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Factors Determining Digital Transformation Framework in Egypt: IT Industry: Insistence on Customer Centricity

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Abstract: ***Digital transformation concept has become a significant business topic that must be addressed in any organization and it should be used in a strategic way in order to achieve the business objectives and enable the organization to reach its desired future state. Digital transformation could be divided into two types or two categories, (1) digital transformation related to the top line growth, (2) digital transformation related to bottom line performance, the key problem that face the IT organization in Egypt is the lake of the first type which leads the organization to a fake digital transformation by just performing a group of IT related projects. This paper tried to merge the digital transformation and customer centricity, by developing a customer centricity based digital transformation framework that could be used by IT organization in Egypt to perform a real digital transformation not a fake one. The proposed digital transformation framework contains five layers: Controlling principle layer, guiding and directing layer, fuel layer, implementation layer and supporting layer. The proposed framework contains 12 elements, these elements are: customer centricity, organization strategy, digital transformation strategy, innovation management, project management, technology, resources, human resources, change management, intern business environment, external business environment and legal and regulation.***

Keywords: Digital transformation, customer centricity, digital transformation framework, digital transformation in IT, digital transformation in Egypt.

I. INTRODUCTION

As a result of emergent of new technologies such as Artificial Intelligence (AI), blockchain, Internet of Things (IoT) the rules of business have changed (Rogers, 2016) and many organizations are changing due to the disruptive technologies and way of doing the business (Mahraz, Benabbou, & Berrado, 2019). The digital transformation concept has become a significant business topic and a strategic issue that must be addressed in any organization (Mahraz, Benabbou, & Berrado, 2019). In the current digital age, the business environment is changing in a fast way and become more complex, volatile and uncertain than in the past, so the organizations need to develop a new business model(s) to be able to successfully manage the new characteristics of the business environment (Teichert, 2019). Currently, there is no general universal definition for the term digital transformation (Mhlungu, Chen, & Alkema, 2019).

Another important term is: Customer centricity, which could be seen as an old term, the was discussed in management literature for more than 50 years (Shah D. , Rust, Parasuraman, Staelin, & Day, 2006), the term is used to indicate the focus of the organization and the business process on satisfying the customer needs and putting the value creation for the customer in the heart of the organization operation and strategy (Carmen & Martijn, 2016).

A. Research Problem

The information technology sector in Egypt has 10586 working organization. The IT sector has a 16.3 growth rate, and with revenue 315 billion EGP. The sector is considered the fastest growing sector in Egypt for five consecutive years, Ministry of Communication and Information Technology (MCIT, 2024), which means that the performance of the sector's organization impacts the economy of the country. On average there are 195 new established IT company per month (MCIT, 2024). The IT sector in Egypt faces three key challenges: (1) inadequate or unreliable digital infrastructure which leads to poor internet connection and speed, (2) skilled workforce who has the required knowledge about the true meaning of digital transformation, (3) the implementation of IT related projects as digital transformation projects (Ahmed, 2020; Esawe & Elwkeel, 2020; Kamel, 2021; Elgohary, 2021).

It has been argued that Many organizations consider digital transformation as an implementation of group of information technology (IT) related projects, such as building a new website or a new ERP system (Vial, 2019).

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However, digital transformation could be defined as: The action of integrating the digital technical technologies into business, which results in changing the way of doing the business and how the organization deliver value to its customer (Oludapo, Carroll, & Helfert, 2024).

Digital transformation initiatives have a high failure rate due to several reasons (Oludapo, Carroll, & Helfert, 2024). The failure reasons could be classified as: (1) technological reasons including lack of awareness about the current trends in the organization's sector, lack of proper planning, resistance to use the new technology, (Oludapo, Carroll, & Helfert, 2024), (2) management reasons which include: lack of proper training, the management readiness, lack of effective communication and stakeholder management, resistance to change (Oludapo, Carroll, & Helfert, 2024), (3) innovation reasons which include: lack of strategic structure, failure to implement a successful governance framework and lack of cross-functional team (Oludapo, Carroll, & Helfert, 2024), and (4) information system reasons which include: security issues, failed to calculate the total cost and high degree of automation (Oludapo, Carroll, & Helfert, 2024).

The digital transformation projects related to automation has a high failure rate: 70% (Talafidaryani & Asarian, 2024). The high rate of failure is mainly due to the lack developing new innovative products and services that meet the customer needs (Talafidaryani & Asarian, 2024) , and the lack of sufficient knowledge about the real meaning of digital transformation.

Customer centricity is not a new term but it used by the organization to indicate the focus of the organization and the business process on satisfying the customer needs and putting the value creation for the customer in the heart of the organization operation and strategy (Soklaridis, Geske, & Kummer, 2024). Customer centricity is mainly about making the organization revolve around the customer, starting from communicating with the customer to know the needs and wants of the customer ending in creating and providing value to the customer strategy (Sayed, Hejase, Hamdar, Hatoum, & Hejase, 2022).

Customer centricity will enable the organization to enhance its operation and by achieving the need and wants of the target customers, it will increase its profit and achieve a sustainable competitive advantage against its competitors (Soklaridis, Geske, & Kummer, 2024).

Considering digital transformation just as an implementation of group of IT and technology related projects will prevent the organization from having the real benefit from these projects and will be an obstacle to achieve a real transformation that generate a real customer value. The concept of customer centricity is not addressed as a main driver of the digital transformation, the result also showed that the main focus of digital transformation projects were the digitization of business processes within the organization and/or the digitization of the service or products offered by the organization to its customers (Ahmed, 2020; Esawe & Elwkeel, 2020; Kamel, 2021; Elgohary, 2021). The investigation considered digital transformation as a new term that could be used as an alternative to information and communication technology while the real meaning of digital transformation as a way to serve the customer and change the way of doing the business is absent and not considered as a real definition of digital transformation (Ahmed, 2020; Esawe & Elwkeel, 2020; Kamel, 2021; Elgohary, 2021).

This aim of this research paper is to address the lack of clear understanding and implementation of the real meaning of the digital transformation (from the researcher point of view) the real meaning is mainly related and centered about customer centricity, this lack of clear understanding causes the organizations to be a victim of fake digital transformation by just implementing a group of technology-based project and program without real modification in the way of doing the business and offering a value to the customer. The reason behind the unclear understanding is the absent of complete digital transformation framework that is based on the concept of customer centricity.

This research paper tried to illustrate the real meaning of digital transformation, which is centered around creating and delivering value to the customers, through building a customer-centered digital transformation framework that the organizations can use to implement a real digital transformation project.

B. Research Questions

This research focused on the following main research question:

1) What are the perceptions of the decision-makers in IT sector in Egypt on the digital transformation?
2) How the organization in IT sector in Egypt can implement a real digital transformation process?
3) What are the perceptions of the decision-makers in IT sector in Egypt about the relationship between customer centricity and digital transformation?
4) What is the role of customer centricity in digital transformation in IT sector in Egypt?

C. Research Objectives

The purpose and the objectives of this research are:

1) To know and understand the perceptions of the decision-makers in IT sector in Egypt on the digital transformation.
2) To know the processes through which the IT companies in Egypt can implement a real digital transformation.
3) To understand the perceptions of the decision-makers in IT sector in Egypt about the relationship between customer centricity and the real digital transformation.
4) To determine the role of the customer centricity in digital transformation in IT sector in Egypt.

II. DIGITAL TRANSFORMATION OVERVIEW

In 1994 Venkatrman emphasized the strategic role of information technology in the organization and how the IT can support business strategy of the organization (Oludapo, Carroll, & Helfert, 2024). The notion of employing new digital technology such as AI, to change organizational positioning has been widely used to describe the digital transformation activities (Oludapo, Carroll, & Helfert, 2024). Many researches such as Wessel et al. (2021) propose a clear distinction between digital transformation and IT related projects (Wessel, Baiyere, Cha, & Ologeanu-Taddei, 2020). Digital transformation contains shift in organizational leadership approach (Oludapo, Carroll, & Helfert, 2024).

The term digital transformation appeared for the first time in 2000 (Mahraz, Benabbou, & Berrado, 2019), the term illustrated and defined for the first time by Fors and Stolterman in 2004, they define digital transformation as: The changes that digital technology entails or influences in all aspects of human life (Mahraz, Benabbou, & Berrado, 2019). Digital transformation is not an easy task (PMI, 2023). It is a hard job within the organization, it involves reassessing of the current business model of the organization, testing the assumptions about where to compete, how to win and how to operate in certain market (PMI, 2023).

There is a difference between three important words: digitization, digitalization and digital transformation. (Stamoulis & Kopanaki, 2024). Knowing the difference between these terms will support the organization to implement a real digital transformation journey. The first word, digitization, is defined as the changing or converting the documents or the product to the digital form, while the digitalization is the usage of the digital format of the documents and products, digitalization could be seen as the benefit of digitizing, the last word is digital transformation, which could be defined as system level restructuring of the organization by using and utilizing the new technologies (Stamoulis & Kopanaki, 2024).

Digital transformation could be defined as the changes that the new digital technologies can have on the organization business model which results in changing the organization product, structure and the automation of the business processes (Saeedikiya, Salunke, & Kowalkiewicz, 2024). This definition gives more focus to the digitization element of the digital transformation and also illustrate three aspects that the organization should focus on: the product, the structure and the business processes. By another means this definition will support the organization to focus on the customer needs through the product, and the internal capabilities through the structure and automation of the business process through the usage of new technology (Saeedikiya, Salunke, & Kowalkiewicz, 2024). Another definition for the term digital transformation is: “A fundamental change process, enabled by the innovative use of digital technologies accompanied by the strategic leverage of key resources and capabilities, aiming to radically improve an entity and redefine its value proposition for its stakeholders” (Gong & Ribiere, 2021).

Digital transformation could be seen as a key driver to enhance the operation of the organization (Xu, Zhang, Sun, Tang, & Li, 2024). The digital transformation is considered as an essential tool for enhancing the innovation capability within the organization (Xu, Zhang, Sun, Tang, & Li, 2024), it will support the innovation capability of the organization, which intern will enhance the digital transformation activities within the organization in order to have a better way of doing the business (Xu, Zhang, Sun, Tang, & Li, 2024). Enhancing the way of doing the business will support the organization to respond to the market change and achieve the customer needs and wants (Xu, Zhang, Sun, Tang, & Li, 2024).

Digital transformation research went through three stages (Zhu, Ge, & Wang, 2021), the first stage from 2000 till 2012, during this stage the research papers related to digital transformation were scattered and few as the concept of digital transformation was still considered as a new concept without unified understanding, most of the research paper in this stage were related to the application of the digital technologies such as data analytics, big data and cloud computing (Zhu, Ge, & Wang, 2021). The second stage from 2013 till 2017, during this the research paper started to focus on subjects such as digital business strategy and digital transformation strategy and also started to differentiate between them and IT strategy (Zhu, Ge, & Wang, 2021). The third stage from 2018 till now, the main focus of this stage is mainly related to the implementation problems that the organizations may face during the digital transformation journey (Zhu, Ge, & Wang, 2021).

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The academic research related to digital transformation mainly discuss digital transformation from two aspects, the first is related to the impact of digital transformation on the organization's activities and on the society in general (Veldhoven & Vanthienen, 2019), the second aspect is related to providing a guidelines to the organization about how to implement the digital transformation process (Veldhoven & Vanthienen, 2019).

The term digital transformation has many different meanings and definitions, there are different 23 definitions for the term digital transformation (Vial, 2019). In their study about defining the term digital transformation Cheng Gong and Vincent Ribiere identify 134 different definitions for digital transformation. (Veldhoven & Vanthienen, 2019) illustrated that there are 17 different definitions for the term "digital transformation" based on their study of 115 papers related to digital transformation, as per their study the digital transformation definitions contain different components such as: use of digital technologies, new business models, internal operations, customer experience, society transformation, change process, organizational transformation, digital innovation, digital economy, value creation, and products and services (Veldhoven & Vanthienen, 2019).

A. Digital Transformation Frameworks

The framework could be defined as: A combination of related and linked items that support certain approach in order to achieve a specific objective (Budler & Trkman, 2019), another definition for the word framework is: Agent's point of view in interpreting (analyzing) the surroundings and towards performing tasks (Badewi, 2021). As an example of the frameworks that had been used in the management field is the business model canvas and the SWOT matrix (Budler & Trkman, 2019).

Accenture framework consists of three mail layers, the first one is the ecosystem layer that addresses the organization structure, the organization culture and relation with the partner, the second layer contains five blocks: integrated services, analytics and intelligence, data management, content management and omnichannel experience, then the last layer customer journey blueprint (Accenture, 2014).

CapGemini Framework: The underlying layer is the digital capabilities of the organization which includes: unified and data processes, analytical capability, business and IT integration and solution delivery. Then there are three main building blocks: The customer experience, the operational process and business model (CapGemini, 2011).

Cognizant framework: The framework contains four elements: The customer, the product, the process and system and organization. The main key word in this framework is "digital", the framework focusses on digitizing all the four elements within the organization that want to start its digital transformation journey (Cognizant, 2014).

Deloitte framework: The framework contains three phases: The first one is imagine in which the organization starts to define and develop this strategy, ignite the innovation and drive insights, the second phase is deliver, in which the organization create experience, redefine its core business capabilities, and lead the change of its design, the third and last phase is run, in which the organization builds the platforms to deliver the products and services to the customer, deliver data protection and sustain and optimize its business agility (Deloitte, 2014).

EY framework: The framework is comprised of five iterative phases: Futures View, Outside-In, Inside-Out, Mobilize and Scale. (EY, 2020)

KPMG framework contains three building blocks, the first one is the back office, the second one is the mid office and the third one is the front office. The framework contains eight capabilities that enables the organizations to implement the framework: (1) insight-driven strategies and actions, (2) experience-centricity by design, (3) responsive operation and supply chain, (4) integrated partner and alliance ecosystem, (5) innovative product and services, (6) seamless interaction and commerce, (7) aligned and interactions workforce, and (8) digitally-enabled technology architecture. (KPMG, 2020).

Mckinsey framework contains four components: discover, design, deliver and De-risk. The framework is called 4D framework, as the four components start with the letter "D" (Mckinsey, 2017).

PwC developed a digital transformation framework based on the fourth industry revolution called Industry 4.0. The framework puts the industry 4.0 at the center of the transformation process with three circles around the core. the first circle represents three stages in the digital transformation process. The second circle represents the data and analytics capability of the organization as a core capability. The third and last circle is the technologies that could be used to implement the digital transformation process. (PwC, 2016).

Tonder, Schachtebeck, Nieuwenhuizen and Bossink (2020) developed a digital transformation framework that enable the organization to achieve a business model innovation. The framework is based on three concepts: digitalization, digital transformation and business model innovation (Tonder, Schachtebeck, Nieuwenhuizen, & Bossink, 2020).

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Another digital transformation framework was developed by Natalja Verina and Jelena Titko. The framework consists of three parts, the input, the main categories of the digital transformation concept, and the output (Verina & Titko, Digital transformation: conceptual framework, 2019).

Evgeny Popov, Victoria Simonova1, and Vitalii Cherepanov developed a digital transformation framework. The framework contains 7 stages, all of them started with the letter "D", this why the authors called their model D-Cycle model (Popov, Simonova, & Cherepanov, 2021). The below figure illustrates the D-Cycle model.

Fanny-Eve Bordeleau, Luis Antonio De Santa-Eulalia and Elaine Mosconi in their paper titled "Digital Transformation Framework: Creating Sensing, Smart, Sustainable and Social (S^4) Organizations" presented a digital transformation framework. The framework acts as an integrated framework of several digital transformation aspects in order to facilitate and organize the process of value creation (Bordeleau, Santa-Eulalia, & Mosconi, 2021).

Ziboud Van Veldhoven and Jan Vanthienen in their paper "Designing a Comprehensive Understanding of Digital Transformation and its Impact" introduced a digital transformation framework based on the components of the digital transformation definitions analysis appeared in 115 papers. The framework has three dimensions, the first one is Business, the second is digital technology and the third dimension is society (Veldhoven & Vanthienen, 2019).

The Global Center For Digital Business Transformation (a cooperation initiative between IMD and Cisco) published a business reports written by four authors: Michael Wade, Andy Noronha, James Macaulay and Joel Barbier, the report proposes a digital transformation framework, which is considered by the authors as an execution framework that support the organization to execute the digital transformation process (Wade, Noronha, Macaulay, & Barbier, 2017).

In their paper "Digital Transformation Strategies" Christian Matt, Thomas Hess and Alexander Benlian proposed a digital framework that contains four elements. The framework is independent of the industry or organization (Matt, Hess, & Benlian, 2015). The four elements of the framework are: Use of technologies, changes in value creation, structural changes, and financial aspects (Matt, Hess, & Benlian, 2015).

In their paper "Structuring Digital Transformation: A Framework of Action Fields and its Application at ZEISS" Henner Gimpel, Sabiölla Hosseini, Rocco Xaver Richard Huber, Laura Probst, Maximilian Röglinger and Ulrich Faisst proposed a digital transformation framework based on six action fields which are: (1) Customer, (2) value proposition, (3) operation, (4) data, (5) organization and (6) transformation management (Gimpel, et al., 2018).

III. CUSTOMER CENTRICITY CONCEPT

Customer centricity is not a new term, it was discussed in management literature for more than 50 years (Shah D. , Rust, Parasuraman, Staelin, & Day, 2006) and it used by the organization to indicate the focus of the organization and the business process on satisfying the customer needs and putting the value creation for the customer in the heart of the organization operation and strategy (Carmen & Martijn, 2016). The customer centricity term is used by many organizations in many industries, so there is no general definition for this term (Palmatier, Moorman, & Lee, 2019). There is more than one perspective regarding the definition of the term customer centricity, one of these perspectives is to compare the concept of customer centricity to the product centricity which embraces an inside-out perspective, the customer centricity concept could be seen as outside-in perspective (Palmatier, Moorman, & Lee, 2019; Carmen & Martijn, 2016). Other perspective sees the customer centricity concept in the context of valuating the value of certain customer or group of customers (Palmatier, Moorman, & Lee, 2019).

Customer centricity was born in 1954 when Drucker said, "It is the customer who determines what a business is, what it produces, and whether it will prosper" (Pardo-Jaramillo, Muñoz-Villamizar, Osuna, & Roncancio, 2020). Only until the 1990s, the concept of a customer-centric organization or customer centricity began to develop as a force in the marketing literature using the term market orientation (Pardo-Jaramillo, Muñoz-Villamizar, Osuna, & Roncancio, 2020).

Customer centric organization could be seen as the organization that align their operating models with a carefully defined and quantified customer segmentation strategy, and tailor business streams-product development, demand generation, production and scheduling, supply chain, and customer care in order to deliver the greatest value to the best customers for the least cost (Sayed, Hejase, Hamdar, Hatoum, & Hejase, 2022).

Customer centricity is one of the most important business concepts and it could be seen as putting the customer into the center of attention of the organization (Soklaridis, Geske, & Kummer, 2024). Customer centricity is a key part of developing the organization strategy (Soklaridis, Geske, & Kummer, 2024).

The ultimate objective of the customer centricity concept is to build a long-term relation with the customer which enable the organization to achieve a sustainable competitive advantage against its competitors (Soklaridis, Geske, & Kummer, 2024).

Many current researches in customer centricity field focus on "what is customer centricity", and "why customer centricity", but there are few research efforts focus on "how" to achieve customer centricity (Soklaridis, Geske, & Kummer, 2024).
The following figure illustrate the Conceptualization of customer centricity and adjacent constructs.

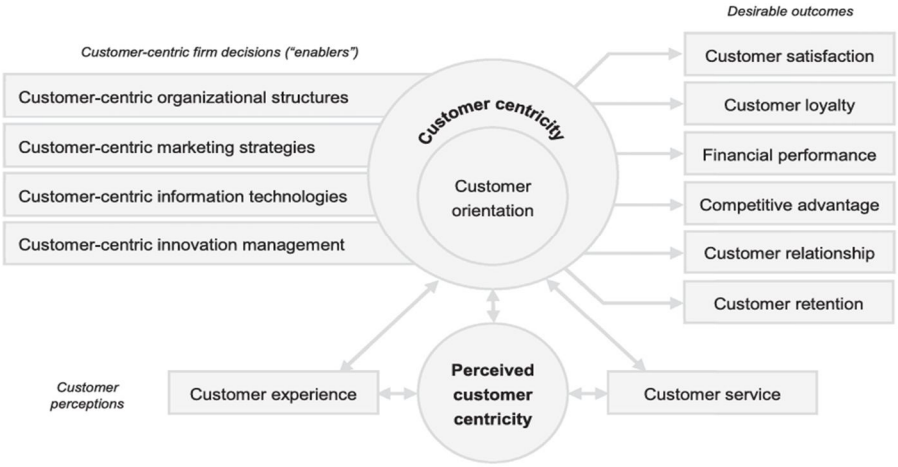


Figure 1. Conceptualization of customer centricity and adjacent constructs. Source: (Soklaridis, Geske, & Kummer, 2024)

Customer centricity could be defined as: Developing a deep understanding of the customer needs and wants (Carmen & Martijn, 2016). Another definition of the customer centricity term is putting the customer at the center of the organization strategy (MIT, 2019). Customer centricity could be seen as a strategy that the organization can follow in order to align its products (and services) with the need and wants of the customer (Fader, 2020). From academic perspective customer centricity could be defined as: "shifting from pushing individual products to building long-term customer relationships" (Rust, Moorman, & Bhalla, 2010).
Another definition is: "A strategy that aligns a company's development and delivery of its products and services with the current and future needs of a select set of customers in order to maximize their long-term financial value to the firm" (Fader, 2020), customer centricity also could be seen as: "A specific focus on those high-value, loyal customers and treating them separately from other one-time customers" (Ghose, Maity, & Baidya, 2019).

IV. RESEARCH DESIGN

This research paper used qualitative research methodology and the approach was grounded theory to build and develop the aimed framework (Creswell J. W., 2022). The reason of using a qualitative research methodology is to go beyond the numerical and statistical analysis and to achieve a deeper understanding about how the organization perform the activities related to digital transformation (Creswell, 2022). The nature of the data in this study is not numeric, the interviews with subject matter experts (as a data collection method) enabled the participants to describe their feelings, experiences, and points of view toward certain subjects. The qualitative research expected an interaction between the researcher and the subject (phenomena) (Creswell & Poth, 2024) also, the investigator and the investigated phenomena were interdependent (Creswell, 2022). In this research the qualitative approach was selected as there is no need for result generalization (Creswell, 2022). All these factors supported the selection of qualitative research as a methodology for this research.

A. Population and Sample of The Study

The population could be defined as the entities that affected by the problem of the research (Malhotra, 2019). The target population (participants) for this research included experts in the digital transformation area worked in Information Technology Industry in different sectors such as: Software Development, Networking, and Administration. Some of them are working in the private sector while the others are working in government entities, these participants are living and working in Egypt. The interviews will be online meetings through online meeting tools such as Skype and Zoom. The number of participants in this research was 21.
The sample size in qualitative research is smaller than the sample size in quantitative research (as a result of data saturation concept), the participants will be evaluated based on their ability to provide rich information rather than being a representative of a large group (Creswell, 2022). The researcher depended on his relationship with groups of experts in the digital transformation field to participate in this research.

The Snowball sampling, as non-probability sampling technique, is used in this research. Initially, the researcher selected a group of respondents, after the interview the researcher asked each one of them to propose another person(s) who could participate in the research (Malhotra, 2019). The reason behind selecting the snowball sampling is that: The researcher needs to understand, discover, and gain insight thus the researcher must select the participants who will be able to provide the required data and information from which the most can be learned.

All the participants should have at least ten years of experience in the digital transformation field, the participant should have a real-life experience in digital transformation projects even in the private sector or in the public sector. Other supporting factors in selecting the participants will include: holding a certificate related to digital transformation, teaching digital transformation courses, holding a post graduate degree related to the digital transformation field. A review of a short biography about each candidate facilitated the selection of the participants for this research.

The concept of data saturation, which is the point at which no new information or themes are observed in the data from the completion of additional interviews or cases, is a useful one in terms of discussing sample size in qualitative research (Creswell & Poth, 2024).

Saturation is reached when the researcher stops collecting data because fresh data no longer sparks new insights or reveals new properties (Creswell & Poth, 2024). Although the concept of data saturation is helpful at the conceptual level, however in practical terms it provides little guidance for estimating the actual sample size (Creswell J. W., 2022). Hennink, Kaiser and Marconi (2016) showed that code saturation indicate that the researcher have heard all the necessary information, while meaning saturation is needed to understand all the data, they also showed that: Nine interviews were needed to reach code saturation and 16-24 interviews were needed to reach meaning saturation.

B. Data Collection Procedure

There are two data collection methods in this paper, document analysis and interview.

To conduct the interview with the participants, the researcher contacted each participant (by sending an email or online chatting tool) and obtained his/her approval to participate in the research (Creswell, 2022). Individual Informed Consent was sent to each participant through email, to illustrate the purpose and objective of the study, the rights of the participant, and that the collected data was used only for the purpose of the research.

The participant had the right to withdraw from the interview and the participation in this research at any time. The collected data was used only for the purpose of this research and was stored in a secure database designed for the purpose of this research and was not used by or given to any other entity (Creswell, 2022).

Each interview was planned to take 1-1.5 hours, the language of the interview was Arabic except for the technical terminology was in English language. The participant had the right to select the suitable place and date to conduct the interview.

C. Data Analysis Procedure

One of the most important features of qualitative data analysis is that in qualitative research the focus is on the text, not on numbers, as in the quantitative research (Creswell, 2022).

Data analysis in qualitative research is rich in text (Creswell & Poth, 2024). Qualitative data analysis tends to be inductive (Creswell, 2022).

In the qualitative research, the data analysis stage is iterative and begins with the data collection stage and write-up of findings (Creswell, 2022). The following steps were used to analyze the collected data through the data collection stage:

1) Step 1: Organizing the data. In this step all the data, collected through the data collection stage, was organized into four main categories: (a) data related to the digital transformation concepts and definitions, (b) data related to the digital transformation frameworks and models, (c) data related to the customer centricity concepts, and (d) list of all the people who could be a good candidate to participate in this research (Creswell & Poth, 2024).
2) Step 2: High level review. This step included a quick review for all the material collected during the data collection stage. The aim was to determine which documents were useful for the research purpose. This step also included a creation of a short list of the candidate participants in this research (Creswell & Poth, 2024).
3) Step 3: Coding. The results from the interviews and document analysis were grouped together into categories and assigned a label. For example, list the components and the items of the digital transformation framework and which items were common and appeared in more than one framework (Creswell & Poth, 2024).

4) Step 4: Description. The aim of this step was to generate a detailed rendering information and to develop general themes or categories that formed the major finding of the research (Creswell & Poth, 2024).

5) Step 5: Interpretation. This step involved making interpretations of the findings generated from Step 4, which included linking results to the research questions. This step included suggestions of new questions and research to cover the points not covered in this research. (Creswell & Poth, 2024).

V. DEMOGRAPHIC STATISTICS

The participants in this research are working in the information technology field in Egypt. These participants are working in different position related to digital transformation, such as: project managers, business transformation consultant, digital transformation director.

All of the interviews were conducted online through online meeting tools such as Skype and zoom.

The below tables illustrate the demographic characteristics of the participants.

Table 1
Number of Participants as per their Sex

Group	Male	Female
Digital transformation practitioners	16	5

Table 2
Number of Participants as per their Age

Age	Number of participants
35 – 40	2
41 – 45	4
46 – 50	6
More than 50	9

VI. RESEARCH THEMES

During the meeting with the research participants, there were three main questions represents the three main ideas in this qualitative research. The first question is: What is the meaning of digital transformation? And what is the difference between a real and fake digital transformation?

This question aims to understand the participant's point of view and opinion about the meaning of digital transformation and what is the difference between real business digital transformation and fake digital transformation.

The second question is: What is the relation between digital transformation and customer centricity? This question aims to understand the participant's point of view about how and why the customer centricity concept should be included in the digital transformation journey.

The third and last question is: What are the proposed elements that could be included in digital transformation framework? The aim of this question is to know and understand the participant's point of view and opinion about the elements of the customer centricity based digital transformation framework.

In this paper there are three themes, (1) the difference between real digital transformation and fake digital transformation, (2) digital transformation and customer centricity and (3) the elements of customer centricity based digital transformation framework.

A. Details of Analysis and Results

Based on the participant's point of view and the discussion with them, the researcher was able to extract the following items:

Table 5
The Frequency of the Framework Proposed Items

Technology	21	100.00%
Strategy	19	90.48%
Customer Centricity	17	80.95%
DT Strategy	16	76.19%
Resources	15	71.43%
Innovation	11	52.38%
Product/Service Delivery	8	38.10%
law / regulation	7	33.33%
Business Process	5	23.81%
Culture	4	19.05%
Performance Management	3	14.29%
Business Environment	2	9.52%
Project Management	2	9.52%
Sustainability	2	9.52%
Objectives	2	9.52%
KPI	2	9.52%
Governance	2	9.52%
Compliance	2	9.52%
Sustainability	2	9.52%
SH Management	1	4.76%
Current Situation	1	4.76%
Future Situation	1	4.76%
Benefit Management	1	4.76%
Value Management	1	4.76%
Talent Management	1	4.76%

Based on the discussion with the participants, there are 25 proposed item that could form the proposed digital transformation framework. This large number of proposed items indicates that there is no single point of view regarding the digital transformation in the IT companies in Egypt, which could be an indicator to another issue in the IT sector which is: there is no clear model or framework followed by the IT companies, also indicate that there is no unique principles and concepts that guide the digital business transformation activities in the IT sector. Although it is important for every organization to tailor or customize the digital transformation activities based on its internal and external business environment, but there should be a common concepts and principles that guide the digital transformation activities which act as a common ground for every organization working in this sector. Although value management and benefit management are very tied to the customer centricity concept, they have only one vote for each of them. From the researcher point of view, these two items are very important and were expected to have more votes form the participants as customer centricity is mainly about how to deliver benefit and value to the customer.

All the participants considered the technology as a key element in the proposed digital transformation framework. The second item is strategy, 19 participants said that strategy should be one of the elements of the framework, this indicates the importance of the strategy as a driver that should guide the digital transformation journey within the organization and indicate that the digital

transformation activities are not tactical activities performed in isolation from the organization strategy. The third element is the customer centricity with 17 votes, only 4 participants did not say that customer centricity should be part of the proposed framework.
Digital transformation strategy came in the fourth position, which indicates that the organization should have a dedicated digital transformation strategy driven by the overall organization strategy, and that the digital transformation journey within the organization is strategic decision not operational activities. Artificial Intelligent (AI) is the most mentioned technology during the interview with the participants. This is an expected result, as the AI is one of the most used and popular technology and used in almost every industry not only the IT.
The participants mentioned some other technologies such as: big data, blockchain, Internet of Things (IoT).
Based on the participants point of view, the resources come in the fifth position. These resources include all the types of resources, such as financial resources, human resources and physical resources. From the researcher point of view, it is important to separate the human resources from other types of resources, as human resources are very important and should have a clear and strong focus from the organization. In the sixth position is the innovation, innovation is important factor for any organization, it enables the organization to financial and non-financial benefit, also through the innovation and implementing innovation management system, the organization can outperform its competitors in terms of growth of sales and profit.
The innovation will enable the organization to deliver a new and unique product and services to its customer which support the organization to respond to the customer needs and requirements and become a real customer centric organization.

B. Achieving Research Objectives

Based on the analysis of the participants point of view related to the first theme (The difference between real digital transformation and fake digital transformation), the digital transformation is guided by the organization strategy, it is a strategic journey rather that a tactical activity performed by certain department within the organization. The digital transformation journey needs a dedicated strategy driven by the organization strategy.
There is a need to differentiate between real (successful) digital transformation and fake (failed) digital transformation in order to be able to achieve the desired goals. The digital transformation should be performed in order to achieve the predefined strategic business objective. The IT or technological projects cannot be considered as a real digital transformation, the used technology such as artificial intelligence, internet of things, big data and data analytics are just a tool not a goal. These technologies should be used by the organization as a tool to perform the digital transformation journey.
Before starting the digital transformation journey, the organization should ensure that all the employees have an acceptable level of awareness and knowledge about the digital transformation and the difference between key terms such as digitization, digitalization and digital transformation. The organization need to have a selection mechanism to select and initiate the most suitable projects that enable the organization to implement a real and successful digital transformation. The organization need to differentiate between change and transformation, the first term (change) is mainly about updating or modifying (enhancing) the current performance based on the past performance of the organization, while the term transformation is mainly about creating a totally new future for the organization. Digital transformation is not about changing the processes or the activities from the manual form to the digital form, digital transformation is mainly bout changing the way of doing the business in order to create a new future to achieve the strategic objectives of the organization.
Each organization should have its own way of implementing the digital transformation journey, so there is no one fit all solution.
The above analysis provides an answer to the first question (What are the perceptions of the decision-makers in IT sector in Egypt on the digital transformation?), the organization should know:

1) The digital transformation is a strategic journey guided by the organization strategy, not a tactical activity nor a group of IT related projects.
2) There is a difference between digitizing, digitalization and digital transformation.
3) The technology and the IT infrastructure are just a tool to implement the digital transformation not the digital transformation itself
4) Change is bout enhancing and improving the current performance based on the past, while the transformation is about creating a new future for the organization.
5) The employee should have an appropriate level of knowledge and awareness about real digital transformation.
6) Implementing a group of IT related projects is a fake digital transformation, while the real digital transformation includes a transformation of different areas within the organization: the business model, organization structure, employee skills and competences, business processes, product (service) development and offering, stakeholder engagement and IT capabilities.

Based on the analysis of the participants point of view related to the second theme (Digital Transformation and Customer Centricity), the customer centricity concept is a critical concept in digital transformation as the ultimate goal of the business is to achieve a complete customer satisfaction.

The customer centricity should be the main guideline and principle that control and drive the digital transformation journey. The organization should promote the concept of customer centricity among all the employees within the organization.

The concept of customer centricity should be tailored according to each organization and based on the types of the customers. The customer centricity concept should guide the development of the organization strategy.

The above analysis provides an answer to the third question (What are the perceptions of the decision-makers in IT sector in Egypt about the relationship between customer centricity and digital transformation?) and fourth question (What is the role of customer centricity in digital transformation in IT sector in Egypt) of this research, the customer centricity is main driver of the digital transformation journey within the organization and each implementation stage should support the implementation of this concept. All the employees within the organization should understand this key principle and perform their activities in order to achieve it.

The digital transformation strategy should be built based on customer centricity principle.

The analysis and the answer to the second question (How the organization in IT sector in Egypt can implement a real digital transformation process?), will be illustrated and discussed in next section: The Proposed Digital Transformation Framework.

C. The Proposed Digital Transformation Framework

The proposed framework could be act as a guide to be used by the IT organization in Egypt to support and facilitate the implementation of a real digital transformation journey and provide them (the organizations) with the required processes through which they can implement the digital transformation activities.

The proposed digital transformation framework contains the following five layers:

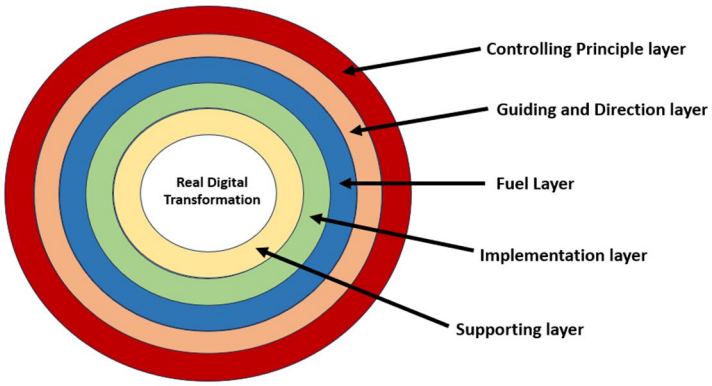


Figure 2. The five layers of the proposed digital transformation framework

1) The first layer

Controlling principle layer, this layer is the most critical and important layer in the proposed framework. This layer contains only one element, which is the customer centricity concept. This concept is the fundamental and core element in the proposed framework. Putting this element in the outer layer of the framework is an indication of its importance and message to the organization that without this layer the digital transformation activities will be implemented without any principle in mind. This principle acts as the rudder in the ship. Without this principle the digital transformation journey will be a ship without rudder. Every single activity related to the digital transformation should support the organization to implement the customer centricity concept and enable the organization to satisfy the requirements of its customers.

2) The second layer

Guiding and directing layer, this layer contains two items,

a) The first one is the organization strategy. As the per the analysis of the participant point of view and the researcher point of view, the digital transformation journey is not a tactical activity, but it is a strategic decision made by the top management of the organization. This strategic movement should be guided by the overall organization strategy and the specific digital transformation strategy.

b) Because digital transformation is a strategic movement within the organization, it cannot be done without a dedicated strategy, this specific digital transformation strategy is driven by the organization strategy.

3) The Third Layer

The fuel layer, this layer contains only one element, which is the innovation management. From the researcher point of view, the innovation management was added into this layer in order to support the organization to create a totally new future for the organization. This layer is the key element that differentiate between the real digital transformation and change. Without this layer, the organization may start (initiate) an infinite series of IT related projects and consider this effort as digital transformation, while in fact the organization is a victim of fake digital transformation. This layer is a key differentiator between real digital transformation and fake digital transformation.

4) The Fourth Layer

Implementation, this layer contains five elements:

a) Project management: the project management elements is the name used to represent the usage of project management, program management and portfolio management concepts. The organization may use and suitable project management guideline or methodology such as: PRINCE2, PMBOK and ISO 21500. The project management methodology will enable the organization to organize its activities and assess the performance and the progress of the performed activities and compare the actual achievement to the planed one. The project management element will contain another sub-element such as benefit management which is part of the program management, and the value management which is part of portfolio management.

b) Change management, this element will enable the organization to move from the current state to the desired future state in smooth way. The change management methodology will enable the organization to control and manage the expected resistance during the implementation of the digital transformation projects.

c) Technology, this is new technology that could be used as an implementation tool to implement the digital transformation journey. Technology may include: AI, big data, blockchain, IoT, and 3D printing. The technology is just a tool not a goal of digital transformation. The goal is not to create a new website, or implementing an ERP system, but the goal is to satisfy the customer. Considering the technology as just a tool will support the organization to focus on implementing a real digital transformation not a fake one by just completing a group of IT related projects.

d) Resources, this is the fourth, this element includes all the required and needed resources (other than technology and human resources) to implement the digital transformation journey. Resources may include: financial resources, tool, material and infrastructure, business process, policies and procedures.

e) Human resources, this is the fifth element in the implementation layer. The aim of separating the human resources away from the fourth element is to give more focus to the importance of the employees within the organization. Without these employees the organization will do nothing. The employees will use all the other types of resources and the new technology and apply all the available principles, guidelines, methodologies in order to successfully implement the digital transformation journey and deliver the required benefit and value to the organization and its stakeholders. So, the organization should take care of the employee and work to provide them with the required knowledge, skills, tools and techniques in order for the employee to successfully implement the required digital transformation activities.

5) The Fifth Layer

Support layer. This layer will facilitate the implementation of the previous four layers and contains three elements:

a) Internal business environment, this element includes the organization structure which define how the departments within the organization is organized and collaborate with each other and the organization culture

b) The external business environment, this element includes the relation between the organization and its external partner such as: suppliers and distributer, the relation between the organization and the government entities, the political, economic, social, marketing conditions and environmental conditions.

c) The third element in this layer is the legal and regulations developed by the government. This element may include the governance and compliance policies developed by the government and/or any other external entities.

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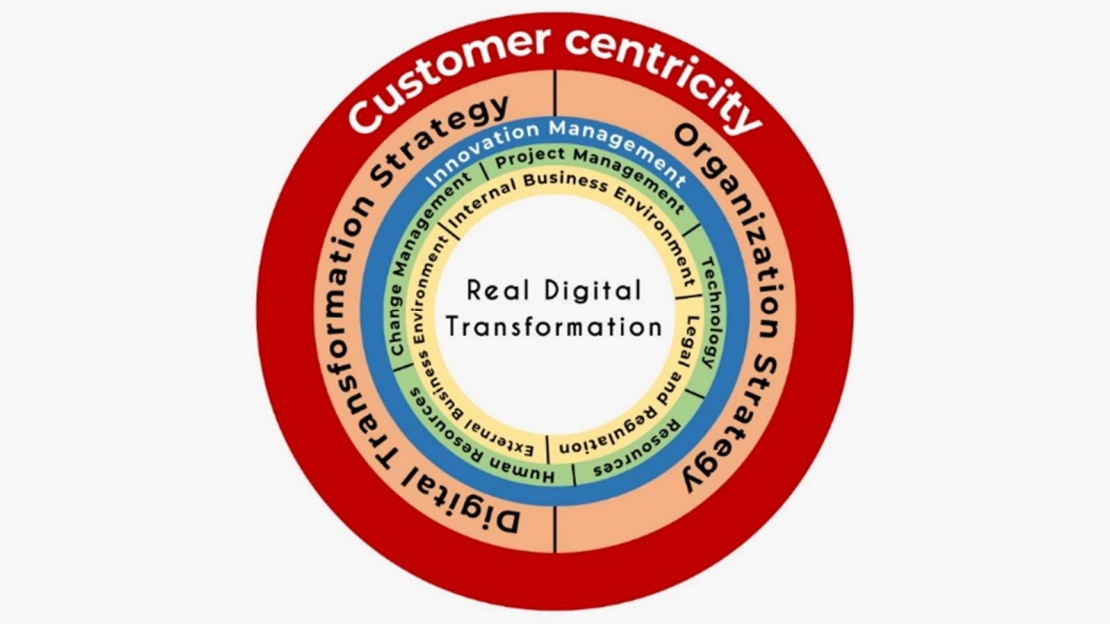


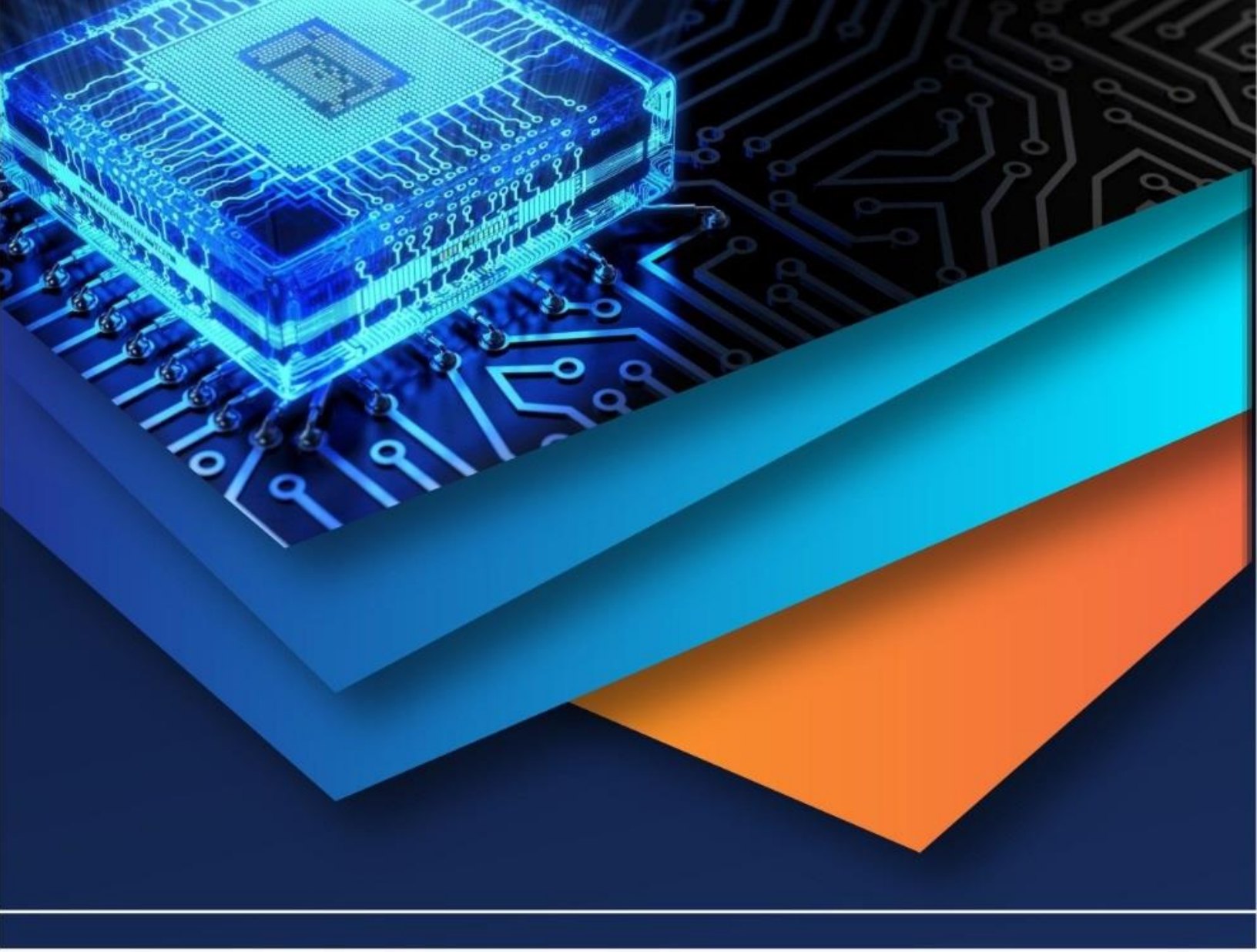
Figure 3. The components of the proposed digital transformation framework

The proposed digital transformation framework provides an answer to the second question of this qualitative research (How the organization in IT sector in Egypt can implement a real digital transformation process?), and this will achieve the second objective of this research (To know the processes through which the IT companies in Egypt can implement a real digital transformation).

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