using interviews and surveys. The analysis of the qualitative and the quantitative data presents various critical success factors that encourage organisations to adopt cloud computing for digital transformation. The factors revealed are management of information system resources, providing vision and commitment to create a positive environment for innovation, understanding the capabilities and limitations of IT, establishing reasonable goals for using cloud computing under top management support, increasing the ability of small firms to compete with other organisations both locally and internationally, reducing information system cost, reducing software maintenance cost, data availability, and reducing infrastructure management.

The above studies present the critical success factors of the adoption of digital transformation for improving customer experience in organisations. These studies evaluate the adoption of digital transformation by analysing the complexities of the adoption, understanding the suitability of digital transformation in an organisation, and examining the management support required for the adoption.

Impact on performance investigates the changes and their impact induced by digital transformation in an organisation. The changes usually enhance the performance of the functions, activities, processes, and features of the products and services (Zhu et al. 2006). Such an approach equips an organisation with several capabilities which assist organisations to improve their organisational performance.

Astri (2015), for example, evaluates the critical success factors of digital transformation for improving the performance of customer processes in organisations. The study follows a systematic literature review approach to investigate the critical success factors. It analyses thirty papers to reveal eight critical success factors that can impact the performance of digital transformation in organisations including cost reduction, flexible, redundancy and reliability, scalability, collaboration, efficiency, virtuality, and availability.

Mathrani and Viehland (2010) investigate the critical success factors of digital transformation for improving business performance. The study adopts a framework based on five organisational dimensions including strategic, organisational and cultural, skills and knowledge, data, and technology. Data collected from experts using interviews are analysed using thematic analysis technique. The analysis presents various critical success factors related to organisation management, project management, change management, people management, knowledge management, and technology, which can impact the performance of digital transformation in organisations.

Ravesteyn and Batenburg (2010) survey the critical success factors of digital transformation for improving the performance of the organisational processes. The study develops a framework which consists of three dimensions for the investigation including management and organisation, architecture, and technology integration. Data are collected for the study using survey questionnaire from 39 Dutch organisations. The study reveals that communication, involvement of stakeholders, and governance, are the most critical success factors for improving the performance of business processes in organisations.

Yeoh and Koronios (2010) examine the critical success factors of digital transformation for improving the performance of the analytics features and processes in organisations. The study develops a framework consisting of three dimensions, organisation, process, and technology, for investigating the critical success factors. The study approaches the investigation in two stages. The first stage refines the critical success factors using the Delphi technique, which includes three rounds of interviews with 15 participants. The second stage verifies the list of critical success factors using five case studies. The study highlights several factors that are critical towards the improvement of the analytics processes.

Olszak and Ziemia (2012) identify the critical success factors of digital transformation for improving the performance of the analytics processes in small and medium organisations. The study adopts a framework consisting of three dimensions for the investigation including organisation, process, and technology. The study adopts an exploratory approach which includes in-depth interviews with 20 subject-matter experts to determine the critical success factors. The study reveals numerous critical success factors under each dimension of the framework that can influence the performance of the data analytics processes in organisations.

The above studies present organisations with an understanding of various critical success factors related to the conditions and characteristics of digital transformation for improving business performance (Ravesteyn and Batenburg 2010). Such studies evaluate the impact of digital transformation on the outcome of the functions, processes and features in the organisations (Astri 2015).

Impact on customers evaluates the impact of implementing digital transformation on the customers from various perspectives (Andal-Ancion et al. 2012; Berman 2012). It evaluates the tangible and the intangible interactions between the organisations and their customers. Such an approach enables an organisation to have a deeper understanding of the impact of digital transformation on the customer engagement, relationship and experience.

Zhou (2011), for example, investigates the critical success factors of digital transformation for improving customer experience in organisations in China. The study adopts the technology acceptance model and trust theory to examine seven factors to identify the critical success factors. The data collected using questionnaire survey are analysed in two steps. The first step measures the reliability and validity of the model using confirmatory factor analysis. The second step examines the structural model to test the hypothesis and model fitness using structural equation modelling. The study presents that system quality is the main factor affecting the perceived ease of use, information quality is the main factor affecting the perceived usefulness, and service equality has no direct effect on the perceived usefulness but has significant effects on the trust and the perceived ease of use.

Wattanasupachoke (2011) evaluates the critical success factors of digital transformation for improving customer experience in organisations in Thailand. The study develops a framework consisting of six factors for the investigation including interactivity, publicity, content, customer insights, active users, and brand equity. Multiple regression analysis is performed on the data, which are collected from 106 executives using questionnaire survey. The study highlights that content is the most critical factor that can significantly influence active users, customer insights, and brand equity.

Noor (2011) evaluates the critical success factors of digital transformation for improving customer experience for mobile banking users in Malaysia. The study adopts the technology acceptance model for investigating the critical success factors which consist of five dimensions including perceived ease of use, perceived usefulness, perceived credibility, customer awareness, and perceived risk. Data are collected from 2000 customers in 11 banks in Kuala Lumpur. The Cronbach's alpha technique is used to determine the internal reliability, and reliability analysis is used to measure the reliability. The study highlights that perceived usefulness, perceived quality, and awareness, are the most influential factors for customer's motivation to adopt mobile technology.

Sahney (2015) determines the critical success factors of digital transformation impacting customer satisfaction in retail organisations in India. The framework for this study considers two aspects of digital transformation including (a) the customer requirements, which includes the performance, convenience, information, personalisation, interaction, reliability and trust, security, aesthetics, access, post-sales service, and continuous improvement dimensions, and (b) the technology characteristics, which include the dimensions of easy accessibility of products and services, clear transaction policies, clear return policies and refund, simple and unambiguous purchase transactions, ease of navigation and search, quick loading times, error-free processing, accurate delivery system, transaction privacy, transaction safety, individualized attention, and online interactivity between buyer and seller. The quality function deployment and interpretive structural modelling are used to analyse the data for evaluating the critical success factors. The study reveals that quick loading times, ease of navigation, and accurate delivery system, are the most critical drivers for customer satisfaction.

Marius et al. (2007) investigate the critical success factors of digital transformation for improving the customer relationship. The study adopts a framework consisting of three dimensions for data collection from customers including human factors, processes, and technology. The DESMET technique is used to analyse the data, which highlights senior management commitment, management of customer information, marketing automation, and commitment to operations management, as being the most critical factors for improving the customer relationship.

Sohal et al. (2005) investigate the critical success factors of digital transformation for improving customer collaboration. The study investigates the critical success factors based on a framework which consists of three dimensions including the strategic factors, the structural factors, and the management-oriented factors. An analysis of the data which are collected through eight case studies presents various critical success factors for improving customer collaboration including strong customer focus, clearly defined performance measurements, value proposition, and an incremental development process.

The above studies focus on the processes and functions of digital transformation that impact the customer relationship, experience, perception, behaviour, satisfaction and motivation (Zhou 2011). Such studies present the various events, conditions, and variables for the improvement of customers' physical and emotional engagement with an organisation (Noor 2011).

Most of the existing studies conducted to investigate the critical success factors of digital transformation in organisations have shown their relative significance by enabling organisations with knowledge about the approach, impact, characteristics and outcomes of digital transformation. More specifically, these studies have provided organisations with a framework for implementing digital transformation. Such existing studies, however, have their focus either on the internal organisation`s perception or on the customer`s perception towards the investigation of the critical success factors. They lack consideration of the perceptions of experts working in organisations towards digital transformation for improving customer experience. As a result, this situation raises a need to investigate the critical success factors of digital transformation by considering experts` opinions towards improvement of the customer experience in organisations.

2.5 Concluding Remarks

This chapter aimed to review the related literature on the concept of digital transformation. It highlighted the various stages in undertaking digital transformation in organisations, elements of digital transformation for improving customer experience, processes in executing digital transformation for improving customer experience, and challenges in executing digital transformation. This chapter reviewed the existing studies conducted on digital transformation for improving the customer experience and the critical success factors of digital transformation. The review of the literature reveals key shortcomings of existing studies towards investigating the critical factors of digital transformation for improving customer experience. It also highlights the need to further explore the critical success factors of digital transformation for improving customer experience in organisations. Based on the literature review in this chapter, a new conceptual framework is developed in the next chapter for further investigation.

Chapter 3

A Conceptual Framework

3.1 Introduction

A conceptual framework is a structure of concepts, assumptions, expectations, beliefs and theories that support and inform a study (Maxwell 2005, p. 33). It is a visual representation of the core idea of a research project which explains the main phenomenon to be studied in a research project (Miles and Huberman 1994; Teece and Pisano 1994). Such a framework assists in defining the core concepts of a research project, identifying the gaps in literature, defining the boundaries of the research, outlining the preferred approaches to achieve the research objectives, and creating relationships between various concepts (Jabareen 2009).

This study aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. To adequately accomplish this aim, a conceptual framework for facilitating the investigation of such factors is required. Such a framework aims to provide a foundation for conducting this qualitative study.

For developing a conceptual framework, this chapter is organised into four sections. Section 3.2 presents an analysis of various existing theories for identifying the critical success factors. Section 3.3 evaluates the theoretical perspectives of digital transformation with an aim to identify the key dimensions towards improving the customer experience, which leads to the development of a conceptual framework. Finally, Section 3.4 provides some concluding remarks for the chapter.

3.2 Theoretical Foundation

There are several prominent theories which can facilitate the investigation of the critical success factors of digital transformation in organisations including (a) the resource-based view (Wernerfelt 1984), (b) the knowledge-based view (Sveiby 2001), (c) the absorptive capacity theory (Cohen and Levinthal 1990), (d) the collaboration capability theory (Blomqvist and Levy 2006), and (e) the dynamic capability theory (Teece et al. 1997). These theories each present distinctive characteristics towards evaluating the capabilities and their impact on an organisation's performance. **Table 3.1** provides a summary of the existing theories and their focus areas.

Table 3.1 A summary of the theories and their focus areas

Theories	Focus Areas
Resource-based View	<ul style="list-style-type: none"> • Explore external opportunities by using internal resources • Exploit tangible and intangible resources • Focus on uniqueness of resources • Produce non-imitable resources
Knowledge-based Theory	<ul style="list-style-type: none"> • Absorb and transform knowledge • Integrate and develop new knowledge-based capabilities • Create a unique value proposition
Absorptive Capacity Theory	<ul style="list-style-type: none"> • Acquire and assimilate external capabilities • Transform and exploit the external capabilities • Leverage knowledge for innovation • Examine the effect of capabilities on performance
Collaboration Capability Theory	<ul style="list-style-type: none"> • Evaluate the individual and combined capabilities • Develop combined or collaborative capabilities • Build relationships to develop combined capabilities • Develop an ability to trust, communicate and coordinate
Dynamic Capability Theory	<ul style="list-style-type: none"> • Integrate, build, and reconfigure capabilities • Accumulate, adopt and transform resources

The resource-based view (RBV) focuses on exploiting an organisation's strategic resources for improving its performance and for their competitive advantages (Wernerfelt 1984). It usually considers two types of organisational strategic resources, tangible resources and intangible resources (Barney 2001; Wernerfelt 1984). The tangible resources consist of physical resources of an organisation such as people, technologies, infrastructure, products and services (Wernerfelt 1984). The intangible resources consist of abstract resources of an organisation such as brand image, intellectual property and perceptions (Barney 2001; Wernerfelt 1984). The RBV assumes that the organisation's resources should possess two properties including (a) uniqueness, which differentiates an organisation from its competitors and (b) inimitability, as attributes which cannot be transferred to other organisations (Pant et al. 1997, Priem and Butler 2001, El Gizawi 2014). Such a theory considers that it is more viable for an organisation to explore external opportunities by focusing in their internal resources rather than creating new skills and capabilities (Wernerfelt 1984).

The knowledge-based theory (KBT) proposes that knowledge is the most significant strategic resource for an organisation to achieve competitive advantage (Grant 1996; Sveiby 2001). It focuses on transforming existing knowledge to develop new knowledge towards creating new capabilities in an organisation (Grant 1996). The new knowledge is acquired by an organisation through identifying an existing problem and then discovering a valuable solution (Nickerson and Zenger 2004). Such developed knowledge is integrated into an organisation's existing environment to create a unique value proposition for customers. The KBT enables organisations to enhance the features and reduce the cost of products and services (Nickerson and Zenger 2004). Such a theory is used to analyse the creation of new capabilities and evaluate their impact on the organisation's performance.

The absorptive capacity theory (ACT) suggests that organisations acquire, assimilate, transform and exploit new information towards producing new capabilities to be competitive (Cohen and Levinthal 1990; Zahra and George 2002). It aims to analyse an organisation's existing capabilities and invest in building new capabilities (Cohen and Levinthal 1990). It focuses not only on exploiting external knowledge but also on predicting accurately the nature of the future knowledge for creating and integrating new capabilities in an organisation (Vasylieva 2013). The ACT consists of two parts including (a) the potential absorptive capacities which drive organisations to acquire and assimilate external capabilities and (b) the realised absorptive capacities which transform and exploit the external capabilities (Vasylieva 2013; Zahra and George 2002). Such a theory facilitates a focus on evaluating various capabilities in an organisation, addressing the development of new capabilities, leveraging knowledge for innovation, and examining the effect of capabilities on performance (Vasylieva 2013).

The collaboration capability theory (CCT) highlights the association of the various entities in an organisation to produce combined or collaborative capabilities towards improving the organisation's performance (Blomqvist and Levy 2006). It involves a process in which individuals, groups, and functions come together to interact and form relationships to develop combined capabilities for mutual gain (Tyler 2001). Such a theory focuses on defining cooperative competencies between various elements in an organisation to develop an ability to trust, communicate, and coordinate (Sivadas and Dwyer 2000). Such capabilities are usually multi-dimensional, which not only complement other capabilities but also act as substitute capabilities in an organisation (Tyler 2001). Such a theory is adopted for evaluating the individual and combined capabilities in an organisation and analysing their effect on the outcome.

The dynamic capability theory (DCT) reflects an organisation`s ability to integrate, build, and reconfigure internal and external competences to address a rapidly changing environment (Teece et al. 1997). It explains the performance of an organisation in a dynamic business environment setting. The DCT focuses on creating new capabilities that organisations employ to reach competitive advantage (Teece et al. 1997). It emphasises an organisation`s ability to achieve an innovative form of pathway toward gaining competitive advantages (Danneels 2011; El Gizawi 2014; Teece and Pisano 1994). The DTC highlights an organisation`s ability to develop new capabilities through accumulating and changing the resources (Castellacci and Natera 2013; Helfat and Peteraf 2003). Such a theory is used for investigating the various capabilities in an organisation which are created by the changing internal conditions in an organisation and evaluating their effect on the organisation`s performance.

The present study seeks to employ a theory which can assist in the investigation of the critical success factors of digital transformation towards improving customer experience. The adopted theory should be able to assist this research project in analysing the critical success factors and evaluating their impact on customer experience. As a result, the DCT is adopted as the most suitable theory for undertaking this study. The dynamics capability theory is adequate for undertaking this research due to three main reasons. Firstly, it focuses on adapting, integrating and re-configuring the internal capabilities which align with the key characteristics of digital transformation. Secondly, the DCT considers changing pathways for achieving organisational goals, which matches with the objectives of this study for improving customer experience by exploiting digital transformation. Finally, it suggests leveraging digital technological assets for organisational improvement.

Referring to the DCT helps this study in building an understanding of the new internal capabilities derived from digital transformation. It assists in investigating the adaptive nature of organisations towards changes caused by new internal capabilities, generated by digital transformation. The DCT facilitates the investigation of the dynamic nature of digital transformation. Finally, the theory aids in presenting and evaluating the relationships between digital transformation and customer-experience improvement.

3.3 A Conceptual Framework

The approach to developing a conceptual framework for this study focuses on the core attributes of DCT, the key dimensions of digital transformation, and the key critical success factors of digital transformation, as highlighted in **Figure 3.1**. The DCT classifies organisational capabilities into three dimensions including (a) process, (b) position and (c) path.

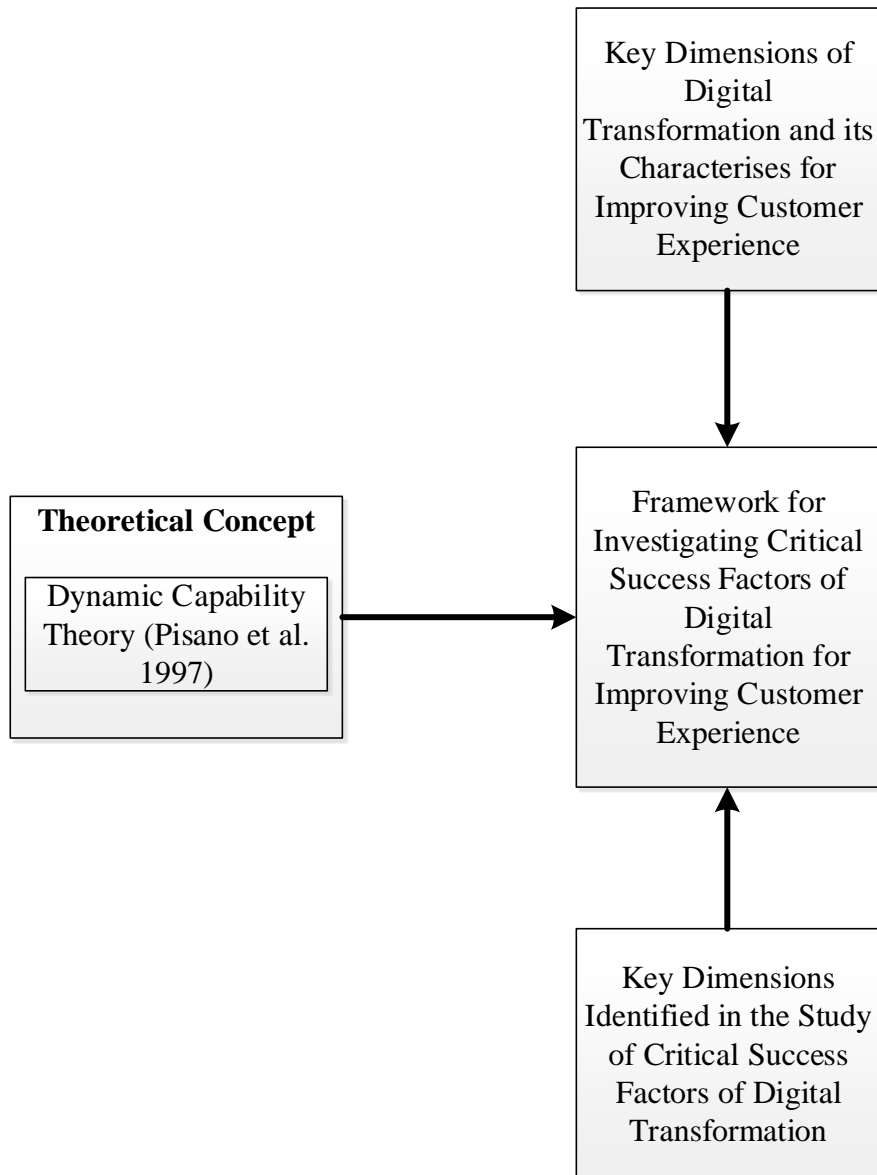


Figure 3.1 An approach for developing the conceptual framework

The process dimension focuses on a series of interrelated activities an organisation performs, which encapsulates practices and learning (El Gizawi 2014). It considers three key aspects of an organisation`s capabilities including (a) integrating and coordinating activities (O'Connor 2008; Teece and Pisano 1994; Teece et al. 1997), (b) improving performance of the activities

(El Gizawi 2014; Makadok 2001; Teece et al. 1997) and (c) transforming activities (O'Reilly and Tushman 2008; Teece and Pisano 1994).

The position dimension focuses on the organisation's existing portfolio of assets, which consists of (a) technology assets, (b) knowledge assets, (c) financial assets and (d) location assets (Teece and Pisano 1994). The technology asset includes technological capabilities and infrastructure of an organisation (Teece and Pisano 1994). The knowledge assets are related to the skills and competencies of the people in an organisation. The financial assets describe an organisation's cash positioning and organisation's ability to generate cash by investments. Finally, the locational assets are related to the organisation's location-based advantage in the market which differentiates an organisation from its competitors (Teece and Pisano 1994).

The path dimension describes how an organisation changes its path by exploiting its capabilities in order to enhance its performance (El Gizawi 2014; Teece et al. 1997). It showcases the dynamic nature of an organisation towards accommodating change (Teece and Pisano 1994).

The conceptual model for this research refers to the three dimensions of the dynamic capability theory. Process, for example, defines the internal organisational process improvement and feature capabilities generated by digital transformation towards customer experience improvement. Position focuses on exploiting the digital technology assets for improving customer experience. Path considers the actions by which organisations achieve improvement in customer experience.

Digital transformation impacts several key organisational areas which assist in improving the customer experience, including the business model, the operational processes, the products and services, and customer engagement (Andal-Ancion et al. 2003; Berman 2012; Bowersox et al. 2005; Fitzgerald et al. 2014; Ward and Peppard 2016; Westerman et al. 2014a; Westerman et al. 2014b). The changes to the business model focus on adopting new revenue models, cost structures and customer offerings, which trigger improvement of the customers' value propositions (Amit and Zott 2012; Berman 2012). The advancements of the operational processes improve the process quality and productivity, which enhances the customer experience (Davenport 2013; Patel et al. 2012). The improvement of products and services impacts customer perceptions towards the organisation (Fitzgerald et al. 2014). The improved engagement between customers and organisations, by integrating digital channels, personalising sales and marketing, improving customer service, and inducing self-service, increases customer collaboration (Chi et al. 2016; Piccinini et al. 2015; Ryan 2016). These characteristics of digital transformation assist to structure the key dimensions of the conceptual framework.

The analysis of digital transformation for improving the customer experience highlights various key attributes which assist in formulating the conceptual framework. These attributes focus on formulating customer-centric strategies (Bharadwaj et al. 2013), analysing customer data (Westerman et al. 2014a), enhancing the customer value proposition (Berman 2012), developing customer interaction channels (Lemon and Verhoef 2016), improving customer processes (Piccinini et al. 2015), integrating digital technologies (Trainor et al. 2014), and designing customer engagement features (Fitzgerald et al. 2014). These attributes all play a vital role in designing the conceptual framework.

The analysis of studies of the critical success factors highlights various approaches for investigating the critical success factors which aid the development of a conceptual framework. These approaches focus on (a) the adoption of digital transformation (Fitzgerald et al. 2014), (b) the impact of digital transformation on an organisation`s performance (Zhu et al. 2006) and (c) the impact of digital transformation on customers (Andal-Ancion et al. 2012; Berman 2012). **Table 3.2** summarises the key dimensions identified for developing the conceptual framework for this study.

Table 3.2 A summary of dimensions used for the conceptual framework

Literature	Key Dimensions	References
Dynamic Capability Theory	Process, Path, Position	Teece et al. (1997)
Digital Transformation	Business Model	Andal-Ancion et al. (2012), Berman (2012)
	Operational Processes	Davenport (2013), Patel et al. (2012)
	Products and Services	Fitzgerald et al. (2014), Hess et al. (2016)
	Customer Collaboration	Berman (2012), Chi et al. (2016), Piccinini et al. (2015), Ryan (2016), Westerman et al. (2014a)
Customer Experience Improvement	Customer-centric Strategies	Bharadwaj et al. (2013), Ward and Peppard (2016)
	Customer Analytics	Berman (2012), Kiron et al. (2012), Westerman and Bonnet (2015)
	Value Proposition	Ward and Peppard (2016), Zhu et al. (2006)
	Touch Points	Klaus and Maklan (2013), Lemon and Verhoef (2016)
	Customer Engagement	Fitzgerald et al. (2014), Ryan (2016), Westerman et al. (2014b)
	Planning and Execution	Andal-Ancion et al. (2003), Kane et al. (2015), Mithas et al. (2013)
	Digital Technology Integration	Trainor et al. (2014)
Critical Success Factors of Digital Transformation	Adoption of Digital Transformation	Fitzgerald et al. (2014), Low et al. (2011)
	Impact on Performance	Zhu et al. (2006)
	Impact on Customers	Andal-Ancion et al. (2012), Berman (2012), Wattanasupachoke (2011)

A conceptual framework is developed based on the key dimensions identified in the literature review. It consists of four dimensions, namely, analytics, business, customers, and digitalization. Each dimension reflects a group of capabilities of digital transformation towards improving the customer experience in organisations. The dimensions of the conceptual framework assist in the investigation of the critical success factors for this study. Each of the dimensions is discussed in detail in the subsequent paragraphs. **Figure 3.2** presents the conceptual framework referred as an ABCD framework for this study. It consists of four dimensions, namely, analytics, business, the customer, and digitalization.

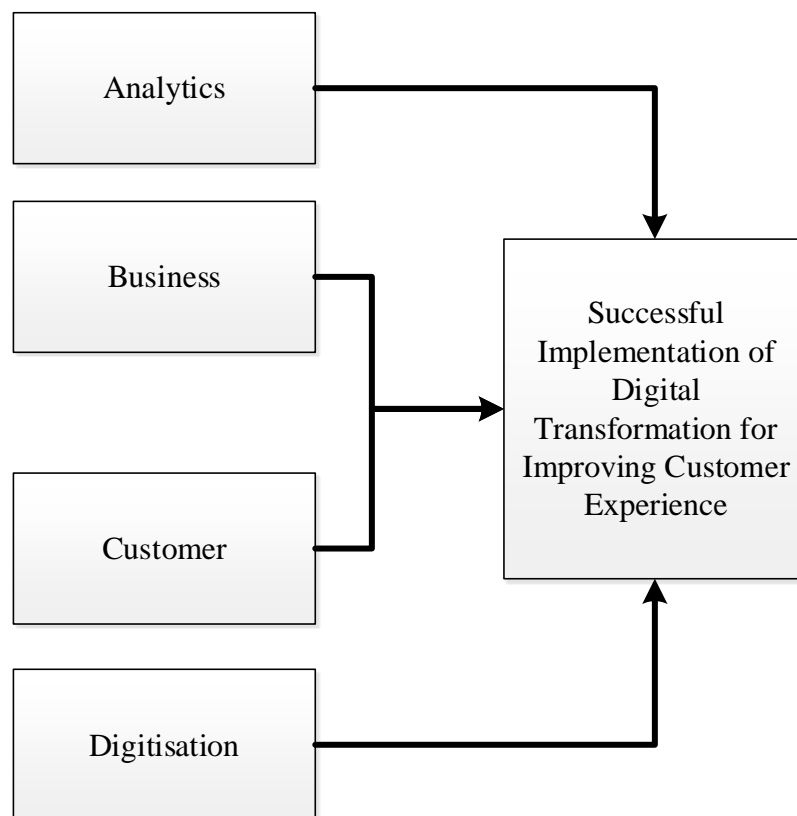


Figure 3.2 An ABCD framework

3.3.1 Analytics

Analytics is related to the systematic analysis of customer data using digital technologies to discover the embedded knowledge in organisations. Such knowledge can then help organisations to better collaborate with their customers for an improved customer experience (Kiron et al. 2012). Usually there is a large volume of digital data in structured and unstructured formats available in organisations (Brynjolfsson and McAfee 2012; Katal et al. 2013; Marz and Warren 2015). Digital transformation allows the organisation to perform complex analytics using this large volume of data for better understanding customer behaviours, market trends, and customer engagement patterns (Erevelles et al. 2016; Maltby 2011). It assists organisations to improve the process for customer-centric decision making and customer engagement, which triggers the improvement of customer experience (Berman 2012; Davenport and Dyché 2013; Fan et al. 2015; Fitzgerald et al. 2014; Kiron et al. 2012).

Analytics facilitate the improvement of the various organisational capabilities related to people, process, functions and technologies in an organisation, which eventually triggers the improvement of customer experience (Sahu et al. 2018b). Analytics improves the people-related capabilities through enhanced skills, knowledge and activities of people working in an organisation for the customers (LaValle et al. 2011). The analytics revamp the process capabilities through better supporting various customer engagement processes (Bijmolt et al. 2010; LaValle et al. 2011). They boost the functional capabilities through improved focus on the characteristics and behaviours of the customer functions of the customer journey (Gualtieri et al. 2013; LaValle et al. 2011). Analytics upgrade the technological capabilities by better supporting the capturing, storing, analysing, interpreting and presenting of the customer data (Hu et al. 2014).

There are various factors in the analytics that can affect the success of digital transformation. These factors aid the construction of the analytics dimension of the conceptual framework. Several analytics factors are identified in the analysis of digital transformation and studies of critical success factors. The analysis of digital transformation highlights various factors including customer understanding (Fitzgerald et al. 2014; Zhu et al. 2006), data capturing from digital channels (Sambamurthy and Zmud 2012), digital customer data (Westerman and Bonnet 2015), customer insights (Berman 2012; Kiron et al. 2012), market trends (Andal-Ancion et al. 2012), customer-centric decision making (Kane et al. 2015), customer segments (Andal-Ancion et al. 2012; Hess et al. 2016), customer engagement patterns (Ward and Peppard 2016), and customer behaviour forecasting (Bowersox et al. 2005; Kiron et al. 2012).

The literature on critical success factors presents several factors which could impact the customer experience in organisations, including complexity of products and services (Low et al. 2011), implementation of customer analytics (Ajmal et al. 2010), data availability (Abdollahzadegan et al. 2013), data redundancy, data reliability (Astri 2015), data integrity (Mathrani and Viehland 2010), data quality and usability (Olszak and Ziembra 2012), and customer insights (Wattanasupachoke 2011). The effective consideration of these factors has been singled out as most critical for digital transformation towards improving customer experience.

3.3.2 Business

The business dimension is about the changes of business conditions for improving customer experience through digital transformation (Sahu et al. 2018a). The internal conditions in an organisation are related to the changes in management decisions, financial conditions, and an organisation's performance, direction, infrastructure and support activities (Matt et al. 2015). External business conditions are mostly related to competition, regulation and policies (Bharadwaj et al. 2013; Hess et al. 2016; Leeflang et al. 2014). Leadership and management play a significant role in identifying these changes in business conditions and taking appropriate actions for improving customer experience. Leadership provides direction to implement digital transformation and build strategies that can impact the customer experience (Fitzgerald et al. 2014); whereas management focuses objectively on the implementation of the strategies (Sambamurthy and Zmud 2012).

The business dimension comprises four components including (a) the digital strategy, (b) the business model, (c) the customer value proposition, and (d) the business strategy. The digital strategy involves formulating the implementation of digital transformation in an organisation by focusing on the scope, scale and speed of delivery of products and services, and the value creation for customers (Bharadwaj et al. 2013). The business model consists of revenue models, cost structures, market valuations and profitability of digital transformation (Amit and Zott 2012; Berman 2012). The customer value proposition focuses on delivering the most economically unique experience to the customers (Bocken et al. 2014). The business strategy engages in capturing opportunities and improving the business performance in organisations (Matt et al. 2015).

There are various business factors that can affect the success of digital transformation for improving customer experience in organisations. These factors assist in forming the business dimension of the conceptual framework. Several business factors are identified in the literature review analysis of digital transformation and its critical success factors. The analysis in the literature review showcases various business factors including value capture, value creation and delivery (Hess et al. 2016; Matt et al. 2015; Westerman and Bonnet 2015), value proposition (Berman and Marshall 2014; Berman 2012), cost optimisation (Sambamurthy and Zmud 2012), pay per usage (Zhu et al. 2006), flexibility in costing (Andal-Ancion et al. 2012), product strategy (Ward and Peppard 2016), market strategy (Fitzgerald et al. 2014), demand and supply (Zhu et al. 2006), regulations and policies (Agarwal and Brem 2015; Agarwal et al. 2010a), funding (Andal-Ancion et al. 2012), pricing strategy (Bharadwaj et al. 2013), and budgeting (Sambamurthy and Zmud 2012).

The critical success factors literature highlights several factors including relative advantage (Low et al. 2011), operating cost (Garrison et al. 2012), business agility (Garrison et al. 2012), strategic alignment (Trkman 2010), level of investment (Trkman 2010), capabilities limitations (Abdollahzadegan et al. 2013), cost reduction (Astri 2015), project management (Mathrani and Viehland 2010), clear business vision and plan (Olszak and Ziembra 2012), strong customer focus, value proposition, and clearly defined performance measurements (Mendoza et al. 2007). The consideration of these factors is significant towards the success of digital transformation for improving customer experience.

3.3.3 Customer

The customer dimension concerns the entire customer interaction journey with the organisation through digital transformation (Sahu et al. 2018a). It focuses on bi-directional interactions between customers and the organisations (Jenkinson 2007; Lemon and Verhoef 2016). Organisations interact with their customers using various direct and indirect channels. The direct channel reflects an organisation`s motivation to proactively connect with its existing or potential customers for direct digital sales, services and customer feedback (Khanna et al. 2014). The indirect channel reflects an organisation`s attempt to reach out to a wide range of customers without being specific to a particular segment such as digital promotions and campaigns (Fulgoni and Lipsman 2014; Guo 2013). The customers, on the other hand, also connect with the organisation through direct or indirect means. The direct interactions occur when customers deliberately connect with organisations for sales or services using digital channels (Fulgoni and Lipsman 2014; Guo 2013). The indirect interactions occur when customers reach out to organisations using a generic digital platform such as social media (Straker et al. 2015).

The two most significant aspects of improving customer experience through digital transformation which usually need to be considered are (a) the customer touch points and (b) the customer engagement. The customer touch points relate to the introduction and improvement of all the interactions between an organisation and its customers throughout the customer journey using digital transformation (Lemon and Verhoef 2016). The customer engagement relates to the improvement in the collaboration between an organisation and its customers for sales and services using digital transformation capabilities (Berman 2012; Fitzgerald et al. 2014). Both these aspects are critical in formulating the customer dimension.

There are various factors that can affect the success of digital transformation for improving customer experience. These factors facilitate the development of the customer dimension of the framework. Many customer factors are identified in the literature review of digital transformation and studies performed to investigate its critical success factors. The analysis in the literature review presents various customer factors including customer collaboration (Berman 2012; Fitzgerald et al. 2014), customer touch points (Berman 2012), customer engagement (Andal-Ancion et al. 2012; Berman 2012), customer feedback, customer service (Ward and Peppard 2016), personalised marketing (Kane et al. 2015; Ryan 2016), personalised sales (Westerman and Bonnet 2015), operational process improvement (Sambamurthy and Zmud 2012), better products and services (Hess et al. 2016), service and product quality (Rajabi and Bolhari 2015; Westerman and Bonnet 2015), customer self-service (Berman 2012; Westerman and Bonnet 2015; Westerman et al. 2011), process transparency (Agarwal et al. 2010a), and customer management (Zhu et al. 2006).

The critical success factor studies highlight several factors including continuous improvement (Trkman 2010), standardisation of processes (Trkman 2010), customer empowerment (Trkman 2010), scalability, collaboration and efficiency (Astri 2015), customer relationship (Mathrani and Viehland 2010), knowledge management and training (Mathrani and Viehland 2010), well-defined processes (Olszak and Ziemba 2012), managing customer expectations (Olszak and Ziemba 2012), service quality (Zhou 2011), interactivity (Wattanasupachoke 2011), customer awareness (Noor 2011), reliability and trust (Sahney 2015), personalisation (Sahney 2015), and post-sales service and convenience (Sahney 2015). The consideration of these factors in digital transformation is identified as significant towards the improvement of customer experience in organisations.

3.3.4 Digitalization

Digitalization refers to the adaptability, usability and integration of digital technologies and their application in an organisation's existing infrastructure (Kino 2011; Tassef 2012; Sahu et al. 2018b). It considers utilising the capabilities of various digital technologies towards improving customer experience in organisations (Coronado and Antony 2002). It focuses on the adoption of digital technologies, integration of digital technologies in an existing environment, and effective capacity utilisation of the adopted digital technologies, towards improving customer experience.

Studies of digitalization usually consider five aspects including (a) the digital applications, (b) the digital platforms, (c) the digital infrastructure, (d) the functions, and (e) the digital channels. The digital applications aspect relates to the creation and usability of the software applications to coordinate functions, tasks and activities for customers in an organisation (Charland and Leroux 2011; Zysman et al. 2011). The digital platforms aspect is a group of technologies that are used as a base upon which other applications and processes are developed to connect with the customers, such as Facebook, Twitter, or WordPress (Baek et al. 2010; Haucap and Heimeshoff 2014). The digital infrastructure is the organisation's internal network, data storage and hardware capacities which support the digital platforms and applications (Borgman 2010). The functions are the group of features which organisations use internally to co-ordinate with various teams to deliver value for their customers (Westerman et al. 2014a). The digital channels are the various interfaces which are used by organisations to connect with their customers, including mobile, web, emails and instant messaging applications (Hirt and Willmott 2014).

There are several digitalization factors that can affect the success of digital transformation towards improving customer experience in organisations. These factors enable the construction of the digitalization dimension of the conceptual framework for this study. The analysis of digital transformation and studies of its critical success factors present several factors. The analysis of digital transformation highlights various digitalization factors including digital channels (Fitzgerald et al. 2014), infrastructure capacity (Kane et al. 2015), digital product innovation (Berman 2012), data transformation from physical to digital (Matt et al. 2015), usability (Sambamurthy and Zmud 2012), data security (Zhu et al. 2006), integration quality (Westerman and Bonnet 2015), infrastructure support (Bharadwaj et al. 2013), and digital content (Kane et al. 2015).

The critical success factor studies present several factors including technological readiness (Low et al. 2011), scalability (Astri 2015), technology usability (Mathrani and Viehland 2010), technology integration (Ravesteyn and Batenburg 2010), content (Wattanasupachoke 2011), easy accessibility of the products and services (Sahney 2015), ease of navigation, quick loading times, accurate delivery system (Sahney 2015), and capacity (Yeoh and Koronios 2010). These factors play a critical role in digital transformation for improving customer experience in organisations.

3.4 Concluding Remarks

This chapter aimed to develop a conceptual framework for the research. Based on the comprehensive review of literature of digital transformation, customer experience and critical success factors of digital transformation, and referring to dynamic capability theory, a conceptual framework is developed for this study. The conceptual framework for this research consists of four dimensions including analytics, business, customer, and

digitalization. The conceptual framework lays the foundation for implementing a qualitative study to investigate the critical success factors of digital transformation for improving customer experience in organisations. The qualitative study includes multi-level processes for collecting and analysing data through semi structured interviews with experts, to investigate the critical success factors for each proposed dimension of the conceptual framework.

Chapter 4

Research Methodology

4.1 Introduction

A research methodology is an approach to studying a research problem which involves various phases, from the theoretical underpinning of the research to the collection, analysis and interpretation of the research data (Creswell 2013). It provides a research project with guidelines to achieve the research objectives (Creswell 2013; Mouton and Marais 1988; Creswell 2009). The research methodology consists of various techniques, methods and instruments in order to attain the answers for the research questions (Goddard and Melville 2004).

Selecting an appropriate research methodology for any research depends upon the nature of the study (Kothari 2004). The selection of an appropriate research methodology influences the quality of the study by providing the most suitable research design in a specific research context. As a result, it is very pertinent to select the most suitable research methodology for the study. The process of selecting a research methodology considers three fundamental questions including (a) how the research methodology fits in the research context, (b) what techniques, methods and instruments will be supported by the research methodology and (c) how the research methodology will be implemented for answering the research questions (Kothari 2004).

This chapter evaluates various research methodologies with an aim to select the most appropriate research methodology for this study. It seeks to adopt a research methodology

which can guide the research in (a) implementing the most adequate research instrument to get the most suitable research outcomes, (b) developing the data collection procedure to be followed for the research and (c) designing the data analysis process for answering the research questions.

This chapter is organised into seven sections. Section 4.2 describes the selection of a research methodology for the research. Section 4.3 presents the research technique used to conduct the study. Section 4.4 presents the research design. Section 4.5 discusses the data collection process followed in the study. Section 4.6 highlights the data analysis techniques. Finally, Section 4.7 provides some concluding remarks for the chapter.

4.2 Research Methodologies

Adopting an adequate research methodology ensures that the research project is of high quality. It aims to effectively address all the research questions. This makes it very significant to select the most appropriate research methodology. There are various methodologies which can be used for a research project based on the nature of the study including (a) qualitative methodology, (b) quantitative methodology and (c) mixed-methods methodology (Kothari 2004).

The qualitative research methodology explores, analyses and interprets underlying facts of a phenomenon in a specific research project (Creswell 2013). It is exploratory in nature. This methodology is used in a research project when the base theory and variables are not defined (Creswell 2011). The qualitative research methodology intends to use inductive research strategies. Such strategies help in building abstractions, concepts, hypothesis and theories rather than testing existing theories (Bendassolli 2013). The qualitative research methodology

focuses on the description of a scenario using words, feelings and senses to explain a specific phenomenon (Williams 2011). As a result, it enables the understanding of people's motivations, actions and beliefs in a particular context (Myers 2013).

The quantitative research methodology follows a positive approach towards testing a theory. It focuses on describing the research experience through observations and measurements of a certain phenomenon (Creswell 2013). The quantitative research methodology intends to establish, confirm and validate relationships, and develops generalisations that contribute to a theory (Leedy and Ormrod 2001; Williams 2011). It employs strategies of inquiries such as experiments and surveys for collecting data through predetermined instruments (Creswell 2003). The findings from the use of such a methodology can be predictive, explanatory and confirmatory in nature (Williams 2011).

The mixed-methods methodology is a combination of both qualitative and quantitative methodologies (Creswell 2013). It intends to draw the strengths and mitigate the weaknesses of the qualitative and quantitative methodologies (Johnson and Onwuegbuzie 2004). The mixed-methods methodology exploits the method of data collection and analysis from both the qualitative and quantitative methodologies in a single research study to address the same research question (Rocco et al. 2003). It adds depth to the research project and removes inconsistencies in stand-alone qualitative and quantitative findings (Rocco et al. 2003). The mixed-methods methodology assists to enhance the validity of the research results and supports the results more robustly (Creswell 2013).

The present research adopts a qualitative research methodology due to the exploratory nature of the study. The use of the qualitative methodology enables this study to analyse various

perspectives from the experts on digital transformation towards the identification of the critical success factors for such transformation. Such methodology is appropriate for this study due to two main reasons. Firstly, the use of a qualitative methodology assists in understanding experts' perceptions, attitudes and actions towards digital transformation for improving customer experience (Myers 2013). Secondly, it allows the study to build a reliable consensus from a group of experts on digital transformation with respect to the critical success factors for improving customer experience (Padgett 2016).

The qualitative research methodology consists of three stages including (a) the preliminary stage, (b) the principal stage and (c) the validation stage (Bailey 2007). The preliminary stage focuses on defining the objectives of the research (Hennink et al. 2010). This stage provides the initial understanding of a specific phenomenon in a normal setting in the light of meanings, understandings and views of all the participants (Hennink et al. 2010). The principal stage involves the process of collecting the data using selected data collection methods. It focuses on analysing the data to identify the underlying facts (Bailey 2007; Hennink et al. 2010). The validation stage checks the conclusions against further data sets and tests the feasibility of the recommendations (Hennink et al. 2010).

The adoption of a qualitative methodology involves the use of various methods including (a) case study, (b) ethnography study, (c) phenomenological study and (d) content analysis (Creswell 2011; Williams 2011). Case study involves an empirical enquiry to investigate a contemporary phenomenon in a real-life context, especially when the boundaries between phenomena and contexts are not clearly defined (de Casterle et al. 2012). Ethnography study includes the investigation of a intact culture or group over a prolonged period of time by collecting the observational data to identify norms, beliefs and structures (Creswell 2003).

Phenomenological study focuses on the process of understanding a particular phenomenon from a participant's point of view (Leedy and Ormrod 2001). It captures participants' perceptions of an event or situation, and their experiences (Creswell 2003). Content analysis involves a systematic examination of the content of a body of materials for identifying patterns and themes underlying the facts (Leedy and Ormrod 2001).

The present research requires understanding of the critical success factors based on the experiences and beliefs of experts for improving customer experience through digital transformation. It, therefore, adopts a phenomenological approach to conducting this exploratory research.

4.3 Research Techniques

A research technique is a systematic process of collecting and analysing data for adequately answering the research questions. There are several qualitative research techniques which can be used based on the characteristics of the study. The most popular techniques include (a) a two-phase based interview method (Rockart 1978), (b) a five-step analysis method (Caralli et al. 2004) and (c) an iterative Delphi technique (Amberg et al. 2005; Parker Gates 2010). The present study focuses on the investigation of the critical success factors in a specific context. As a result, this study seeks to employ research techniques which can provide an appropriate framework for the investigation.

A two-phase based interview method is commonly used for ascertaining the critical success factors in a specific situation (Rockart 1978). The first round of the interview involves open questions to compile a preliminary list of the critical success factors. These factors are identified based on the viewpoints of individual experts. The second round includes the same

experts to ascertain the factors identified in the first round (Boynton and Zmud 1984; Grunert and Ellegaard 1992; Rockart 1978). The outcome of the second round interview confirms the critical success factors (Boynton and Zmud 1984; Grunert and Ellegaard 1992; Rockart 1978).

A five-step analysis method is used for investigating the critical success factors (Parker Gates 2010). The five steps are (a) defining scope, (b) collecting data, (c) analysing data, (d) deriving the critical success factors, and (e) analysing the critical success factors (Caralli et al. 2004; Parker Gates 2010). The most common data collection method used for such a purpose is to interview experts.

An iterative Delphi technique is a structured communication process among experts for achieving a convergence of opinions on a specific real-world issue (Linstone and Turoff 1975). It requires experts to present their opinions through detailed interviews and share their opinions for consensus building (Yousuf 2007). The use of such a technique consists of multiple rounds of iterations to derive the convergence of opinions from experts (Atthirawong and McCarthy 2001; Brancheau et al. 1996). A Delphi technique is widely used for gathering data from participants within their domains of expertise (Hsu and Sandford 2007). Such a technique is well suited for consensus-building among a panel of experts on a research subject (Hsu and Sandford 2007; Linstone and Turoff 1975).

The present research adopts the Delphi technique for investigating the critical success factors of digital transformation towards improving customer experience. The use of the Delphi technique enables this research the ability to provide a controlled feedback process for the

investigation. A series of iterations is used to build consensus among the participants for identifying the critical success factors (Hsu and Sandford 2007).

The use of the Delphi technique brings in many advantages for the research project. It is conducted separately with each individual, which does not require all participants to be co-located (Franklin and Hart 2007; Williams and Webb 1994; Yousuf 2007; Ziglio 1996). This reduces the effect of dominant participants who can create or influence the opinions of other participants (Franklin and Hart 2007; Williams and Webb 1994; Yousuf 2007; Ziglio 1996). The Delphi technique considers multiple facets and situations while presenting the findings (Franklin and Hart 2007; Williams and Webb 1994; Yousuf 2007; Ziglio 1996). It keeps the discussions with the participants focused on the research topic (Franklin and Hart 2007; Williams and Webb 1994; Yousuf 2007; Ziglio 1996). As a result, the Delphi technique enables a strong decision-making process for building consensus (Franklin and Hart 2007; Williams and Webb 1994; Yousuf 2007; Ziglio 1996).

The present study employs the Delphi technique in three iterations. The first iteration focuses on discussing the research topic in detail with the participants in order to capture the critical data to analyse the participant`s point of view. The second iteration allows each participant to view other participants` perspectives, which enables the participant to analyse the factors that have been overlooked. The third iteration has an emphasis on capturing each participant`s opinion on the other participants` beliefs (Okoli and Pawlowski 2004). After a series of iterations, a convergence of opinions is built (Hsu and Sandford 2007). This leads to the identification of the critical success factors (Goodman 1987).

4.4 Methodology Implementation

A qualitative research methodology in this research is implemented with respect to the following research design. The research design for this study includes a detailed plan which acts as a guide for the investigation of the critical success factors. It involves the end-to-end process for implementing the qualitative research methodology towards answering the research questions. The research design of this study consists of five phases as highlighted in **Figure 4.1**.

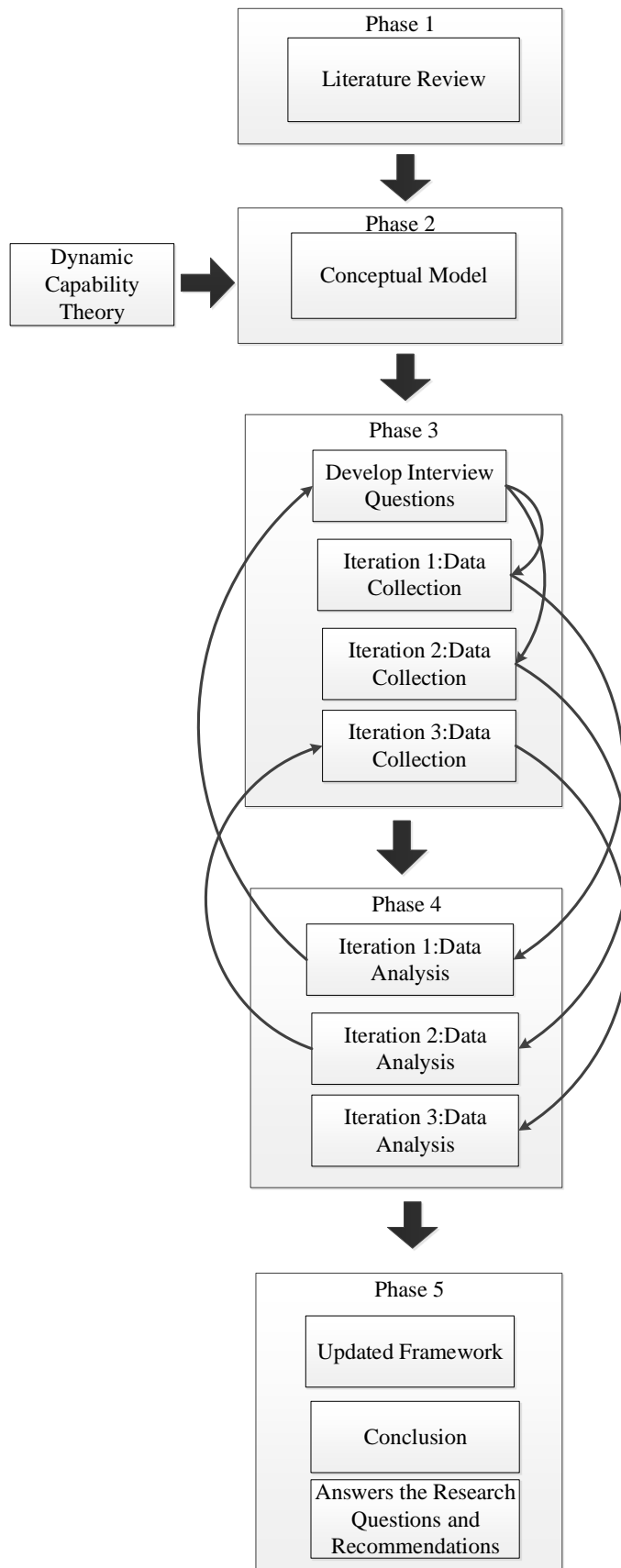


Figure 4.1 The research design

The first phase aims to review the related literature on the concept of digital transformation. It highlights the need to explore the critical success factors of digital transformation for improving customer experience in organisations. This phase showcases the key aspects of implementing digital transformation towards improving customer experience in organisations. The outcome of this phase triggers the development of an appropriate conceptual framework for this study.

The second phase focuses on developing a conceptual framework which is referred to in answering the research questions for this study. In developing such a framework, the dynamic capability theory is adopted as a theoretical base. The conceptual framework designed for this study is based on the key findings extracted from the literature review analysis. Such a framework acts as a base for framing questions for data collection and analysis.

The third phase utilises the conceptual framework developed for designing the interview questions for the experts. A semi-structured interview format is adopted for the interview questions. Two rounds of interview questions are created for data collection. The preliminary round of interview questions is more open-ended, which has the intent to explore the view points of the experts on the topic. The second round of interview questions is developed from the outcomes of the first round of interviews. The second round is more structured than the first, having an intention to capture specific details on particular viewpoints from the experts.

The data collection for this study follows the Delphi technique which consists of three rounds of iterations for investigating the critical success factors. The first iteration focuses on exploring the breath of the topic. It consists of open-ended questions for interviewing the participants in a semi-structured manner. The outcome of this round depicts the participants'

beliefs which are based on their experience in digital transformation towards improving customer experience in organisations.

The second iteration allows participants to view other participants' perspectives from the previous iteration. This iteration involves interviewing the participants in a more structured manner which includes specific questions based on their previous responses. The second iteration captures the specific reasons behind the participants' beliefs. It allows participants to rank the critical success factors. The information captured in this iteration is used to create a comprehensive list of critical success factors by considering all aspects covered in the two iterations, including consensus from all participants.

The third iteration focuses on sharing the list of the critical success factors with all the participants. This list includes participants' rating, minority opinions, factors which are out of the list of criticality, and factors that have achieved consensus. This iteration also gives participants a final opportunity to revise their judgement or provide additional feedback. The outcome of this iteration presents the final list of the critical success factors of digital transformation towards improving customer experience in organisations.

The fourth phase focuses on the analysis of the data collected in the previous phase. The analysis also follows the Delphi technique, following three rounds of iterations for (a) identification, (b) verification and (c) validation of critical success factors. The identification of critical success factors focuses on determining the preliminary list of critical success factors. It is based on the analysis of data collected in the first iteration of interviews. This preliminary list of critical success factors enhances the four dimensions of the conceptual framework.

The verification of critical success factors focuses on modifying the conceptual framework with further findings. It is based on the analysis of data collected in the second iteration of interviews. The data from the second round of interviews are analysed to present a more refined list of critical success factors. The validation of critical success factors focuses on analysing the data based on the feedback received from the participants after they are presented the findings from the first two rounds of iterations. This presents the final framework of the study, which consists of the final list of critical success factors.

The fifth phase interprets the findings from the data analysis for answering the research questions. This leads to a revised conceptual framework. This phase provides recommendations for organisations undergoing such initiatives. It also highlights the limitations, implications and contributions of the study along with the conclusions of the research undertaken.

4.5 Data Collection

Data collection is a process of capturing and measuring data in a systematic manner for answering the research questions (Patton 1990). It allows a systematic collection of information from the subject of the study (Patton 1990). A qualitative research project includes various data collection instruments such as interviews, participant observation, focus groups and conversational analysis (Merriam 1998). The present study uses interview as the data collection instrument to gather appropriate research data to answer the research question.

There are various types of interviews which can be used for data collection, including (a) structured interviews, (b) unstructured interviews and (c) semi-structured interviews (Creswell 2011). In a structured interview, the questions are defined in advance and have

limited answer choices (Myers 2013). In an unstructured interview, the questions are not pre-defined and are opened ended. This has an intention to explore more on the topic (Collis et al. 2003; Hussey and Hussey 1997). In a semi-structured interview, the questions are open ended and have a broader view than in a structured interview. This type is generally considered as a hybrid of structured and unstructured interview.

This study employs the semi-structured interviews for data collection. The semi-structured interviews are used due to three main reasons. Firstly, they provide high validity to the research by enabling an optimal platform for direct participant interactions for capturing their perceptions and in-depth details about the research topic. Secondly, the semi-structured interviews assist in clarifying complex questions. Thirdly, they reduce the chances of both interviewees and interviewer pre-judging questions, and maintain open dialogue to capture all information.

This research is performed in an Australian organisation which has implemented digital transformation for improving customer experience. The employees from this organisation were recruited to participate in the research. A total of 28 participants were contacted for the study, of which, 21 accepted to participant in this study. The participants' experience ranged from 5 years to 18 years. The participants for the study were recruited considering three factors including (a) their exposure to digital transformation projects in organisations, (b) their depth of experience in digital transformation and (c) their expertise in various areas of digital transformation. Based on the initial analysis, three categories of participant roles are identified for this study including (a) the managers, (b) the analysts and (c) the technology users.

The managers are responsible in driving the digital transformation program in an organisation. The main focus of managers is to manage the costs, efforts, people, risks, investments and outcomes of such initiatives in an organisation. The role of managers is further classified into three sub categories including (a) the executives, who assist in funding digital transformation programs in organisations, (b) the product or commercial managers, who own such programs in organisations and (c) the project or program managers who manage the end-to-end implementation of digital transformation in organisations.

The analysts evaluate the implementation of digital transformation from process, function and technological perspectives. This role is classified into three sub categories including (a) the business analysts or process analysts, who develop functions and processes of digital transformation, (b) the solution designers or technical architects, who manage the technological layout of digital transformation and (c) the product specialists, who provide support for the implementation of digital products for digital transformation.

The technology users are specialists in the technical analysis of the digital products and their implementation. They have in-depth technical knowledge for the implementation of digital transformation in organisations. This role is classified into three sub categories including (a) the technical analysts, who perform technical integration of new digital technologies with the organisation`s existing systems and processes, (b) the implementation analysts, who are responsible for the deployment of digital transformation, ensuring the operationalization of the integration with new technologies and (c) the support specialists, who use technological applications of digital transformation to support customers. **Table 4.1** provides a summary of various roles supporting digital transformation in organisations.

Table 4.1 The digital transformation roles

Managers		
Executives / Sponsors	Product / Commercial Managers	Program / Project Managers
<ul style="list-style-type: none"> • Owns digital transformation • Releases funds • Provides high-level vision for digital transformation 	<ul style="list-style-type: none"> • Owns the execution from commercial perspective • Responsible for financial numbers • Devises cost of products and services 	<ul style="list-style-type: none"> • Manages end-to-end delivery of such initiatives • Manages cost, quality, and resources • Manages scope, time, and activities
Analysts		
Business Analysts / Process Analysts	Solution Designers / Technology Architects	Product Specialists
<ul style="list-style-type: none"> • Maps end to end functional, and process changes • Performs analysis of processes and features • Assists the execution from functional analysis perspective 	<ul style="list-style-type: none"> • Maps out technical solutions for digital transformation • Manages the technology integration • Plans technical deployment of digital technologies 	<ul style="list-style-type: none"> • Provides technical product support • Owns end-to-end product knowledge • Maps business requirements with technical requirements
Technology Users		
Technical Analysts	Implementation Analysts	Support Specialists
<ul style="list-style-type: none"> • Performs technical analysis • Develops platforms and applications • Transforms business requirements into technical solutions 	<ul style="list-style-type: none"> • Implements digital transformation solutions in existing environment • Supervises the implementation of new solutions 	<ul style="list-style-type: none"> • Uses the end applications • Supports customer service functionality • One-point contact for all customer related enquiring • Performs all back-end support for customers

The individual participants for this research were selected through one of three processes (a) through having an immediate professional working relationship, (b) being nominated by a participant based on their working relationship and (c) being identified through professional networking forums. The participants were first contacted through emails that contained (a) a brief summary about the project, (b) the expectations from the participant for the project, and (c) the process of conducting the interviews. **Appendix G** presents a sample of an email for contacting the participants for the study. Once the participant accepted to volunteer for the research, the details of the interview such as the time, and location were communicated.

The ABCD framework is implemented in the data collection process in two stages. The first stage focuses on developing the interview questionnaire for each of the three rounds of the data collection process. The second stage focuses on implementing the framework using semi-structure interviews. For the data collection process, interview questions is segregated in two parts. The first part concentrates on the generic digital transformation questions which focus on the key components of digital transformation, the impact of digital transformation, and process of digital transformation.

The second part emphasises on the details of the digital transformation by referring to the four dimensions of the ABCD framework. This part again is segregated into two sections. The first section focuses on the overview, description, and analysis of the dimension. The second section stresses on the intrinsic details of the dimension which can impact customer experience in digital transformation setting in an organisation. For example, key components of customer analytics for digital transformation, its impact on customer experience and critical factors of customer analytics which can affect customer experience.

The first round of the data collection process includes interview questions which is developed to get the detailed view of the critical success factors of the four ABCD framework dimensions. This round refers to the data analysis performed on the data collected in the previous round to develop the second round of interview questions. The second round targets to capture details of a dimensions to understand the sub-dimensions and critical success factors of the dimension. Finally, the third round of the data collection process refers to the data analysis of the first two rounds of the data collection process to finalise the sub-dimensions of an ABCD dimension and their subsequent critical success factors.

During the interviews, at first a participant was introduced to the research topic and consent taken on the participant consent form. **Appendix D** highlights a sample of the participant consent form which was used in this research. For each round of iteration, a list of pre-identified questions was referred to discuss during the interview with the participant. **Appendix A** and **Appendix B** showcase the list of interview questions used in iteration one and two, respectively. The average interview lasted for about 60 minutes, ranging from 45 minutes to 90 minutes. **Appendix E** presents the comprehensive list of interviews conducted for this study.

4.6 Data Analysis

Data analysis is a process of transcribing the collected data, organising the transcribed information, generating the codes and themes to form logical insights about the information, and interpreting the generated information for answering the research questions (Creswell 2013). The data analysis for this study followed a five-stage process including (a) the

transcribing stage, in which the unstructured data was formatted, (b) the organising stage, in which the formatted data was logically organised to generate meaningful information, (c) the coding stage, in which the organised data was further condensed into analysable units through creation of categories and concepts derived from the data, (d) the theming stage, in which the coded data was used for examining, identifying and recording patterns towards the research questions, and (e) the interpreting stage, in which the codes and themes are depicted for presenting the answer to the research questions.

The transcribing stage forms a basis for the data analysis process. Transcribing is a process of presenting data that is collected in an oral format in a written format (Bailey 2008; Ezzy 2013). It translates all the structured, un-structured and semi-structured data which are collected through various qualitative methods such as interviews, video recordings, audio recordings and focus groups, into a textual format. Such an approach assists researchers by providing greater familiarity about the data (Bailey 2008; Bryman and Bell 2007). The data collected in the present research underwent a verbatim transcription process of capturing the conversation from all participants. The support information such as external notes, email suggestions and documents collected from the participants were also transcribed in this stage.

The organising stage involves arranging all the data collected in a logical manner which is easily retrievable and usable for the analysis. For this study, all notes, documents, emails and external information collected during the data collection process were scanned and stored in multiple folders. The folders consist of multiple sub-folders each having a unique name based on the participant`s code and name. The transcribed data are organised based on each unique participant`s code, name, contact type, document type, data, keywords and key findings.

The coding stage involves a process of labelling, compiling and categorising data for the analysis. It assists in sorting information and enables efficient access to data. Open coding was used in the present research to categorise the data (Strauss and Corbin 1998). This is a process of breaking, comparing, conceptualising and categorising data (Strauss and Corbin 1998). The open coding is realised in the present research by identifying similarities in data, comparing instances and analysing quotes. This research follows a four-step process for the open coding including (a) understanding the participant experience through the transcripts, (b) analysing the transcripts to identify the key dimensions to generate the initial codes, (c) identifying the categories for the initial codes and (d) identifying the properties and defining the categories.

The participants are categorised under three roles including (a) the managers, (b) the analysts, and (c) the technology users. The managers are given a code “M”, the analysts are given a code “A” and the technology users are given a code “U”. Each participant is nominated with a unique numeric code from 1 to 21. This numeric code is used with the role code to generate a unique participant code for each participant, for example M1, M2, A1, U1, and U3. Interviews are abbreviated as “INT”. Every interview within each iteration is associated with a participant with a unique number from 1 to 21, such as INT1, INT9 or INT 21. Iterations are numbered from 1 to 3 and are given a code “I”, defining each iteration such as I-1, I-2 or I-3 for iteration one, iteration two and iteration three, respectively. Overall, each participant interaction is provided with a unique code which consists of role category, interview number and iteration number. For example, INT3/M3/I-1 means that the interview is associated with participant number 3, with manager number 3, and with iteration one.

The theming stage involves a process of generating patterns from the data collected, to uncover facts of a phenomenon associated with the specific research questions. This process, which emphasises identifying, examining and recording patterns from the data collected, is referred to as thematic analysis (Ritchie and Spencer 2002). The thematic analysis is considered the most appropriate for any study that requires systematic analysis of data elements to discover themes using interpretation (Alhojailan 2012). Theme, here, is referred to as a pattern found in the information that describes and organises the possible observations or interpretations of a phenomenon (Boyatzis 1998). The thematic analysis translates the observations and applies the analysis to determine the validity of the themes (Boyatzis 1998). It enables the researcher to determine the relationship between the concepts, link various concepts and opinions of the participants, and compare the opinions of the participants gathered at different times during the study (Alhojailan 2012).

The thematic analysis for the present study involves three stages including (a) data reduction, (b) data display, and (c) data conclusion (Miles and Huberman 1994). The data reduction sharpens, sorts, compresses and organises data to draw and verify specific conclusions (Miles and Huberman 1994). It assists in arranging the concepts to provide enhanced data clarity (Miles and Huberman 1994). The data reduction avoids data overload by providing better view of related concepts from different participants' statements (Alhojailan 2012; Miles and Huberman 1994).

The data display follows a process of organising, compressing, assembling and presenting the data in a format that is effective to read and understand (Coffey and Atkinson 1996). It assists in arranging the concepts and thoughts for enhancing data clarity and avoiding data overload (Miles and Huberman 1994). The present study adopts a thematic network map to present the

findings. A thematic network map aims to facilitate the structuring and portray various levels of themes in the research study (Attride-Stirling 2001). It presents the extraction of the themes synthesised from the captured data in terms of three levels of theme including (a) the basic theme, (b) the organising theme, and (c) the global theme (Attride-Stirling 2001).

The basic themes are the lowest order themes that are extracted from the simple characteristics of the data. The organising themes are upper-order themes that organise the basic themes into groups of similar characteristics. The global themes are the highest-level themes that encompass the principal metaphor in the data as a whole (Attride-Stirling 2001). They are groups of organising themes that, together, present an argument for answering the research question. **Figure 4.2** displays a sample thematic network map (Attride-Stirling 2001).

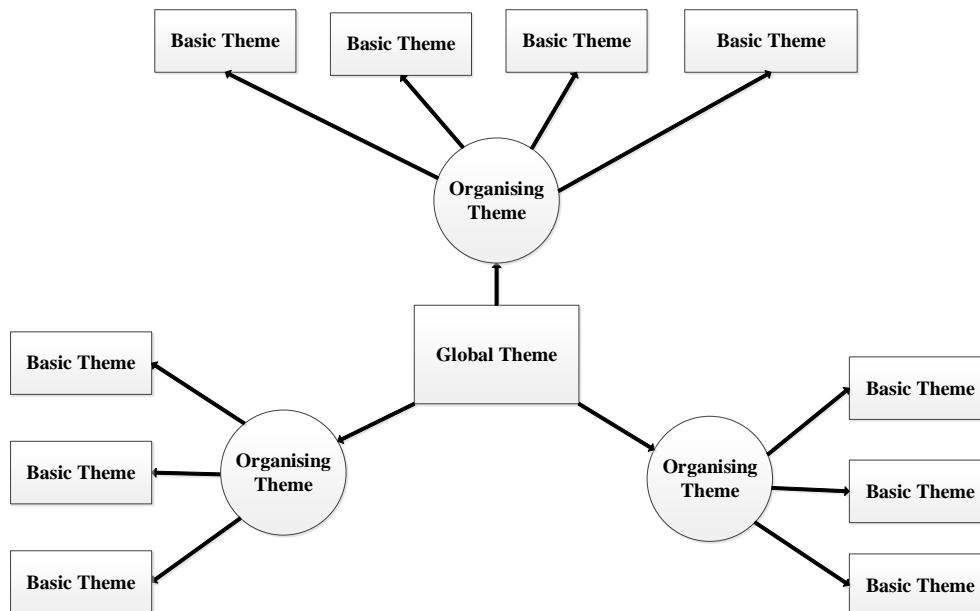


Figure 4.2 The structure of a thematic network map

The data conclusion involves drawing and verifying conclusions for the analysis (Alhojailan 2012). It focuses on generating meaning from the data adopted for the research. The data conclusion consists of several activities including presenting themes, establishing categories, identifying interrelationships and building conceptual coherence for answering the research questions.

The interpreting stage involves the process of using the codes and themes for presenting the answers to the research questions (Elo and Kyngäs 2008). The codes and themes present linkages between the data and the research questions (Boyatzis 1998; Dey 2003). Using these linkages, the logical inferences are developed, which helps in drawing the final conclusions of the research (Dey 2003). This stage draws the final conclusions based on the linkages and logical inferences extracted from the thematic analysis.

The ABCD framework is referred and implement in each rounds of the data analysis stage which is followed by each rounds of the data collection stage. Thematic analysis is referred in each rounds of the data analysis stage to uncover the themes and patterns related to the dimensions of the ABCD framework. The process of identifying themes is performed in three stages. First stage focuses on removing all non-relevant data captured in the interview process to organise the data. The second stage defines a thematic map for each dimension to analyse the data extracted from the previous stage. The third stage focuses on aligning the captured data in the first stage to segregate the data based on the key themes of the ABCD dimensions. The outcome of each rounds of the data analysis stage refines the thematic map for each dimension. The updated thematic maps after each rounds of data analysis captures the sub-dimensions and the critical success factors of a particular dimension of the ABCD framework.

The present study uses Nvivo, a qualitative data analysis software package, to analyse the collected data from the three iterations. Nvivo has a capability to organise and use the qualitative data such as interview transcripts and notes to draw specific interpretations. Using Nvivo brings in many advantages to this study, including improving quality of research, reducing manual tasks which brings in flexibility in the research, generating themes, and producing accurate conclusions (Bazeley 2002; Welsh 2002). Nvivo is used in this study to accomplish five main tasks including managing collected data, analysing data, investigating data, interpreting data, and modelling and reporting (Bazeley and Jackson 2013).

4.7 Concluding Remarks

This chapter presented the research methodology adopted for addressing the research questions. Based on the nature of this study, a qualitative research methodology is adopted for adequately answering the research questions. This chapter highlights a research design for this study which consists of five phases including (a) evaluating the existing literature, (b) designing the conceptual framework to conduct the qualitative study, (c) developing the questionnaire and collecting data from experts, (d) analysing data and (e) interpreting findings for answering the research questions. Phases (a) and (b) are already discussed in Chapters 2 and 3, respectively. This chapter discussed the approach towards the data collection and analysis, backed by Delphi technique, which is conducted over three iterations. A comprehensive discussion of the analysis of the data is presented in the subsequent chapters.

Chapter 5

Critical Success Factors for Digital Transformation

5.1 Introduction

Critical success factors are the conditions, characterises, situations, activities, circumstances, or events that define the success of a defined scope of work in an organisation (Dickinson et al. 1984). They assist organisations in identifying the areas which are critical for the implementation of a project or an initiative (Howell 2009). The present study aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. To achieve this aim, the study adopts a qualitative methodology to evaluate the perceptions of digital transformation experts towards improving customer experience.

The qualitative data are collected by conducting semi-structured interviews with experts for the study. The collected data are systematically analysed in this chapter by performing theory-driven thematic analysis. The thematic analysis assists this study in explaining the behaviour of digital transformation towards improving customer experience. It enables the identification of the critical success factors of digital transformation for improving customer experience in organisations. Such an analysis is backed with several thematic maps for better representing the thematic analysis findings.

This chapter is organised into four sections as follows. Section 5.2 presents the findings by uncovering the various themes identified. Section 5.3 revises the initial framework and

presents the detailed ABCD framework. Finally, Section 5.4 provides some concluding remarks for the chapter.

5.2 Thematic Analysis Findings

This research project aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. The research findings in this study are organised around four global themes, namely, analytics, business, customer, and digitalization. The identified factors under each of these global themes are examined and presented based on their relevance, characteristics and relationships with the associated theme. Each of the global themes consists of several organising themes for evaluating the effectiveness of digital transformation for improving customer experience. Each of the global themes and their associated organising themes and basic themes are discussed in this section, which leads to the identification of the critical success factors. **Figures 5.2, 5.4, 5.6 and 5.8** showcase the four thematic networks developed for better representing each global theme and its associated lower-level themes.

5.2.1 Global Theme One: Analytics

Analytics is the first global theme identified in this study. It relates to performing the computational analysis of customer data for identifying useful patterns. Interviewees reveal a positive influence of analytics towards the success of digital transformation for improving customer experience. They underpin many aspects of analytics which can directly influence the customer experience in organisations. An analysis of interview data presents three organising themes under analytics, as presented in Figure 5.1 including (a) data analytics, (b)

trend analytics and (b) process analytics. Figure 5.2 summarises each of the organising themes.

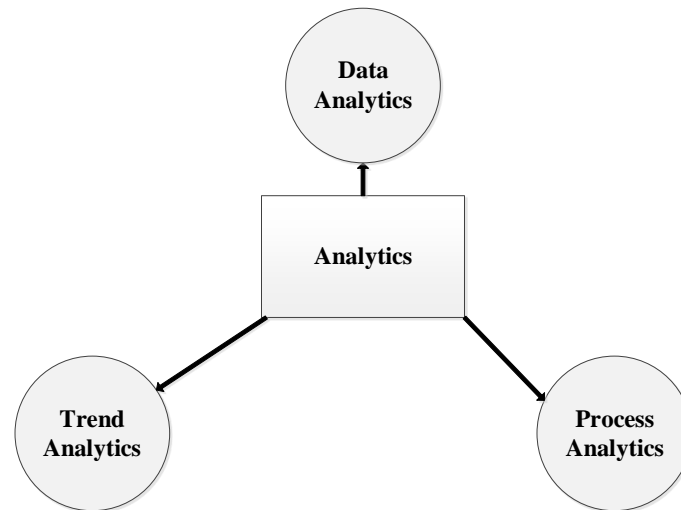


Figure 5.1 The analytics theme

Data Analytics

Data analytics is about storing and processing customer data captured through various digital channels for deriving better customer understanding. Such process involves customer data captured from web, mobile, social media and online searches to draw specific customer insights such as personal, demographics, behavioural, and purchasing patterns. The process of data analytics involves storing, inspecting, structuring, transforming and modelling the customer data for discovering useful information which supports better decision-making. Interviewees coherently suggest that better data analytics enables organisations to understand key customer trends towards achieving better customer experience. The data analytics is

abstracted from three basic themes, namely, (a) data management, (b) data modelling, and (c) real-time data processing.

Data management is related to storing, structuring and transforming the digital data captured from various sources. An analysis of the interview transcripts highlights three very significant aspects of the data management including (a) managing the speed at which the data is captured, (b) handling the size of the data captured and stored and (c) organising the structured and un-structured customer data. Interviewees fully support the role of efficient data management towards the improvement of customer experience. The following excerpt from an interview transcript clearly reflects the importance of the data management towards improving customer experience in organisations:

“...The velocity, variety and relevant time sensitivity is important in the data management processes of what you are analysing and for what purpose the analytics needed to support the model coupled with levels of complexity. It will ensure that the analysed data is of high quality for deeper customer understanding...eventually helping in providing better customer service and improving customer experience...” [INT12/U5/I-1]

Data modelling focuses on comprehending the captured customer data in an effective manner. It includes segregating and grouping the captured data, establishing relationships between various data elements, and extracting unknown information. Interviewees strongly believe that understanding the customer data helps organisations to enhance the customer experience. This is illustrated in an interview segment as follows:

“Organisation that is capable of using and understanding large un-structured data by digital transformation are able to make better decisions for their customers...capturing better

customer sentiments, personalising products, and extracting customer unspoken requirements...” [INT11/U4/I-2]

Real-time data processing enables organisations with an ability to enable quick customer services and trigger better customer decisions. An analysis of the interview data reveals that real-time monitoring trends and analysing customer preferences help in exceeding the customer expectation which triggers improvement in the customer experience. An interview further elaborates on this as follows:

“Organisations use real-time customer analytics to improve several aspects of business operations, including sales and marketing optimisation, fraud prevention, inventory planning, and fulfilment. It also boosts in accurately anticipating real-time customer behaviour to make relevant customer offers at each stage” [INT19/A7/I-2]

Trend Analytics

Trend analytics presents key insights on the demographical and attitudinal behaviours of the customers which assists organisations to make predictions and take customer-centric decisions. It presents various key customer behaviours such as customer consumption and demand patterns, personal attitudinal insights, and demographics grouping. Trend analytics plays a pivotal role in influencing the effectiveness of digital transformation for improving the customer experience. Interviewees highlight various key customer trends that are critical towards improving the customer experience in organisations. Customer trend analytics is abstracted into three basic themes including (a) analytics-based segmentations, (b) improved insights, and (c) customer engagement patterns.

Analytics-based segmentation is about enabling an organisation with a holistic view of the segregations of the customers by their traits and attributes. The study reveals that analytics-based segmentation empowers an organisation with deeper understanding of the customers profile in each of the customer segments by uncovering several patterns related to the customer behaviours and demographics. Interviewees highlight that analytics-based segmentations have a positive impact on the customer experience. This is illustrated by one of the interviewees as follows:

“...Analytics based segmentation operate under the fact that every customer is different and that their marketing efforts would be better served if they target specific, smaller groups with messages that those consumers would find relevant and lead them to buy something...this impacts their overall customer experience...” [INT3/M3/I-1]

Improved insights define the capabilities of an organisation to understand the minute details of its customers based on their preferences and behaviours. The interview data suggest that customers feel very satisfied when they receive information that reflects their individual behaviour and preferences allowing them to make informed decisions. Interviewees highlight the risk of degradation of the customer experience which can be caused due to overburdening customers with irrelevant information. An interviewee illustrates the importance of customer insights as follows:

“...Deeper customer insight helps in understanding the customers...This not just helps to understand their current demand but also helps in understanding what they expect in future...” [INT9/U3/I-1]

Customer engagement patterns are about the understanding the customers behaviours in the customer journey with the organisations. Interviewees highlight that the customer engagement patterns assist an organisation in understanding the reasons why customers engage with the organisation and how they engage with the organisation. The following interview transcript clearly shows the importance of the customer engagement patterns towards the improvement of the customer experience in the view of a senior manager:

“...using digital analytics capabilities for improving engagement understanding...we can take many tactical decisions...for our customers...making sure they are happy...”

[INT15/A5/I-2]

Process Analytics

Process analytics is a systematic analysis of process-related information towards optimising the customer processes, which leads to the improvement of customer experience. It provides real-time visibilities of the complex customer processes which help organisations in understanding the bottlenecks, throughputs and key performance areas of the customer processes. Process analytics enables various features such as real-time customer processing, personalised marketing, predictive customer services and sales analytics. It is abstracted from five basic themes including (a) forecasting analytics, (b) predictive marketing and service, (c) real-time customer information, (d) real-time decision making and (e) capacity utilisation analytics.

Forecasting analytics is about evaluating the data related to all past customer-related actions for predicting future actions. Experts feel that forecasting of various customer processes

makes organisations focus more on the non-performing areas towards improving the customer expectation. An interviewee illustrates the linkage between the customer expectations and forecasting as follows:

“...Real-time forecasting in customer processes is very critical in meeting customer expectations for continuous servicing...they expect us to understand their consumption pattern...and provide real-time assistance...this can be done by better forecasting...”

[INT10/M5/I-1]

Predictive marketing and services aids organisations to proactively engage with their customers effectively. Interviewees collectively suggest the better use of real-time or automated predictive marketing and services capabilities to help enhance the customer experience in organisations. One of the interviewees depicts the benefits of predictive marketing towards improving customer experience as follows:

“...we know what marketing strategies are useful for which customer segment and what services we can use for a particular customer segment... Therefore, better predictive engagement can help raise financial numbers and customer satisfaction...” [INT7/A6/I-1]

Real-time customer information focuses on providing customers with information related to their personal, subscription, services, products, fulfilment, delivery, incidents and orders in real time. Interviewees believe that providing customers with on-time and all-time information makes customers empowered, where they can use this information and take informed decisions. An interviewee explains that customer feel very satisfied with real-time information. According to him:

“...Customers know what they are doing, and what they want, making it easy for organisations to manage customers. Customers feel very satisfied when they are informed real time...” [INT2/M2/I-1]

Real-time decision making is about providing real-time responses to the customers based on their actions. Experts underpin various aspects of enabling real-time decision making for customers, including identifying probable outcomes, enabling organisations to take proactive measures to avert critical situations, and taking actions on the opportunities identified in real time. An analysis of the interview transcripts highlights a positive association of enabling real-time decision making and customer experience. An interviewee states as follows:

“...Real-time actions avoid the probability of providing non-relevant and wrong information to customers...this expedites the customer processes and reduces customers’ time..”
[INT5/A2/I-2]

Capacity utilisation analytics is related to the evaluation of various capacities related to the resources, infrastructure, volume and velocity of data, data processing, and location and device-based services towards supporting the customer processes. It assists organisations to maintain a uniform utilisation level and keep the customer experience uninterrupted by capacity fluctuations. This relationship between the capacity utilisation and customer experience outcome is articulated by an interviewee as follows:

“...capturing the system capacity utilisation in various segments makes us to maintain the quality of service intact and uninterrupted...” [INT6/U1/I-2]

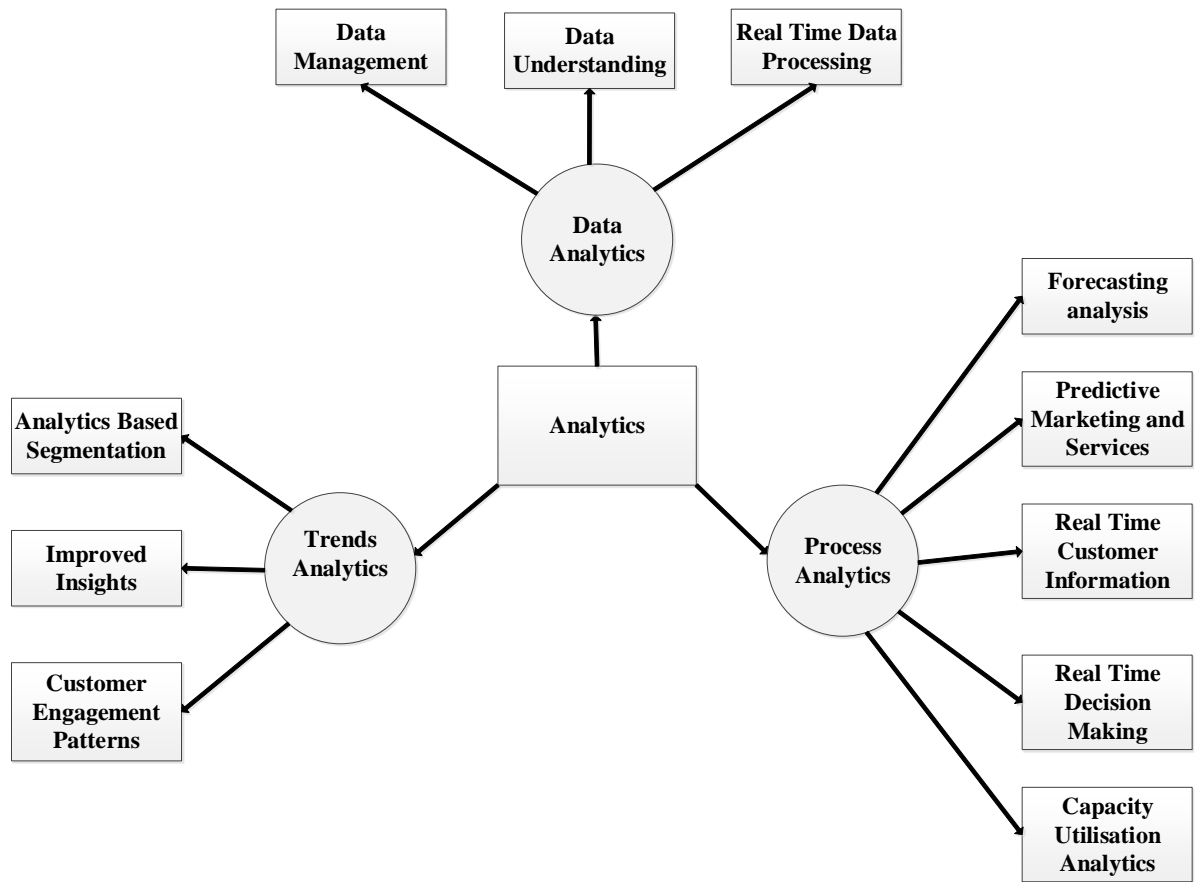


Figure 5.2 A thematic network of the analytics theme

5.2.2 Global Theme Two: Business

Business is the second global theme identified in the study. It focuses on incorporating customer expectation, understanding market dynamics, planning the execution of digital transformation, enabling better costing and pricing of products and services, and improving customer values towards improving customer experience in organisations. The discussion with the experts unfolds various critical success factors that can have an effect on the customer experience for undergoing digital transformation in organisations. An analysis of the interview data underpins three organising themes for business including (a) strategic

execution, (b) business model, and (c) value proposition as presented in **Figure 5.3**. **Figure 5.4** summarises each organising theme.

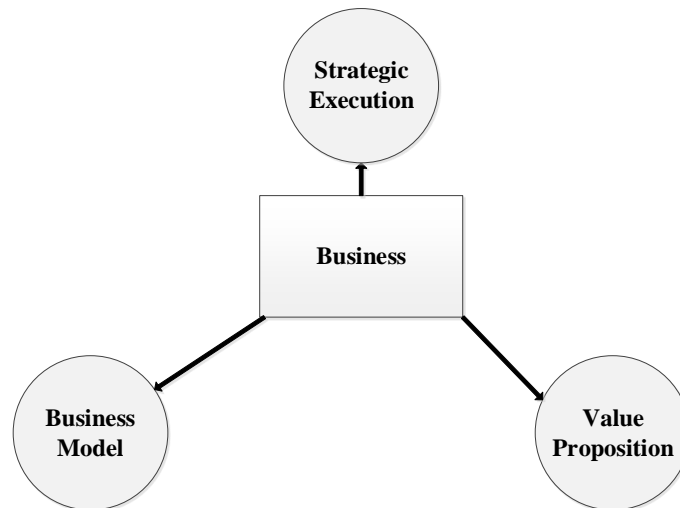


Figure 5.3 The business theme

Strategic Execution

The strategic execution is related to the implementation of the strategic plan which an organisation envisions for digital transformation towards improving customer experience. It includes various features such as fulfilling customer needs, responding to market dynamics, inculcating technological capabilities, and planning and executing customer engagement. Interviewees believe that better managing strategic execution results in greater impact to the customer experience. The strategic execution is unearthed from four basic themes including (a) customer needs, (b) single view of the customers, (c) customer-centric execution and (d) adoption of changing market situations.

The customer need is related to the customer`s expectation for receiving better value offerings from the organisation. Interviewees strongly believe that understanding the customer needs is essential for an organisation to enhance the customer experience. This phenomenon can be seen in the following interview segment from a senior manager:

“...In my opinion, understanding customer requirements is very important to develop the understanding for creating new processes and features for customers. This understanding should not come from generic sources such as online reports or journals, instead the need should be analysed specific to our products and services and should be obtained from analytics reports, customer survey, or customer testing. Capturing such information and integrating it with our system and processes makes a huge difference in changing customers’ behaviour towards our products...” [INT1/M1/I-1]

The single view of the customer is about providing a unique view of customers who use various channels for interacting with the organisation. The organisations usually face challenges in having visibility on the customers who access their products and services through different channels. Interviewees pointed that it becomes very significant to have a single view of the customer in order to enhance the customer experience. An interviewee illustrates the impact of having a single view of customers on customer experience as follows:

“...if I am a customer and I connect with the organisation using different channels and I realise these doesn’t recognize me or have less visibility of me or my consumption, then definitely this will degrade my experience...” [INT15/A5/I-1]

The customer-centric execution induces a culture of a customer-first approach in organisations which makes customers feel more valued. Interviewees reveal that customer-focused functions, features and processes have direct impact on the customer experience.

This is clearly illustrated in the following interview segment:

“...Most of our digital initiatives are focused to tackle a particular scenario or a segment. In this, the overall picture of improving the overall customer experience goes missing because there is less connect between other initiatives in organisation. Big transformational programs such as digital transformation help us to bind the entire vision of enhancing customer experience right from the planning stage till the delivering stage...” [INT3/M3/I-1]

The adaptive nature of an organisation is about understanding and reacting to the changing market conditions for delivering better offerings for its customers. Interviewees suggest that there is a continuous need in organisations to adapt to the changing business conditions and improve their value offerings for customers which enhance the customer experience. The following interview transcript highlights the importance of adapting to the changing market conditions:

“...market is changing very rapidly and so is the competition. To retain customers and giving them a good experience, we need to adopt and change accordingly. We need to adopt new technologies and new ideas for keeping us competitive in market...” [INT7/M4/I-2]

Business Model

The business model is about planning the successful operations for an organisation by identifying the key sources of revenue, addressing the target customer base, and planning the financials of the products and services. It focuses on (a) the internal resources to create optimal product and services for the customers and (b) the delivery of the products and services to the customers. An analysis of interview data presents various factors abstracted from the business model theme, which interviewees believe can have a positive impact towards improving the customer experience. The business model is derived from three basic themes including (a) effective costing model, (b) dynamic pricing model, and (c) geographical expansion.

The costing model is about the aggregated expenses organisations incur for creating and delivering the product and services to the customers. It is widely believed by the experts that reducing cost triggers competitive advantages for an organisation and creates a unique position in the customer's perception. An analysis of the interview data reveals that the cost is directly correlated with the price of the products and services, which makes the cost a critical determinant for improving customer experience. The following interview transcript presents the significance of having an effective costing model on customer experience:

“...making the cost of product and services competitive and flexible by optimising various cost factors, for example licencing cost, infrastructure cost, bandwidth cost, device cost, vendor and 3rd-party cost, and several internal costs as well such as resource, operations, support cost...drives the overall reduction of cost of product...which benefits the end customer who is consuming it...” [INT1/M1/I-1]

The pricing model is related to the cost that is incurred by the customers to avail themselves of the products and services. Interviewees highlight that customers are highly price sensitive and are only willing to pay for what they consume. This situation triggers the redesigning of the pricing model based upon the understanding of a customer`s consumption and requirements, which is referred to as dynamic pricing by the experts. Interviewees acknowledge the responsiveness of digital transformation in creating the dynamic pricing model for improving the customer experience. Such a view of dynamic pricing models is exemplified as follows:

“...When we use digital capabilities, we create products which customers can use and pay of only of the consumption which the customer has made and not for that part which they have not used. This gives immense benefit to them...” [INT13/A3/I-1]

Geographical expansion is about elaborating the services offered by an organisation to different locations. An analysis of interview data suggests that organisations expanding their reach beyond the traditional boundaries makes customers very satisfied. It provides customers with a unique experience and enhances their experience. An interviewee, for example, states:

“...it has an ability to support customers out of its traditional boundaries...expanding out its geographical reach ...this ensures customers that they will enjoy same product and services experience without having location constraints...” [INT20/U7/I-2]

Value Proposition

Value proposition is about the benefits customers receive from the organisation's offerings. There are two aspects of these benefits, one which can be economically calculated and another that can be emotionally experienced. Interviewees unanimously agree that the value proposition has the most influential impact on customer experience. This is because (a) it can instantaneously engage a customer's attention and build instant perceptions and (b) it can trigger brand recognition and provide long-term customer loyalty. Examples of value proposition include providing better services, reducing price, improving features of products and services, and loyalty programs in organisations. Value proposition is collated from five basic themes: including (a) unique products and services, (b) continuous innovation, (c) economic value, (d) emotional value, and (e) recognitions and rewards.

Unique products and services focuses on differentiating an organisation's offerings from its competitors. Interviewees suggest that pressure from external business environment, mostly competition, compels organisations towards creating unique products and services. An analysis of the interview transcripts shows that digital transformation has enormous potential to create unique products and services, which allows an organisation to gain a unique position in a customer's perception which assists in improving their experience. The following interview transcript clearly shows the importance of unique products and services for customer experience:

"...creating unique products and services grabs customer attention and develops superior perceptions in comparison with other service providers..." [INT19/A7/I-1]

Continuous innovation is about constantly creating a new segment of products or new product features which are not available in the market. These new products or product features are related to a new invention, technical improvement, quality improvement or inclusion of new components. Interviewees believe that innovation assists in capturing positive customer perceptions that can radically enhance the customer experience. The following interview segment expresses this:

“...Digital transformation aids organisation to use digital products and exploit its highly dynamic features to innovate new products in quick succession based on specific customer requirements.....by introducing new products and service variants which are not readily available for them in the market....helps in capturing customer attention and improving their experience...” [INT16/M6/I-1]

Economic value focuses on defining the most adequate price and features structure of the products and services for the customers. Interviewees suggest that the economic value of the products and services is critical for a customer`s buying decision. An analysis of interview data presents the significance of the economic value for the improvement of the customer experience. An interviewee illustrates this as follows:

“...with so many avenues of information available and different products to choose from, customers are very much aware of the cost and its perceived benefits...making it very essential to be competitive in the market place...using digital transformation we can develop the most cost-effective solutions for our customer ...making them satisfied...” [INT7/A4/I-1]

The emotional value is related to a customer`s feelings and emotions towards an organisation and its offerings. Digital transformation enables improved features and processes in an organisation to capture positive customer feelings, attitudes and perceptions about the organisation and its offerings. Interviewees reveal that emotional value also plays a very important role in the customer decision-making process. Experts assert that providing better emotional connect with the customer through digital transformation capabilities triggers better customer experience. An interviewee, for example, states:

“...digital transformation features make customers feel more valued, because it allows us to manage and maintain a high degree of customer understanding...providing an emotional quotient for the customers...” [INT17/A6/I-2]

Recognition and rewards are about identifying loyal customers and enabling them with appropriate benefits. Interviewees reveal that digital transformation enables organisation to analyse customer loyalty and provide customers with appropriate responses. They assert that rewarding customers who are loyal to the organisation immensely enhances the customer experience. An interviewee explains this phenomenon as follows:

“...digital transformation strengthens the loyalty management process...recognising customers’ consumption patterns and rewarding them with additional value...this attracts customers towards our offerings...making them more satisfied with our services...”
[INT12/U5/I-2]

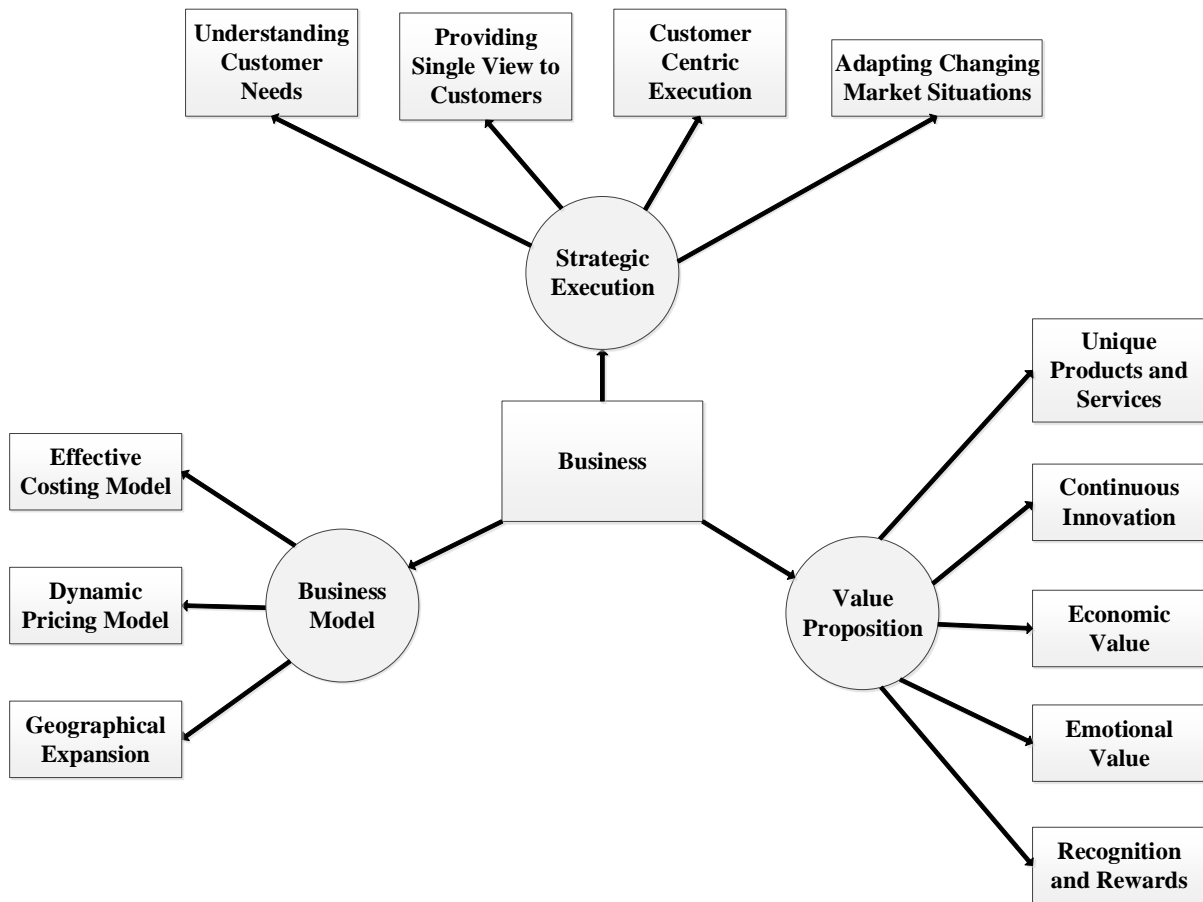


Figure 5.4 A thematic map of business theme

5.2.3 Global Theme Three: Customer

The customer is a critical global theme identified in this study. It focuses on improving the customer processes, features, functions and activities in the customer journey, towards improving their experience. An analysis of the interview data presents a descriptive picture of the various attributes of the customer journey which includes customer engagement, customer processes and customer relationship management. Interviewees concordantly assert a positive correlation between the various attributes of a customer journey and customer experience.

The customer theme is abstracted from four organising themes including (a) processes, (b) collaboration, (c) services and (d) engagement, as shown in **Figure 5.5**. **Figure 5.6** summarises each organising theme.

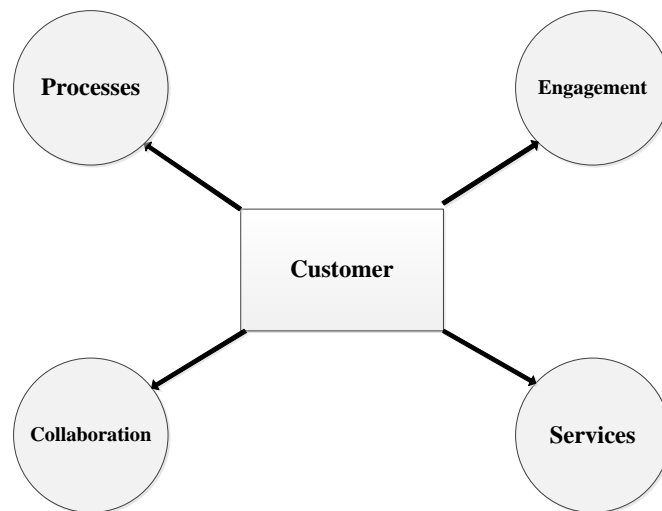


Figure 5.5 The customer theme

Processes

Customer processes are about the series of tasks and activities organisations perform using digital transformation for their customers to enhance their experience. It focuses on utilising the digital transformational capabilities to support the customer processes in the customer journey. Interviewees coherently confirm a positive influence of the customer process attributes towards the improvement of customer experience. The process theme is discovered from five basic themes including (a) process automation, (b) process optimisation, (c)

simplified customer processes, (d) process transparency and (e) coherent experience across various channels and devices.

Process automation focuses on removing the manual interventions in the customer processes by exploiting the digital transformation capabilities. Interviewees strongly believe that automation of the customer processes helps organisations to reduce processing time, improve efficiencies, diminish data loss, remove redundancies, and build coherence between the internal business functions. An analysis of the data unambiguously points a positive impact of process automation on customer experience. This is seen in one of the interview segments with a project manager as follows:

“....Digital transformation makes an organisation to move all its physical process into digital processes.... to achieve complete digitalization. This leads to greater customer satisfaction...” [INT16/M6/I-1]

Process optimisation is about improving the overall performance of the customer processes by utilising all the desired factors and removing the undesired factors, by utilising digital transformational capabilities. According to the interviewees, this can directly impact the cost, time and quality of the products and services for the customers. This impact improves the customer value offerings and subsequently enhances the customer experience. The impact of process optimisation on customer experience is seen in the following interview transcript:

“.....Digital transformation helps the operational processes to become more mature and smooth.... It facilitates to optimise the operational processes which impact the cost and

outcome of production....and hence improves the customer offering and experience.....”

[INT4/A1/I-2]

Simplified customer processes are about providing customers with easy, quick and efficient processes in the customer journey. Interviewees suggest that digital transformation assists in simplifying the customer processes by reducing unnecessary information, removing confusing customer processes, and enabling simple decisions for customers. They agree that simplifying the customer processes makes it very attractive for the customers, which helps increase the customer experience. An interview highlights this as follows:

“...Usability of the product and the process to use the product for customers is one of the key focuses while undergoing digital transformation... we want the customer journey to be very simple... Digital transformation provides with this capability to makes things very simple for customer and hides all the complexities behind the scene... This helps immensely in improving the customer experience...” [INT14/A4/I-1]

Process transparency focuses on empowering customers with knowledge of their engagement with an organisation. It ensures that the customers are informed of all the important instances in the customer journey. Interviewees explain that digital transformation provides a collaborative environment for both customers and organisations, where information is shared instantaneously. An analysis of the interviews reveals that customers expect to be informed of all the instances to take informed decisions. This builds trust and triggers customer experience improvement. The following interview transcript clearly shows the impact of process transparency on customer experience improvement as follows:

“...making customers aware of the products, and services and its conditions.....improve customer experience...it avoid misleading customers with non-relevant or technical jargon or incorrect information ...to maintain a positive relationship...” [INT3/M3/I-1]

Coherent experience is about providing a unique experience to the customers across different digital channels and devices. An analysis of interview data shows that disjointed and non-coherent processes creates confusion for the customers, which degrades their experience. Interviewees emphasise integrating the information across an organisation for providing a coherent experience for customers. Inducing coherence across channels makes customers more attached towards the organisation, which helps in building reliability, enhancing customer experience. An interview states the following on this point:

“...The biggest reason why we need to build the same user experience for cross channel is because customers use many channels to interact. Giving a different look for different originations might give a negative impact on customer perception towards products and services. Therefore, it is important to manage cross-channel coherence....” [INT8/U2/I-2]

Collaboration

Collaboration is about a group of processes and features in which an organisation conjointly interacts with the customers for improving the customer experience. It focuses on managing customer perceptions and incorporating suggestions and inputs from the customers about the products and services towards improving the value offerings. Collaboration includes various features such as interacting with customers through digital channels, capturing customer suggestions and concerns using digital platform, and updating customers on real-time basis.

Interviewees highlight that this collaborative approach by organisations makes customers feel satisfied and triggers customer experience improvement. Collaboration is abstracted from three basic themes including (a) customer feedback, (b) customer communication and (c) customer training.

Customer feedback is a process where customers share their opinions, experiences, expectations and perceptions about the organisation's offerings. Organisations, through digital platforms, capture these inputs from the customers towards improving the features of the offerings. Interviewees believe that such a practice ensures building positive perceptions in a customer's mind about the organisation and its offering, which significantly improves the customer experience. An interviewee, for example, states:

“...improving customer experience requires a lot of customer understanding. This is performed by taking feedback from customers using digital channels about what the customer wants....” [INT7/M4/I-2]

Customer communication covers all the instances in the customer journey where customers receive updates from an organisation on any given events, conditions, situations and circumstances. Interviewees illustrate that digital transformation enables organisations with capabilities such as real-time messaging, forums, web services, and social media, to keep customers informed always. According to the experts, such effective communications lead to maximizing the customer engagement and improving customer satisfaction. This is reflected in the following interview segment:

“...customer likes to be informed and communicated with relevant information using both direct and indirect interaction...such as publishing on social media or directly notifying from mobile applications...” [INT10/M5/I-2]

Customer training is about making customers aware of the changes caused due to digital transformation for keeping the customer experience intact. It focuses on making customers aware about the changes in the products and services, their features, and usability. Interviewees widely accept the positive effect of customer training and awareness on the customer experience. This is demonstrated in the opinion of one of the interviewees as follows:

“...It’s about how do we make our customers aware of what changes we have made..... Customer awareness directly affects the outcome of digital transformation project and helps improve customer experience....” [INT11/U4/I-2]

Services

Customer services are related to the set of tangible values an organisation offers to its customers in the customer journey. It focuses on fulfilling the needs of the customer throughout the lifecycle of the organisation and customer relationship. Customer services include all the features and values customers receive from an organisation for their consumption of the products and services. Experts positively advocate that enhancing the service capabilities by exploiting digital transformation triggers customer satisfaction and loyalty, which leads to incremental improvement in the customer experience. Services are extracted from five basic themes including (a) 24x7 real time services, (b) personalised

services, (c) self-service, (d) service response time, and (e) improvement in knowledge management.

24x7 real-time service is about providing customers with an ability to connect anytime with the organisations, using various digital channels, with requests, queries and problems. It consists of several features such as real-time monitoring, live chat support, and real-time updates and notification. Such capabilities, which empower the customers to connect with the organisations at their convenience, help organisations to better capture the customer experience. An interview explains as follows:

“..... Customer feels a lot of confidence when they get a service guarantee of 24x7 by the organisation... Digital transformation helps organisation to provide customers with 24x7 support... irrespective of customer location, organisations with limited number of support staff can service geographically dispersed customers for improving their service experience....” [INT12/U5/I-2]

Personalised services focuses on delivering customised services to customers based on their individual preferences and behaviours. An analysis of the interview data suggests that personalised customer services ensure that organisations encapsulate various customer characteristics, including social behaviours, communication preferences, insights, intents, demographics and content, in their customer services. Interviewees suggest that customers are demanding more tailor-made solutions and services based on their specific requirements. This makes it critical for the organisations to cater to customers’ specific needs and fulfil

their expectations. This can be clearly visible in the following segment of interview transcript:

“...Personalised services give customers confidence in the product that they are using making the relation between provider and consumer better....” [INT11/U4/I-1]

Customer self-service allows customers to access information and perform basic activities without the support of customer service representatives. This induces the reduction of the costs in maintaining the contact centres and infrastructure, which eventually enhances the economic value for the customers. The majority of the interviewees admit that customer self-services bring in many benefits for customers including ease of service, on demand service, time reduction, and prevention of the critical information leakage risks, which enables organisations to better capture customer experience. A customer experience expert illustrates the importance of inculcating self-service in an organisation as follows:

“...customer self-service triggers three important elements of customer experience, it empowers customers, it gives customers flexibility, and it provides on-demand interaction...”

[INT13/A3/I-1]

Service response time is described by the experts as the elapsed time between the customer's service request and its corresponding response time. It consists of (a) the customer support response time and (b) the system response time. Interviewees coherently agree that service response time plays a significant role in retaining customers. They suggest that it is an important detriment to improving customer experience in organisations. The following

excerpt from an interview clearly highlights the importance of the response time for customer experience:

“...Service response time directly impacts the quality of customer processes and NPS (net promoter score)...quick response time ensures that the process time is brought down and quality is enhanced...” [INT16/M6/I-1]

Improvement in knowledge management is about the utilisation of information on the customers generated and exploited through digital transformation for better serving the customers. It focuses on providing greater consistencies, increasing resolution rates, answering faster and more accurately, and lowering the training cost. Experts suggest that, by including centralised knowledge management and ensuring its availability across various digital channels, this ensures a positive impact on the customer experience. An interviewee states:

“...Digital transformation provides an immensely effective platform to create and share knowledge for serving customers... it helps in solving customer issues and problems quickly and even sharing the resolution through digital channels...” [INT15A5/I-2]

Engagement

Engagement is an approach in which organisations engage with their customers in order to acquire them. It focuses on utilising the digital transformation capabilities to understand the customers and their needs, and to reach out to them with most appropriate offerings. Experts assert that customers feel valued when organisations reach out to them with the most

appropriate information that they want to consume. They also reveal that this focused approach by an organisation helps them to better capture customer experience. The engagement theme is extracted from three basic themes including (a) personalised marketing, (b) proactive engagement, and (c) integration of the offline and online channels.

Personalised marketing is an approach where an organisation focuses on the consumption patterns of the customers for delivering a highly customised marketing approach. An analysis of the interview data highlights various personalised marketing approaches which organisations use to capture customer attention, including Internet marketing, direct email campaigns, social media marketing, blogs and mobile applications. It is widely believed by the experts that personalised marketing makes customers less confused and assists them in quick decision making. This is explained in the following interview transcript:

“...Personalise marketing helps customers to make smarter decisions for organisations and also impacts their perception towards organisation.....raising customer satisfaction....”

[INT12/U5/I-2]

Proactive engagement is described by the interviewees as an attempt by the organisations to proactively engage with their customers. This approach is the opposite of the traditional reactive approach where organisations respond to the customer-driven events. Interviewees highlight various events when proactive engagement is driven by the organisations, including to educate, notify, collect, survey, remind, and react. They unanimously assert that driving proactive measures for customer engagement reduces time to service, provides uninterrupted

customer service, and maximises productivity, which immensely enhances the customer experience. An interviewee presents this in an interview transcript as follows:

“...connecting with customers proactively creates a big impact in their experience.... It includes proactively monitoring their service behaviour, providing push notifications through applications, and even reminding them of new offers or deadlines for payments...”

[INT13/A3/I-1]

Integration of the offline and online channels provides customers with encounters with a single experience across all physical and digital engagements with the organisation. Interviewees emphasize integrating the physical channels such as retailers, kiosks, and IVRs, and digital channels such as website, mobile, social media, digital marketing and emails, for making the experience unique for the customers. It is widely believed by the interviewees that integrating online and offline channels improves customer experience. This is clearly visible in an experience of a support specialist as follows:

“...customers today engage using many channels which includes web, mobile apps, and retails....having coherent experience across these channels ...enhances brand consistency...it gives customers familiarity and provides confidence in the engagement...digital technologies help us to build this coherence...” [INT8/U2/I-1]

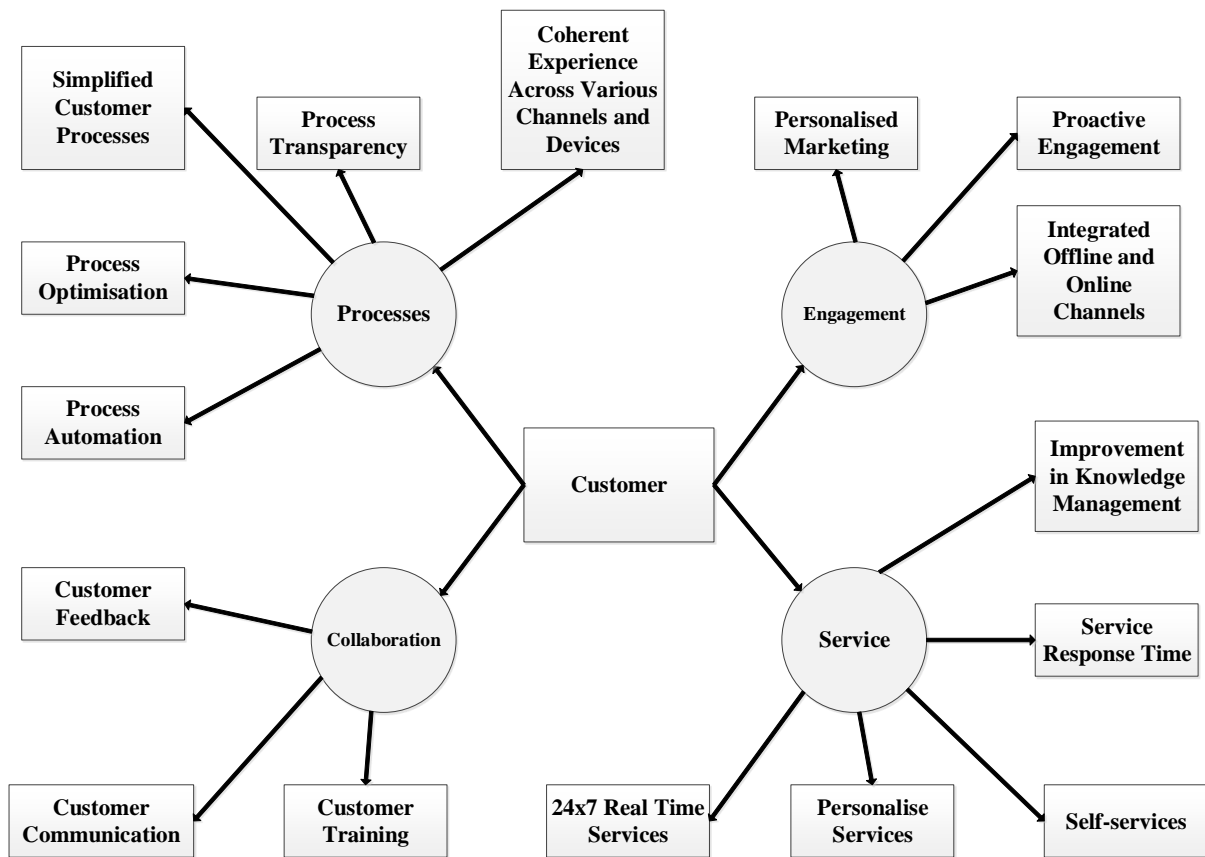


Figure 5.6 A thematic map of customer theme

5.2.4 Global Theme Four: Digitalization

Digitalization is a global theme identified in this study. It reflects the utilisation of the capabilities generated by digital technologies to generate better features, functions and processes for improving customer services in organisations. An analysis of the interview data reveals that digitalization assists organisations to improve processing capacities, enable better technology integration, and enhance usability. Digitalization is abstracted from three

organising themes, as presented in **Figure 5.7** including (a) integration, (b) capacities and (c) capabilities. **Figure 5.8** summarises each organising theme.

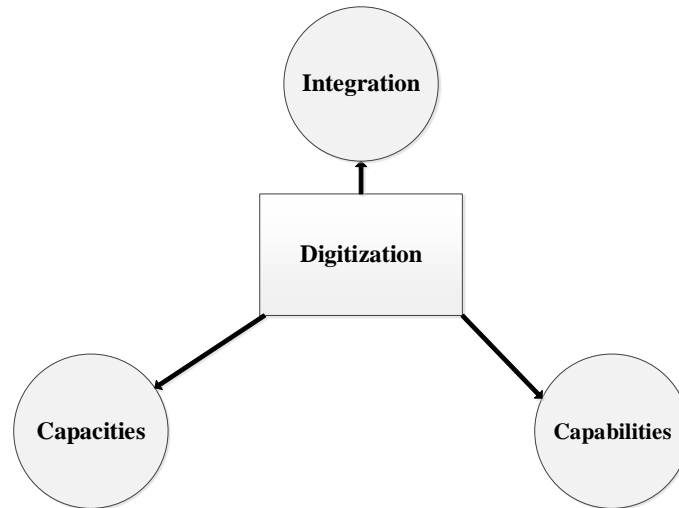


Figure 5.7 The digital theme

Integration

Integration refers to the incorporation of the digital technologies in the organisation`s existing infrastructure. Interviewees reveal that organisations, in order to generate specific capabilities, adopt single or multiple digital technologies based on their motivation for digital transformation. Such an integration includes incorporating digital technologies such as social media, web technologies, data analytics software, mobile technologies and internet of things in an organisation. An analysis of the interview data discloses a positive impact of digital integration on customer experience. Digital integration is discovered from three basic themes

including (a) digital enterprise integration, (b) third party integration and (c) social media integration.

Digital enterprise integration is about the collaboration of digital technologies with other existing enterprise technologies within an organisation for supporting the customer processes. It focuses on the data communication and automation between organisation`s legacy and other dependent enterprise systems with digital technologies. Such integration brings in various benefits such as improved visibility, enhanced agility and efficient customer processes, which trigger the enhancement of the customer experience in organisations. The following interview transcript by a digital technology specialist highlights the importance of digital integration:

“...it is very critical for organisation to integrate digital products and technologies with existing non-digital or other enterprise technologies..... This will support the processes and make sure that all customer-related processes are of high quality....” [INT9/U3/I-1]

Third-party integration is about the unification of the digital products and services provided by the third parties, vendors and partners with organisation`s products and services. An analysis of interview data highlights that it is very significant for organisations to integrate the third-party services such as cloud services, analytics services, or digital services, for providing a unique and seamless experience to the customers. This is clearly illustrated in the following segment of the interview transcript:

“...To create a single view of all the customers processes, we need to integrate all the outsourced, 3rd-party and vendor processes and technologies with our digital systems and

processes... to provide our customers with various organisation-specific branded services....this improves the range of services and enhances customer experience...”

[INT5/A2/I-1]

Social media integration is related to the consolidation of the customer-specific social forums, applications and platforms with the organisation`s technological environment. It is a critical source for capturing the customer data and triggering data analytics for improving customer collaboration. Interviewees believe that integrating social media in customer processes and features enables the building of new capabilities which enhance the customer experience. An interviewee states:

“We know our customers use a lot of social media platforms to share a view, or issue and seek information using these forums.....integrating social media provides a very effective way to understand customers and resolve their queries...customers feel empowered when their problem is solved using their own preferred medium...” [INT21/U8/I-2]

Capabilities

Capabilities refers to the ability of the digital technologies to support the customer processes and functionalities towards improving the customer experience in organisations. Interviewees highlight that digital capabilities support the customer journey in an organisation, which directly impacts the customer experience. The capabilities theme is abstracted from five basic themes including (a) multiple digital channels, (b) platform- and device-independent digital services, (c) high quality digital content, (d) usability and (e) data security and reliability.

Multiple digital channels are related to the abilities of an organisation to utilise the digital transformation capabilities to introduce numerous digital channels such as web, mobile, social media and cloud-based channels for the customers. Interviewees state that, by enabling multiple digital channels, customers feel empowered as they get multiple options to use and interact with the organisation based on their preferences. An interviewee states:

“...creating multiple digital interaction channels provides customers with a lot of flexibility...where they can initiate a process in one channel and end the process in another...this facility to use any functions using any channel of his or her choice makes the customers feel happy ...” [INT15/A5/I-2]

Platform and device-independent services are about the freedom customers obtain in using any devices or platforms to access an organisation`s products and service offerings without any constraints. Interviewees mention that the customer seeks to consume the products and services based on their choices of device or platform. An analysis of the interview data reveals that, when the customer has no constraint on the usability of an organisation`s offering, their experience is boosted positively. This is clearly visible in the following interview transcript:

“...It gives independence to customers to choose and use any device of their choice without compromising on the quality of content or services....keeping their experience uninterrupted....” [INT9/U3/I-1]

Digital contents are the set of features and information that are available to the customers in various digital channels. It focuses on the customer-friendly designs of the digital content,

and consistent and uninterrupted digital content for the customers. Interviewees collectively assert that high quality digital content is directly co-related with a high level of customer experience. An interview highlights the relationship between digital content and customer experience as follows:

“...digital content is one of the biggest show stoppers in digital services....it is the first thing that attracts customers...thus making it very important for organisations to create and deliver high quality content...as this can directly and quickly impact the overall customer`s perception...towards the products or services....” [INT8/U2/I-2]

Usability focuses on the ease of using the products, features, functionalities and processes by the customers when they interact with an organisation. Interviewees believe that it is very important to couple the high quality digital content with the usability of the content. An analysis of the interview transcripts highlights that an organisation that focuses on providing high usability to the customers successfully enhances their physical and emotional satisfaction. An interviewee highlights this as follows:

“...customers get annoyed when they deal with complex functions which are difficult to navigate and over information which is irrelevant to them...” [INT11/U4/I-1]

Data security and reliability allows customers to access and share their critical information through various digital channels safely. It focuses on providing secure, reliable and risk-free features, processes and functions to the customers. Better data security and reliability allows organisations to exceed customer expectation and enhance experience. This is highlighted in the interview transcript as follows:

“...a lot of critical customer data are shared between in-house and third-party applications ...making customers concerned about their personal and financial data being exposed...leaked or used improperly...ensuring a high level of data security in digital platforms ...gives customer confidence in using the products and services through these digital platforms...” [INT20/U7/I-2]

Capacities

Capacities focuses on maximising the digital technologies’ output level to ensure that the customer processes, feature and functions they support remain uninterrupted. Experts suggest that digital transformation relies heavily on the potential of the digital technologies for supporting the process, features and functions of customer interactions. As a result, capabilities plays a key role in managing the customer experience in organisations. Capacities are accumulated from four basic themes including (a) system capacity, (b) processing capacity, (c) performance and speed and (d) availability.

System capacity focuses on the ability of digital technologies for effectively managing the customer data and integrating the data with other systems in an organisation. Interviewees acknowledge the role of system capacity to manage large customer data and to support customer analytics in digital transformation. An analysis of the interview data demonstrates the importance of the system capacity towards improving customer experience. Such a view is exemplified in an interview transcript as follows:

“...unless there is a system which supports various analytics, and digital functionalities, organisations cannot service their customer better...” [INT9/U3/I-1]

Processing capacity provides organisations with an ability to process large and complex customer-related information with high speed and accuracy. The study reveals that slow and inaccurate processing leads to degradation of the customer experience. It is widely believed by the experts that having a high degree of processing capacity would trigger better and more accurate decision making and improve customer processes, improving customer experience. An interviewee explains:

“...Ability to process large and complex data effectively and quickly helps to improve the customer understanding processes... Having an effective data processing capacity in place helps in improving the customer experience....” [INT12/U5/I-1]

Performance and speed are related to the system response time which supports customer processes, features and functions in an organisation. The interview results reveal that lack of performance and speed degrades customer experiences significantly. Interviewees stress that it is very critical for organisations to meet the customer’s expectations regarding the speed and performance of the products and services for better managing customer experience. This is clearly illustrated in the following transcript:

“...any lag while accessing the digital content or any other services degrades the customer experience ...” [INT1/M1/I-2]

Availability is about the probability of the overutilization of the processes and systems that support the customer engagement in an organisation. Interviewees emphasize the criticality of maintaining the services as available all the time for maintaining the customer expectation.

They reveal that system downtime degrades the customer experience. An interviewee explains the significance of system availability for the customer experience as follows:

“...in this highly competitive environment.....customers expect the service provider to make sure that the services are available always without any downtime....which can degrade their experience...” [INT5/A2/I-2]

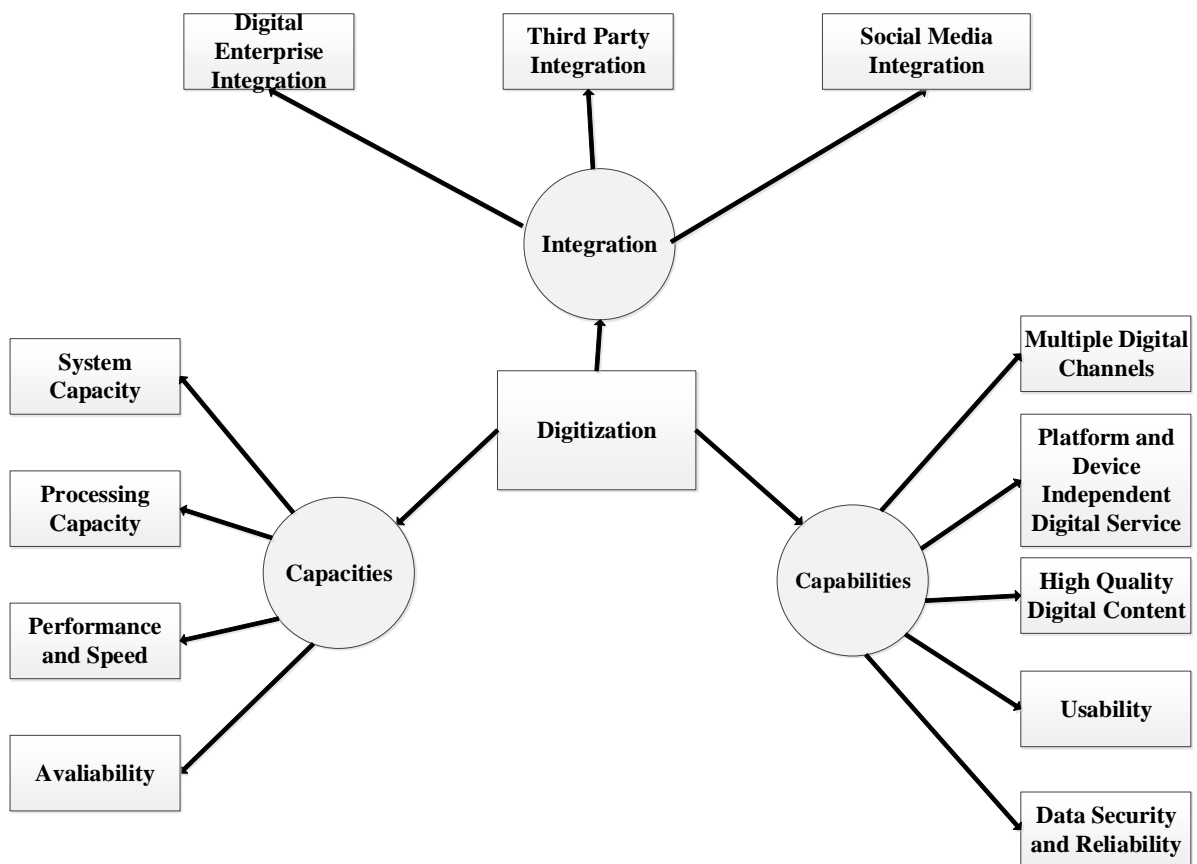


Figure 5.8 A thematic map of digital theme

5.3 A Revised ABCD Framework

The revised ABCD framework consists of four dimensions including (a) analytics, (b) business, (c) customer, and (d) digitalization. It includes various sub-dimensions under each dimension, which can impact the effectiveness of digital transformation for improving the customer experience in an organisation. The analytics dimension can be effectively influenced by three sub-dimensions including (a) data analytics, (b) customer trend analytics and (c) process analytics. The business dimension is affected by three sub-dimensions including (a) strategic execution, (b) business model and (c) value proposition. The customer dimension is derived by the effectiveness of four sub-dimensions including (a) process, (b) collaboration, (c) services and (d) engagement. Finally, the digital dimension is reflected through three sub-dimensions including (a) integration, (b) capacities and (c) capabilities. **Table 5.1** presents the list of critical success factors.

The sub-dimensions in the framework contain various critical success factors that are extracted from the analysis of the interview data. The analysis of the interview data suggests that these factors can have a direct impact on the effectiveness of digital transformation for improving customer experience in organisations. Each of the critical success factors identified in the study represents its own unique characteristics and significance. The study also reveals the criticality of each of these factors from the expert's point of view. This criticality of the factors ranges over three degrees, high, medium and low, and are calculated based on the weighted average method. **Appendix H** presents the summary of the criticality of the critical success factors. **Appendix I** summarises the updated ABCD framework.

Table 5.1 A summary of ABCD framework

Dimension	Sub Dimensions	Critical Success Factors
Analytics	Data Analytics	Data management, data modelling, real-time data processing
	Trend Analytics	Analytics based segmentation, improved insights, customer engagement patterns
	Process Analytics	Forecasting analysis, predictive marketing and service, real-time customer information, real-time decision making, capacity utilisation
Business	Strategic Execution	Understanding customer needs, providing single view of customers, enabling customer-centric execution, adapting to 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 channels and devices
	Collaboration	Feedback, communication, training
	Service	24x7 real-time service, personalise service, self-service, service response time, improving knowledge management
	Engagement	Personalised marketing, Proactive engagement, Integrated offline and online channels
Digitalization	Integration	Digital enterprise integration, Integration with 3rd party, Integration with social media
	Capabilities	Multiple digital channels, platform and device independent services, high quality digital content, usability, data security and reliability
	Capacities	System capacity, processing capacity, performance and speed, availability

5.4 Concluding Remarks

This chapter aimed to investigate the critical success factors of digital transformation for improving customer experience in organisations, by analysing the qualitative data using thematic analysis. The study reveals that data analytics, process analytics, and trend analytics, are critical sub-dimensions of the customer analytics dimension, which consist of various critical success factors that impact the effectiveness of digital transformation for improving customer experience. The strategic execution, business model, and value proposition are critical sub-dimensions of the business dimension, which aggregate from various critical success factors of digital transformation for improving customer experience. The customer engagement, processes, collaboration, and service are critical sub-dimensions of the customer dimension, composed of various critical success factors that impact the effectiveness of digital transformation for improving customer experience in organisations. The integration, capabilities, and capacities of digital technologies are critical sub-dimensions of the digitalization dimension, which form from the various critical success factors that impact the effectiveness of digital transformation for improving customer experience in organisation. Finally, the chapter presented the updated ABCD framework with various critical success factors.

Chapter 6

Conclusion

6.1 Introduction

The present research aims to investigate the critical success factors of digital transformation for improving customer experience in organisations. To fulfil this aim of the research, a primary research question has been developed as follows:

- *What are the critical success factors that influence the effectiveness of digital transformation to improve the customer experience?*

To adequately answer the research question, a qualitative research methodology is adopted. A conceptual framework is developed based on the analysis of a literature review and referring to the dynamic capability theory. Using semi-structured interviews with experts, data are collected. Three rounds of Delphi technique are performed to generate, refine, and validate the critical success factors. Thematic analysis is used to perform the data analysis. This leads to the identification of the critical success factors of digital transformation for improving customer experience in organisations.

This chapter aims to presents a summary of the research. To achieve this aim, this chapter is organised into four sections. Section 6.2 presents the overview of key findings of this study. Section 6.3 discusses the contributions and the implications of this study. Finally, Section 6.4 highlights the limitations of the research and discusses the opportunities for future research in the related areas.

6.2 An Overview of the Research Findings

The research develops a conceptual framework for investigating the critical success factors of digital transformation for improving customer experience in organisations. The framework consists of four dimensions including (a) analytics, (b) business, (c) customer, and (d) digitalization. The framework is further revised by a set of critical success factors for each of the dimensions which can impact the effectiveness of digital transformation towards improving customer experience in organisations.

The first dimension of the framework is the analytics dimension which focuses on the systematic analysis of the customer-related information for evaluating the customer behaviours. The study reveals that digital transformation provides organisations with analytics capabilities for better understanding customer behaviour, market trends and customer engagement, which triggers the improvement in customer experience. Such capabilities are defined by establishing better data analytics functions, incorporating customer trend analytics in business decisions, and implementing effective process analytics features.

The study reveals that data analytics is established by efficient data management, effective data understanding, and integrated real-time processing of the customer data. It advocates that the ability to provide better data analytics helps organisations to discover useful information and take better decisions for customers which enhance customer experience.

Trend analytics is induced in organisations through providing critical insights about customers, segmenting customers based on their behaviour, and analysing customer

engagement patterns. Such knowledge about customers plays a critical role in enhancing the performance of digital transformation initiatives for improving the customer experience.

The study highlights process analytics as a critical capability of digital transformation for providing better customer experience. This is due to its ability to provide better customer forecasting analysis, enable predictive marketing and services for organisations, integrate real-time information for the customers, trigger real-time decisions, and equip organisations' capacity utilisation analytics.

The second dimension of the framework is the business dimension, which showcases an organisation's ability to effectively respond to the changes in the internal and external business conditions. Such a dimension is reflected by the effectiveness of managing strategic execution, creating effective business models, and offering superior customer value.

Strategic execution plays a crucial role in enhancing the customer experience in digital transformation. It is about planning the implementation of digital transformation in organisations, providing tactical solutions for the strategic plans, and enabling customer-centric solutions. Strategic execution is reflected through understanding customer needs, providing a single view on customers, enabling customer-centric execution, and adapting to changing market situations.

The business model reflects an organisation`s motivation to deliver better products and services, which captures better customer satisfaction, triggering enhanced customer experience. Such an ability is generated through developing effective costing models, enabling dynamic pricing structures, and expanding geographical boundaries for the customers.

The study reveals that the customer value proposition has abilities for creating competitive advantages for the organisations, providing brand loyalty, and capturing customer satisfaction. Such capabilities can be developed through creating unique products and services, innovating new products and services, offering better economic and emotional value to the customers, and integrating recognitions and rewards for the customers.

The third dimension of the framework is the customer dimension, which consists of various capabilities provided by digital transformation which are related to customer processes, features, functions, and activities in the customer journey. Such capabilities are reflected by optimised customer processes, increased customer collaboration, enhanced customer services, and better customer engagement.

The study highlights that digital transformation has an ability to induce simplicity, transparencies and efficiencies in the customer processes, which enables organisations to capture a positive customer experience. This suggests that the effectiveness of customer processes is reflected by automation of the processes, reduction in the operational cost,

simplified customer processes, process transparencies, and coherent customer experience across various channels and devices.

Customer collaboration focuses on the interaction between customers and organisations for capturing a customer`s perceptions, suggestions, and inputs about the products and services. The study reveals that customer collaboration can be achieved through integrating customer feedback, engaging in interactive communication with customers, and conducting training for customers.

The study suggests that digital transformation provides organisations with various capabilities that help organisations to enhance their customer services, enabling better customer experience. Such capabilities are supported through 24x7 real-time servicing, personalised service, self-service, service response time, and knowledge management improvement.

The study asserts that a customer feels valued by better customer engagement which triggers positive customer experience. The customer engagement is backed by detailed customer knowledge which helps organisations to focus on specific customer needs and requirements. Customer engagement is established by personalised marketing, proactive engagement, and integrated offline and online channels.

The fourth dimension of the framework is the digitalization dimension, which focuses on the key characteristics of digital technologies that are exploited by organisations for executing

digital transformation. Such characteristics are reflected by the integration, capacities, and capabilities of digital technologies in organisations for implementing digital transformation.

The study reveals that effective digital integration has an ability to enhance the functions, technological infrastructure, and processes for supporting customer interactions, which improves customer experience. Such ability is derived from better digital enterprise integration, integration with third-party services, and social media integration.

Digital capabilities are about providing new features and functionalities to the customers. This is reflected through the ability of digital technologies to provide multiple digital channels, platform- and device-independent digital service, high quality digital content, better usability, and data securities and reliabilities.

The study emphasises that digital capacities have a potential to impact the customer experience by enabling technological sustainability for uninterrupted customer services. Such abilities can be developed through enhanced system capacities for handling large volumes of customer data, increased processes capacities for processing high speed customer data, improved service speed and performance, and uninterrupted system availability for the customers.

6.3 Contributions and Implications

This research contributes to the field of digital transformation research from both theoretical and practical perspectives. From the theoretical perspective, this research makes a significant contribution to the existing research related to digital transformation by developing a theoretical framework for investigating the critical success factors of digital transformation for improving customer experience. The framework is the first in investigating the critical success factors of digital transformation for improving customer experience by considering various internal organisational perspectives. It is the first approach to investigate such a phenomenon by capturing the belief of the experts executing the program in the organisations. Such a framework would be greatly useful for organisations that are planning or are in the early stages of implementing digital transformation.

The research further contributes to the literature on digital transformation in the use of the dynamic capability theory and the qualitative Delphi technique towards the investigation of critical success factors. The adoption of the dynamic capability theory induces the understanding of various digital transformation capabilities which can influence customer experience in organisations. The usability of the Delphi technique provides insights towards formulating the research questions, collecting the qualitative data, and analysing the data in multiple iterations to fulfil the research objectives. This research presents a valuable example of the applicability of the dynamic capability theory and the Delphi technique in the investigation of such a research phenomenon for obtaining a comprehensive understanding.

From the practical perspective, this research provides a comprehensive investigation of critical success factors of digital transformation for improving customer experience in an Australian organisation. Such findings would be greatly helpful for senior managers and executives in understanding the critical success factors and implementing such initiatives effectively in organisations. It would help organisations to further improve the performance of such programs by effectively strategizing an appropriate plan and execution to undertake such projects. Moreover, this study would be helpful for organisations to mitigate the risk of failure and realise potential benefits from effective implementation.

The implications of the research study trigger some specific recommendations for senior managers and executives for implementing digital transformation towards improving the customer experience in organisations. The study reveals that strong analytics capabilities, adaptability towards dynamic business conditions, customer-focused processes and features, and high degree of digital capabilities for supporting customer processes and features, are critical for implementing digital transformation towards improving the customer experience in organisations.

The analytics capabilities are captured through strong data analytics, evaluating customer trend analytics, and enabling process analytics. Such analytics capabilities play a key role in understanding the customers better, improving the decision-making capabilities, and enhancing the customer experience. Therefore, senior managers and executives are recommended to (a) focus on realising strong data analytics capabilities by efficient data management, effective data modelling, and real-time data processing towards improving the customer experience in organisations, (b) exploit customer analytics through generating

knowledge of the key customer trends related to demographic and attitudinal behaviours and (c) induce analytics in the customer processes through customer forecasting, predictive marketing and services, real-time customer information and decision making, and capacity utilisation.

The adaptability towards dynamic internal and external business conditions is critical in managing the customer experience in organisations. This can be achieved by planning strategic execution of digital transformation effectively, building dynamic business models, and delivering better customer value propositions. It is, therefore, strongly recommended that senior leaders and strategy managers should focus on (a) executing the strategic plan by taking customer-centric decisions, fulfilling customer needs, responding to the market changes, and unifying the customer views, (b) developing the business model by keeping the operating costs low, implementing effective pricing strategies for the customers, and expanding the reach of the products and services, and (c) transforming the customer value by providing customers with unique products and services, managing continuous innovation, delivering economic and emotional value, and recognising and rewarding the customers.

The customer-focused processes and features have a significant impact on improving customer experience, which can be achieved through incorporating optimised and transparent customer processes, enhancing customer collaboration and engagement, and delivering better services to customers. It is recommended that operations managers, service managers, and other senior executives should focus on (a) achieving efficiencies in the customer processes by automating customer processes, reducing the operational cost, simplifying the customer processes, and inducing transparencies in processes, (b) developing a better collaborative

environment by providing customers with proper training on the new changes and offerings, and better customer communication, (c) improving customer services through enabling 24x7 real-time services, providing personalised services, triggering self-service, managing service response time, and improving knowledge management and (d) enhancing customer engagement by personalising their marketing efforts, proactively engaging with the customers, and integrating various offline and online channels.

A high degree of digitalization can support various customer process and features in organisations, which can ensure a positive customer experience. Such capabilities can be supported by better technology integration and building capacities and new capabilities. As a result, technology managers should focus on (a) adequately integrating digital technology with other enterprise technologies, third-party services and social media, (b) building capacities to sustain large data volumes of customer information, improving processing capacity, maintaining better performance and speed of system responses, and providing uninterrupted system availability and (c) building new digital capabilities through enabling multiple digital channels for customer interactions, providing platform- and device-independent services, delivering high quality content, improving usability, and ensuring data security and reliability.

6.4 Limitations and Future Research

Despite the significance of this study, this research possesses several limitations. Firstly, the study only investigates the critical success factors of digital transformation by focusing on a particular organisation. This creates a need for retesting and revalidating the framework in

other organisations. Such future research will develop a more reliable and generic view of the framework. It would capture new perspectives in the framework and ensure the acceptability of this framework in a generic setting.

Secondly, the research study has a limited focus on a specific industry type. Each industry has its own distinct products, processes, customer segments, and operating model. As a result, each industry will have its own distinct motivation towards implementing digital transformation. A worthwhile future research could focus on upgrading the framework with new perspectives which consider various other aspects that are applicable to other industries. Such a study will assess the generalizability of the framework.

Thirdly, the study has a constrained focus just on the internal organisation's perspective towards the investigation of the critical success factors. The framework used in this study lacks in considering the end customer's perspectives. Such consideration of capturing end customer perspectives is very pertinent in providing comprehensiveness to the framework. This triggers a need for future research in the area.

Fourthly, the study lacks consideration of other stakeholders who do not have direct involvement in implementing digital transformation. These stakeholders have different constraints, motivations, needs and expectations for digital transformation. Therefore, such stakeholder perspectives are critical in defining the comprehensiveness of the framework. Future research should consider this for better presenting the framework.

Finally, the framework only considers the qualitative data analysis for investigating this research from an exploratory perspective. For more accurate results and deeper understanding of the relationship between the critical success factors, a quantitative study in addition to the findings from qualitative study would be better suited. A quantitative study would allow this research to further establish, confirm, and validate new findings. It would enable building relationships which lead to developing comprehensive generalisations. Future research should consider measuring this phenomenon using confirmatory research.

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Appendices

Appendix A

Iteration One – Interview Questions

1. Can you provide give a brief about your background and highlight your experience in digital transformation initiatives?
2. What according to you are the key components of digital transformation?
3. Based on your experience, can you describe the impact of digital transformation on customer experience?
4. Can you explain the process of digital transformation for improving customer experience? And elaborate on the most significant aspect of the process which can impact such initiatives?
5. What are the most critical factors in an organisation which can impact the successful execution of digital transformation?
6. What according are the key components of customer analytics for digital transformation? How does it impact the customer experience? What are the most critical factors of customer analytics that can improve customer experience?
7. According to you, how does business affects customer experience in digital transformation? What are the most critical factors of business aspects of digital transformation which can improve customer experience?
8. What are the key customers related processes, activities, and tasks which are changed by digital transformation and which can assist organisation in improving customer experience? What are the key factors related to customer process, activities, and functionality that can impact customer experience in digital transformation?
9. How can people`s skills, ability, and knowledge can impact the effectiveness of digital transformation in your organisation?
10. How can digital technology impact digital transformation? What are its key attributes? How does digital technology can improve customer experience? What are its most critical factors for improving customer experience?
11. In your view what are the top most critical emerging issue which organisations face in executing digital transformation?
12. What challenges organisation faces while undergoing digital transformation?

Appendix B

Iteration Two – Interview Questions

1. Can you please highlight the key attributes of data analytics which can impact the improvement of customer experience? What are the critical success factors that could affect data analytics for improving customer experience?
2. How process analytics can impact the improvement of customer experience? What are the critical success factors that could affect process analytics for improving customer experience?
3. What is the relation between trends analytics and improvement of customer experience through digital transformation? What are the critical success factors that could affect trends analytics for improving customer experience?
4. What are the key components of business model? How is it transformed through digital transformation for improving customer experience? What are the critical success factors that could affect business model for improving customer experience?
5. What is the list of strategic activities for digital transformation which could impact the customer experience? What are the most critical factors within these activities which can assist organisation in improving customer experience?
6. What are the key components of customer value proposition which can impact the effectiveness of digital transformation for improving customer experience? How can organisation define customer value proposition and how can it impact customer experience? What are the most critical success factors of customer value proposition that can enable organisation to improve customer experience using digital transformational capabilities?
7. Can you please elaborate on the process, activities, and applications that are impacted by digital transformation for improving customer experience?
8. How does customer processes are transformed by digital transformation? How does it impact the customer experience? What are the critical success factors of digital transformation for changing customer processes for improving customer experience?
9. What are the key activities and functions of customer engagement? How customer engagement does is impacted by digital transformation? How does it affect customer experience? What are the critical success factors that ensure the improvement of customer experience through better customer engagement through digital transformation?
10. How digital transformation does helps organisation to improve its customer services? What are the key components of customer services? What are different types of customer services features which can be impacted by digital transformation? How does improved customer service can ensure improvement of customer experience? What are the critical success factors of customer services that can improve customer service in digital transformation?

11. How does digital transformation impacts customer collaboration for improving customer experience? What are the most critical factors that can impact customer collaboration for improving customer experience?
12. How does digital technology assist organisation to execute digital transformation?
13. Can you elaborate on the process and activities for digital technology integration? How does it impact customer experience? What are the critical success factors that can impact digital technology integration for improving customer experience?
14. How digital capability is defined? How does organisation can achieve digital capability through digital transformation? How does it can impact customer experience? What are the critical success factors of digital capability for improving customer experience?
15. How digital capacity does impacts customer experience? What are the critical success factors of digital capacity for improving customer experience?
16. Can you please rank in order the list of critical success factors discussed in this interview and which came out of the analysis of the last interview with other participants in one of the three degrees of criticality - low, medium, and high?

Appendix C

Iteration Three – Critical Success Factors

The research identifies analytics, business, customer, and digitalization as the four most important dimensions of digital transformation for improving customer experience in organisation. It also determines that each of the dimensions consists of various sub-dimensions. Analytics dimension is formed from data analytics, process analytics, and trends analytics. Business dimension consists of strategic execution, business model, and customer value proposition. Customer dimension comprises of customer process, customer engagement, customer collaboration, and customer service. And, digitalization dimension is formed from digital integration, digital capability, and digital capacity.

The research also identifies several critical success factors within each dimensions and sub-dimensions that can impact the effectiveness of digital transformation for improving customer experience in organisation. The list of the dimensions, sub-dimensions, and subsequent identified factors are listed in the table below. The list also contains the rank order for each identified factors based on the criticality captured in the research. You are requested to kindly review the list of identified critical success factors and validate the findings as per the below instructions:

- Review the list of sub-dimensions and in case you would like to elaborate more on the sub-dimensions, please revert back to this communication
- Validate the list of critical success factors within each dimensions and sub-dimensions
- If you recognise any missing critical success factors and want to update the list, please revert back to this communication
- If you feel any critical success factor is not assigned to proper dimension or sub-dimension, please revert back
- Verify the criticality (high, medium, low) of each of the identified critical success factors
- If you would like to change the criticality of the critical success factors then please revert back to this communication
- If you want more clarity or want to discuss on the findings further please revert back

Appendix C.1 – Analytics

Sub Dimension	Factors	Criticality
Data Analytics	Data management	Medium
	Data understanding	High
	Real time data processing	Medium
Process Analytics	Analytics based segmentation	High
	Improved insights	High
	Customer engagement pattern	Medium
Trends Analytics	Forecasting analysis	Low
	Predictive marketing and service	Low
	Real time customer information	High
	Real time decision making	Medium
	Capacity utilisation analytics	Low

Appendix C.2 – Business

Sub Dimension	Factors	Criticality
Strategic Execution	Understanding customer needs	High
	Providing single view to customers	Medium
	Enabling customer centric execution	Medium
	Adapting changing market situations	Low
Business Model	Effective costing model	High
	Dynamic pricing model	Medium
	Expanding geographies	Low
Value Proposition	Unique products and services	Medium
	Continuous innovation	Medium
	Economic value	High
	Emotional value	Medium
	Recognition and rewards	Low

Appendix C.3 – Customer

Sub Dimension	Factors	Criticality
Process	Process automation	Medium
	Process optimisation	Medium
	Simplified customer processes	High
	Process transparency	High
	Coherent experience across various channels and devices	Medium
Collaboration	Feedback	Low
	Communication	Medium
	Training	Low
Service	24x7 real time servicing	High
	Personalise servicing	High
	Self-servicing	High
	Service response time	Medium
	Improving knowledge management	Low
Engagement	Personalised marketing	Low
	Proactive engagement	Medium
	Integrated offline and online channels	Medium

Appendix C.4 – Digitalization

Sub Dimension	Factors	Criticality
Integration	Digital enterprise integration	High
	Integration with 3rd party	Medium
	Integration with social media	High
Capability	Multiple digital channels	High
	Platform and device independent digital services	Medium
	High quality digital content	Medium
	Usability	Medium
	Data security and reliability	Medium
Capacity	System capacity	Low
	Processing capacity	Low
	Performance and speed	Low
	Availability	High

Appendix D

A Summary of Participants

Interview Number	Participant Code	Role	Digital Transformation Experience	Iteration One (I-1)	Iteration Two (I-2)	Iteration Three (I-3)
INT 1	M1	Product manager	18 years of experience in a digital security products	X	X	X
INT 2	M2	Project manager	11 years of experience in cloud based projects	X	X	-
INT 3	M3	Program manager	16 years of experience in ICT projects	X	X	-
INT 4	A1	Business analyst	10 years of experience in managing digital solutions	X	X	X
INT 5	A2	Business analyst	7 years of experience in digital transformation projects	X	X	X
INT 6	U1	Digital developer	12 years of experience in designing and developing digital front end solutions	X	X	-
INT 7	M4	Product manager	15 years of experience in digital and enterprise projects	X	X	-
INT 8	U2	UX designer	14 years of experience in ICT and 4 years in designing UX	X	X	-
INT 9	U3	Developer	8 years of development experience for cloud based digital products	X	X	X
INT 10	M5	Project manager	12 years of experience in IT transformation projects	X	X	-
INT 11	U4	Digital expert	11 years of experience in digital technology integration and implementation	X	X	X
INT 12	U5	Technical support analyst	5 years of experience in support digital applications	X	X	X
INT 13	A3	Business analyst	7 years of experience in digital user experience projects	X	-	X
INT14	A4	Process analyst	7 years of experience in process mapping and digital analysis	X	-	-
INT 15	A5	Business analyst	10 years of experience in executing enterprise wide digital projects for web and mobile	X	X	X
INT 16	M6	Senior project manager	14 years of experience in managing system implementations and digital	X	X	X

			transformation projects			
INT 17	A6	Solution designer	12 years of overall experience and 5 years of solution digital designer experience	X	X	-
INT 18	U6	Developer	8 years of experience in front end digital development	X	-	X
INT 19	A7	Process analyst	8 years of experience in process designing	X	X	-
INT 20	U7	Developer	9 years of full stack digital backend developer	X	X	-
INT 21	U8	Technical Analyst	7 years of experience in digital products technical analysis	X	X	X

Appendix E

Participant Consent Form

RMIT BUSINESS COLLEGE HUMAN ETHICS ADVISORY NETWORK

Prescribed Consent Form for Persons Participating In Research Projects Involving Interview Questionnaires, Focus Groups or Disclosure of Personal Information

College of School: School of Business Information Technology and Logistics

Name of Participant: Neeraj Sahu

Project Title: Investigating the Critical Success Factors of the Digital Transformation for improving the Customer Experience in Australian Organisations

Names(s) of Investigators: 1) Professor Hepu Deng

[REDACTED]

2) Professor Alemayehu Molla

[REDACTED]

1. I have received a statement explaining the interview/questionnaire involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.
3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.
4. I give my permission to be audio taped: Yes No
5. I give my permission for my name or identity to be used: Yes No
6. I acknowledge that:
 - (a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.

- (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
- (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
- (d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure. If I participate in a focus group I understand that whilst all participants will be asked to keep the conversation confidential, the researcher cannot guarantee that other participants will do this.
- (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to _____ (researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

Participant’s Consent

Participant: _____ Date: _____
 (Signature)

Participants should be given a photocopy of this PICF after it has been signed.

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, [REDACTED]

Appendix F

Ethics Approval



Deputy Pro Vice-Chancellor
(Research & Innovation)
College of Business

Notice of Approval

Tel: -
Fax: -

Date: 27 September 2016

Project number: 20210

Project title: *Investigating the Critical Success Factors of the Digital Transformation for Improving Customer Experience in Australian Organizations*

Risk classification: Low Risk

Chief Investigator:
Student Investigator:
Other Investigator:

Project Approved: From: 23 September 2016 To: 31 March 2019

Terms of approval:

Responsibilities of the principal investigator

It is the responsibility of the principal investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by BCHEAN. Approval is only valid while the investigator holds a position at RMIT University.

- 1. Amendments**
Approval must be sought from BCHEAN to amend any aspect of a project including approved documents. To apply for an amendment submit a request for amendment form to the BCHEAN secretary. This form is available on the Human Research Ethics Committee (HREC) website. Amendments must not be implemented without first gaining approval from BCHEAN.
- 2. Adverse events**
You should notify BCHEAN immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
- 3. Participant Information and Consent Form (PICF)**
The PICF must be distributed to all research participants, where relevant, and the consent form is to be retained and stored by the investigator. The PICF must contain the RMIT University logo and a complaints clause including the above project number.
- 4. Annual reports**
Continued approval of this project is dependent on the submission of an annual report.
- 5. Final report**
A final report must be provided at the conclusion of the project. BCHEAN must be notified if the project is discontinued before the expected date of completion.
- 6. Monitoring**
Projects may be subject to an audit or any other form of monitoring by BCHEAN at any time.
- 7. Retention and storage of data**
The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Regards,

Chairperson
RMIT BCHEAN

Appendix G

Participant Invitation Letter

Subject: Invitation to participate in a research project

Project Title: Investigating the Critical Success Factors of the Digital Transformation for improving the Customer Experience in Australian Organisations

Investigator: Neeraj Sahu

[Redacted contact information for Neeraj Sahu]

Supervisors: 1) Professor Hepu Deng

[Redacted contact information for Professor Hepu Deng]

2) Professor Alemayehu Molla

[Redacted contact information for Professor Alemayehu Molla]

Dear participant, (the name of person will be typed instead of participant)

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in a straightforward language, or ‘Plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate or not. If you have any questions about the project, please contact the investigator or my supervisors as stated above.

Digital transformation in organisations is the adjustment and change of business processes, business models, competencies, customer servicing and business ecosystems through the adoption of digital technologies. It is about the transformation of an organisation through the effective integration of digital technologies and business processes in a digital economy for improving the performance of an organisation. This involves the transformation of key business processes with a significant impact on organisational processes and products in an organisation. Such a transformation of an organisation can reshape the customer value proposition and change the business model in an organisation, leading to better customer experience being offered.

Changing business environments and rapid developments of information and communication technologies are compelling organisations to go for organisational changes in order to be competitive in today's dynamic marketplace. Organisations are taking new initiatives to change their business strategies for improving their business performance. The implementation of such initiatives leads to the transformation of organisational processes and business models. How to make such transformation in today's competitive environment is, therefore, becoming a critical issue that needs to be adequately addressed. As a result, it becomes very pertinent for organisations to have knowledge of factors that can influence the effectiveness of such initiatives in organisation.

This research aims to understand the factors that can influence the effectiveness of digital transformation in organisation for improving customer experience. It focuses on factors which the expert's belief can have an effect on the outcome of such initiatives by taking various organisational perspectives into consideration. The questions which will be discussed in the interview would be related to:

- Factors that can influence the effectiveness of digital transformation for improving customer experience from analytics, business, customer, and digitalization perspectives
- Factors that are critical from organisation's internal perspectives that can influence digital transformation to improve customer experience?
- Effect of people, process and digital technology affect digital transformation to improve customer experience?
- Emerging issues and challenges for organisation to execute digital transformation to improve customer experience?

You are approached to participate in the research because you are working in digital transformation initiative and have an expertise in understanding and analysing digital transformation execution. The interview will take about one hour. It will be conducted in a place and time suitable for you. With your consent, the interview responses will be captured and will subsequently be transcribed for further data analysis; however you have the right to cease the taping at any time. In all stages of the research the collected data will remain completely confidential and will be treated in a manner to protect the participant's name. The collected data will be analysed and the results published without including information that can potentially identify either the respondents or their teams. In other words, anonymity of participants is guaranteed in all stages of the research and also in all publications resulting from this research. The collected data will be kept in password protected university's cloud server for maximum for 5 years. Only the Investigator will have access to the data. After 5 years the data will be deleted in a secure manner.

The research is conducted as part of my Master's degree at RMIT and is completely independent of the organisation and therefore your acceptance / declining to attend the interview will not have any positive or negative effect on your value in the company and if you decline to attend the interview your name will remain confidential. Your participation in this research is voluntary. As a participant, you have the right to withdraw your participation at any time; you can have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided. The questions asked in the interview refer to your support experiences; however, if you feel unhappy about a particular question during the interview, you have the right to withdraw completely or avoid answering the question(s).

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, [REDACTED]

If you agree to participate, please sign the enclosed 'Prescribed Consent Form' and return it to me. If you have any questions regarding this research, you can either contact me or my supervisors at the addresses below.

Yours Sincerely

Investigator

Appendix H

Criticality of CSFs

SL. No.	Factor	Dimension
High Criticality		
1	Data understanding	Analytics
2	Analytics based segmentation	Analytics
3	Improved insights	Analytics
4	Real time customer information	Analytics
5	Understanding customer needs	Business
6	Effective costing model	Business
7	Economic value	Business
8	Simplified customer processes	Customer
9	Process transparency	Customer
10	24x7 real time servicing	Customer
11	Personalise servicing	Customer
12	Self-servicing	Customer
13	Digital enterprise integration	Digitalization
14	Integration with social media	Digitalization
15	Multiple digital channels	Digitalization
16	Availability	Digitalization
Medium Criticality		
17	Data management	Analytics
18	Real time data processing	Analytics
19	Customer engagement pattern	Analytics
20	Real time decision making	Analytics
21	Providing single view to customers	Business
22	Enabling customer centric execution	Business
23	Dynamic pricing model	Business
24	Unique products and services	Business
25	Continuous innovation	Business
26	Emotional value	Business
27	Process automation	Customer
28	Process optimisation	Customer
29	Coherent experience across various channels and devices	Customer
30	Communication	Customer
31	Service response time	Customer
32	Proactive engagement	Customer
33	Integrated offline and online channels	Customer
34	Integration with 3rd party	Digitalization
35	Platform and device independent digital services	Digitalization
36	High quality digital content	Digitalization
37	Usability	Digitalization
38	Data security and reliability	Digitalization
Low Criticality		
39	Forecasting analysis	Analytics

40	Predictive marketing and service	Analytics
41	Capacity utilisation analytics	Analytics
42	Adapting changing market situations	Business
43	Expanding geographies	Business
44	Recognition and rewards	Business
45	Feedback	Customer
46	Training	Customer
47	Improving knowledge management	Customer
48	Personalised marketing	Customer
49	System capacity	Digitalization
50	Processing capacity	Digitalization
51	Performance and speed	Digitalization

Appendix I

Updated ABCD Framework

