The digital organizational transformation project initiatives and effective strategies to address the challenges: Exploratory multiple case study approach

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ABSTRACT

The digital organizational transformation success rate is questionable because organizations either know a little or unable to formulate favorable strategy that may cover transformation holistically. Consequently, organizations may abandon their transformation programs. This paper aims to explore how organizations develop strategies for digital organizational transformation to be successful. An Exploratory Multiple-Case Study Approach was adopted to proceed with our research conducted so far. Four organizations within the Public and Private sectors that took the initiative to be transformed digitally were selected to conduct multiple case studies and further analysis to produce multiple themes, and descriptions leading to a deeper understanding of the complexity of strategizing digital transformation. The major issues/challenges confronted by the organizations were found concerning huge operational costs, transparency, customer and competitor pressure, ineffective processes, organizational culture, and the emergence of new technologies and platforms. The organizations under study developed strategies to address the challenges that were more concerned with people, processes, and technology. Moreover, the research findings reflect that the organizations that adopted an open strategy approach for planning and implementing major technological change were found successful in their transformation initiative by ensuring inclusion and openness in the digital transformation strategy, whereas organization that adhered to a close

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strategy approach were failed to achieve the objective and goals of the digital transformation initiatives. The current study is unique in its own kind, focusing on exploring rigorously strategies developed to address the challenges of implementing digital organizational transformation. Furthermore, our research proposed a framework based on multiple case studies' outcomes termed as 6U's that may provide a deep understanding of the Digital Transformation phenomena in its true spirit.

1. INTRODUCTION

A plethora of innovative technologies such as Cloud Computing, IoT, Big Data, Cloudbased ERP systems, and AI applications are offering new platforms and solution opportunities in the current digital era [1]. New digital technologies offer both game-changing opportunities and threats to the prevailing as well as newly established organizations [2]. The rapid change increases ubiquities in technologies and consequently, the organizations are facing tremendous challenges for their survival and to be successful in the digital age [3-4]. Adoption of such technologies requires organizational work processes to be transformed to achieve potential benefits leading to organizational effectiveness. In recent decades, the phenomenon so-called "digital transformation" through new workplace technologies has emerged as the fourth industrial revolution [5]. Digital transformation is advocated for organizational success in a competitive environment [6-7], however, the success rate of digital organizational transformation is questionable as the organizations either know little or unable to develop rational strategy to cover transformation process holistically. Most organizations achieve poor transformation results due to strategy blindness. The past research reflects that management knows little about effective digital organizational transformational strategy formulation and implementation [8]. Moreover, in some cases, organizations don't have any strategy that could cover transformation holistically [9-11].

New digital technologies provide both game-changing opportunities and threats to the prevailing as well as newly established organizations [3]. Despite the availability of more mature and advanced innovative technologies, organizations are facing diverse socio-technical and other related issues and challenges that may impede digital organizational transformation projects success [12-14]. McKinsey's research stated that 70% of organizations failed to harvest the benefits of digital transformation initiatives and can not be termed as "successful organizational transformation". The rate of failure of organizational transformation was reported as 84% in past research [15]. In short, this kind of transformation doesn't happen accidentally rather, it's a digital transformation journey, and every journey requires a map. A clear roadmap for digital transformation is always driven by a digital strategy [16-17]. Scholarly communities from IS have been working on the issues of strategy for many past years [18-19] but as new information technologies emerge, new issues and challenges arise, which ultimately require new strategic process and intend to address them. It is evident that the digital transformation process in the context of Information Systems is not well understood [20-22] despite the fact that we continue to establish inadequate assumptions about how to manage and sustain digital transformation. This fundamentally raises questions about how digital transformation should be handled or managed to be successful. The Digital Transformation phenomenon being a complex, ambiguous, and challenging, requires an effective

strategy to be formulated on behalf of organizations for successful digital transformation implementation. Therefore, a primary conception for successful digital transformation is to adopt or develop a digital organizational transformation strategy in addition to the application of digital technologies and the economic conditions applicable.

Therefore, the focus of this study was on exploring strategic initiatives for strategizing digital Organizational Transformation. It is aimed at understanding digital transformation and how to formulate transformation strategies to achieve organizational goals. The finding of this research will further help the senior management for successful digital transformation implementation and to address issues/challenges that the organization may face in taking such initiatives.

After the introduction, the rest of the paper is structured into five sections. Section 2 highlights the past literature on organizational and digital transformation. Section 3 presents the methodology selected for this current study. Four research cases on public and private organizations are described in section 4 and section 5 presents the finding, analysis, and a proposed strategic framework for digital organizational transformation. Finally, section 6 represents the conclusion and future research direction for the current study.

2. LITERATURE REVIEW

2.1 Organizational Transformation

The "transformation" concept is one of the most popular notions for change in today's business environment as companies have recognized the need to achieve business objectives and solutions for complex challenges they are facing [23]. An early work by Kotter [24] shows that different organizational transformation phases and related errors with respect to each phase, but organizations are still unable to understand the underlying transformation conception; as a result, failure proportion didn't fall. Moreover, supporting McKinsey research, another report [25], "Leading change", after a decade from Kotter's [24] work, "Why Transformations Fail" published by Harvard Business Review, advocates that it is unable to bring significant change in the success rate for the transformation. Another study on Transformation by Ashkenas [26] asserts that failure is high because "we still don't know the difference between change and transformation".

Organizational change can be radical, or it may be incremental. The incremental change is referred to as changing the ways things are being done but at a slow pace. Transformation is a fundamental change and is supposed to be resulting from radical shifts. According to Ashkenas [26], change management is about implementing finite initiatives. On the other hand, the transformation differs, and unlike change management, it is not only focused on well-defined shifts but on reinventing the organization with different dimensions (role, strategy, firm structure), along with the development of new business models for the future with the intention of an increase in performance [23, 27-28].

Despite rapidly growing research publications relating to Digital Transformation currently, there is no commonly accepted definition of this notion [29]. Digital Transformation (DT) is the process

through which organizations use digital technology to enhance their core business operations, thereby radically altering how organizations operate and give value to consumers [30]. The integration of such digital technologies into organizations' operational work processes may require infrastructural changes for smooth operations of the organization. Digital Transformation requires "a change in leadership, culture and mindsets, attitudes towards risks, as well as new ways of working, new technologies, and a willingness to accept ambiguity and constant change" [29, 31-32]. Rogers [33] says that barriers impeding transformation success include "The final barrier to DX is a reliance on preexisting capabilities, including technology, talent, and culture …… Legacy culture remains unchanged, with mindsets and behaviors that are rooted in top-down, command-and control leadership."

Digitization and digitalization are two terms that are closely associated, but both have different concepts. Digitization is the automation of already established manual and paper-based work processes from analogue artefacts to digital format. Digitalization has a broader concept refers to the use of digital technologies to develop a new business process to create customer value [34-36]. Now, the most recent discourse in Information System strategy focuses on the concept of strategizing [19, 37-38]. Strategizing about process, exploration and exploitation dimension, knowledge and human beings [39].

The three perspectives to build further understanding towards digital Transformation are i) Regardless of organizational change, digital transformation should also be focused on strategic alignment of IT and business [40] ii) The digital transformation has fundamental change that affects different business units like strategy, product innovation along with leadership and different cultural dimensions [41] and iii) Digital transformation describes changes on both industry and organizational levels [36]. The digital transformation relates to digitalization, where organizational transformation is introduced by technological advances. In IS literature, the concept of organizational Transformation with IT-enabled transformation is focused on the digital transformation of any organization. The digitally transformed organizations are more agile, innovative, people-oriented, streamlined, and their goal remains under continuous optimization [35].

2.2 Why do not Digital Transformation initiatives succeed?

No doubt, Digital Transformation is challenging [42]. Just not advanced technologies sufficient though applicable to address digital transformation issues/challenges, but the people's (i.e. Employees) right mindset and unflawed organizational practices and strategies matter a lot. According to a recent Forbes article, there has been an exponential growth in digital transformational projects in recent years, although many of the projects have failed [12]. A number of barriers for smooth Digital Transformation can be lack of vision and strategy, motivation, workforce, and their digital skills, and lack of cultural integration [43]. The success rate of such a transformation is not encouraging. According to McKinsey research, 70% of organizations fail to be digitally transformed. Consequently, most organizations abandon their programs due to a lack of knowledge and practices on the organizational end [44]. Similarly, Sutcliff et al. [13] report a 70% failure rate due to a lack of planning by top management and insufficient resources. Furthermore, Forth et al. [45] from the Boston Consulting Group conducted a study and revealed a 70% failure rate of digital transformation; however, it can be reduced by adopting integrated transformational strategies.

Therefore, during the last five years, research has revealed more digital transformation failures cases than successful ones [15, 46-47], and senior management has been unable to strategize effectively to mitigate such failures. Such a situation is questionable. Rogers enlightened the readers about different barriers to digital transformation, for example, lack of a shared vision, lack of clear priorities for growth, emphasis on planning over experimentation, use of business-as-usual (BAU) processes, and no change in capabilities etc [33].

Digital Transformation, as its notion reflects, it is a massive change process. Any change to be implemented in origination is not so easy but a difficult task [48]. In such a transition phase, the organization may face tremendous issues and challenges [21]. Past research studies reflect that organizations adopt change at a slow pace and consequently decelerate the adoption and implementation of digital transformation strategies as an outcome [29, 31]. To address such a radicle change expected due to digital transformation, the organization needs to respond appropriately to such potential changes to be induced by developing and pursuing adequate strategies to ensure smooth transformation implementation. Kraus et al. [29] reported that different research studies "… claim that there is a general misconception that technology drives DT when, according to the authors, it is a strategy instead". The facts discussed so far led to the following questions to be addressed in our study.

Q1. Why do organizations take transformation initiatives, and how are those being digitally transformed?

Q2. What strategies concerning people, process, and technology were developed by management to get organizations digitally transformed?

3. RESEARCH METHODOLOGY

This research study is qualitative in its nature, so the case study approach seems to be more suitable for conducting this study. The case study is best suited when research questions require a comprehensive understanding of social or organizational phenomena [49]. Moreover, it is appropriate when a researcher needs to study a phenomenon in a natural setting and figure out what or why it happened [50-52]. In a case study, the "case" is an important aspect rather than the method by which the case is operated [53]. Multiple case studies should have at least one question, however, they may have several questions [54]. Our study has addressed two questions mentioned at the end of the literature review. In the qualitative research paradigm, the research question drives the study's research design [50, 55] to answer the questions of what or how. It may enable the researcher to collect data from the participant dialogue and creates different themes for the exploration of the data [56].

To understand the critical phenomena under study depends on choosing the cases that seem to be best suitable and fit well [57]. There is a consensus among researchers that the purpose of a particular study should guide how the cases are selected [58]. An exploratory multiple case study design was adopted to conduct four mini-case studies in private and public sector organizations in Pakistan. The

objective of conducting the multicase study is to examine how the phenomenon under consideration performs in different environments. There exists a point of view that multiple case studies may increase the generalisability of the data collection process [59].

The case selection process also matters a lot as it affects the outcome of the study, so the selection of cases for our study was carried out as suggested in relevant past studies. There are no precise rules regarding the number of cases to be selected in multiple case study research. According to Eisenhardt [60], four to ten cases may be worth whereas with fewer than four cases may lead to difficulty in generating a theory. Similarly, Stake says that "The benefits of multicase study will be limited if fewer than, say, 4 cases are chosen, or more than 10" [54]. Furthermore, he stated three criteria such as the relevance of the case to the quintain, case diversity across contexts and cases support learning about complexity and contexts for the selection of cases. Moreover, by applying the unit of analysis (i.e. Cases), the rigor and relevance of the study can be enhanced leading to deeper insights into the phenomena under investigation [54, 59, 61].

Concerning sampling, it is defined in qualitative research broadly as "the selection of specific data sources from which data are collected" to address the research objectives [62]. Merriam suggested non-probability sampling technique when the research study intends to explore what is occurring or occurred [63]. Purposeful sampling was used which is a preferable approach when conducting multiple cases [64]. Patton highlights the significance of selecting informationrich cases, emphasizing the effectiveness of purposeful sampling in qualitative research [58]. Researchers aim to ensure that they are not oversimplifying the situation. The process of gaining these assurances is called "Triangulation" [54]. He further added that "Triangulation" has been generally considered a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation. Different kinds of "Triangulation" have been suggested for multicase qualitative studies [65]. The Triangulation process was adopted (i.e. Interviews, Documentation, Direct Observations) to strengthen the overall robustness of the research findings of our study.

The Organizations are chosen based on the established criteria. Criteria include. First, all organizations were on the radar where transformation is through the adoption of new digital technologies like Cloud, IoT, Cloud ERP, or self-developing information systems. Additionally, only those organizations where transformation causes a broad or major change in people (roles & responsibilities), processes, technology, and organizational structure. Finally, Organizations that fulfill these criteria and are willing to provide interview responses and data access.

For data collection, face-to-face interviews were conducted preferably to collect information required following an interview guide. Prior to conducting interviews, participants were emailed interview questions and the purpose of the study as per the case study protocols. A total of 27 interviews were conducted with both top-level and middle-level management (See Appendix A for interview details). Interviews were recorded with the participant's permission and written down properly to be verified Moreover, in addition to "In-depth interviews", the other sources used were "direct observations" and "documentation. The rigorous analysis of these case studies was carried out following a six-step method

(see Creswell, 2009) to develop the themes, extracting different patterns and descriptions to understand the complex nature of strategizing digital transformation and relevant issues and challenges. Creswell's [66] data analysis methodology for analysing cases A, B, C, and D is depicted in Figure 1.

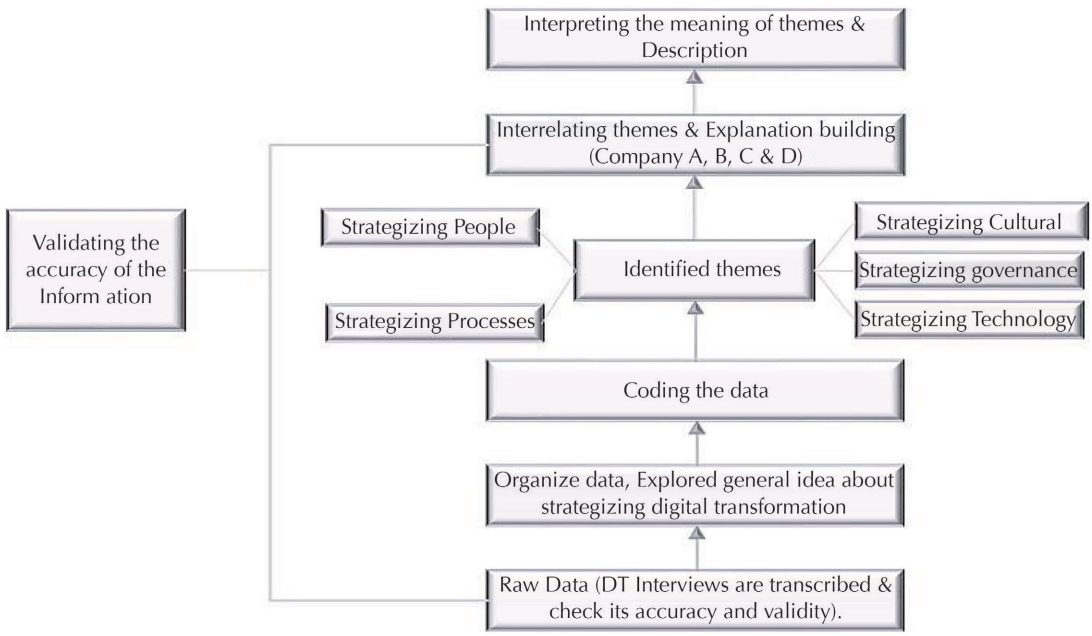


Figure 1. Author's Illustration of Creswell's Research Process Adapted for the Current Study.

A brief about case studies carried out are as follows.

4. ORGANIZATIONAL TRANSFORMATION: CASE STUDIES' DETAILS

- **Case I: Organization A (Banking Sector-Micro finance bank)**

Organization A is Pakistan's largest digital bank, with more than 27 million registered and 10 million active digital wallets. The whole business is based on loan lending operations. Organization A began its operations in April 2012 and launched branchless banking in November 2012. The inefficiency of the manual loan origination system affected Bank's performance as it was unable to cope with customers' rapidly growing demands. For example, when a loan was offered to any customer, this process was too slow and hectic that a customer had to wait at least 15–20 days from the loan initiation process to the loan approval and finally disbursement of the funds. To address the situation, the top management decided to digitalize their processes to fulfil customers' needs at their best.

- **Case II: Organization B (Commercial Bank)**

Organization B is one of Pakistan's most well-known commercial and retail banks. This Bank represents companies with annual revenues ranging from $60 million to $90 million after taxes. Organization B realized that the legacy system in operation hardly fulfilled today's banking functional requirements and customer needs which severely affected bank performance. Organization B was facing a variety of issues relating to its banking operations and product platforms. One of the driving forces behind Organization B's digital transformation is the creation of new integrated procedures that may reduce operating expenses and processing time across all segments.

- **Case III: Organization C (telecom organization)**

In 2007 Organization C started a GSM network in Pakistan and provided cellular data and mobile voice services using 2G, 3G, and 4G technologies to the Pakistani market. Back in 2007, organization C had only a 2% market share due to non-effective work processes in practice. Top management decided to transform its processes to control costs, improve operational efficiency, and implement innovative business models to develop new on-demand services quickly. Currently, Organization C has the largest 4G subscriber base and the widest 4G coverage, with 40.12m total cellular subscriptions across the country.

- **Case IV: Organization D (Government organization)**

Organization D is a Ministry of IT, an affiliated department. Lack of communication with internal or external stakeholders was a big challenge to be resolved. The government's goal was to overcome impediments causing internal inefficiencies in all ministries and related departments through electronic administration. To cope with challenges, the government desired a paperless office, a transparent work process, monitoring and tracking records and finally, to avoid damaging or theft of current and archival paper-based records. So the government took a decision to plan and implement an E-office suit to address the issue. It focused on how different ministries of the Government of Pakistan can be transformed through an E-office implementation.

4.1 Why Organizations take the initiative to be transformed? A Need analysis

Based on an interview with the senior management and the available documentation, different issues/challenges (i.e. internal and external) were chalked out, and further need analysis was carried out for a comprehensive understanding of each organization's needs. (see Table 1).

Top management of each organization made decisions to transform its organization and placed it at top priority in their agendas. Organization A decided to provide financing to individuals for a new startup, address the challenges of providing financial services located remotely, improving work processes to be efficient, cost-effective, timely, and paperless. One of the senior managers said.

> *"…our current infrastructure could not meet customers' requirements at remote locations in the required time... moreover*
> *Our loan approval process frustrated our customers as well as our employees… Further, this process takes up to 15 to 20 days …"*

Table 1. Need Analysis for Org. A, B, C & D.

Need Analysis			
Organization A	**Organization B**	**Organization C**	**Organization D**
Reduce higher operational costs	Replacing the Legacy system with a modern business system	Merger and acquisition	Paperless environment
Efficient and effective processes to overcome time-consuming and laborious lengthy work processes	Huge operational Costs	Reduction in operational cost	Transparency at work
Paperwork reduction	Exceptional customer support	Overcoming lower market share	Monitoring and record tracking
Extending access to remote locations	Competitive advantage	Addressing inefficient processes	Effective office management
Gaining competitive advantage	Improving overall efficienc	Transforming legacy infrastructure	Data security to avoid theft & loss of old record
Offering Digital Products and services	Integration with third-party applications	Managing cultural differences	
Fulfilling customer demands		IoT Platforms	
Customer satisfaction			

As Organization B is concerned, the top management decided to implement new systems to enhance customer service levels to address the problems it was facing. In the first phase, the COBOL-based core Banking solution (UniBank) was replaced with Oracle FLEXCUBE and introduced Islamic banking processes. In the second phase, in 2019, the Bank focused on launching new products using digital platforms to extend its services to its customers. Senior managers form organization B said.

> *"The legacy system consisted of very old software (Unibank), which was not able to handle the data management and customer compliance.*
> *Our operational costs were extremely high in terms of both money and time as compared to our competitors like HBL, MCB, UBL and Allied bank …"*

Organization C addressed its existing issues/challenges by acquiring a 100% stake in another telecom organization. At the outset of this merger and acquisition, the senior management encountered a variety of challenges in managing their business operations and activities. The top management realized the situation and decided to transform the organization digitally. Firstly, the mergers and acquisitions, and secondly, launching 3G, and 4G services along with IoT platforms at an early start of 2014. One of the senior managers said.

> *"The focus of internal organizational transformation is on controlling costs and improving operational efficiency. Further, to compete globally with technology, we acquired 3G, 4G licenses and moved towards building an IoT ecosystem to gain a first-mover advantage"*

Organization D initiated a project E-Office suit to overcome the issues/challenges. The project E-office was based on the Government to Government communication model. Though this project was initiated in 2004, however, it progressed gradually over the last decade. This project was interrupted and halted twice during the last two governments in power. Fortunately, the current government provided reasonable support to achieve its goals. The use of an e-office digital workspace solution replaces inefficient paper-based systems with more efficient electronic ones to gain transparency, effective office management and enhanced communication between all stakeholders. One of the senior managers from organization D said

> *"In a legacy system, the physical transfer of official documents takes a long time and requires constant monitoring from desk to desk before top authorities make a final judgement*.

Moreover

> *Slow file transfer within government offices causes many important decisions to be postponed, as well as issues such as file theft and loss is a common thing."*

4.2 Top Management Strategies for Digital Transformation (Organization A)

On the basis of interviews, available documentation and informal discussions with the team members involved in the process of digital transformation, the major aspects identified to be part of the strategies developed are depicted in Figure 2.

The strategic decisions are taken by the top management for Organization A's transformation comprised of the following major steps mentioned as under.

4.2.1 Establishing Digital Transformation Department

Top management realized that the implementation of digital transformation demands a shift in thinking about business, processes, technology, and people responsibilities. These broad changes will be difficult to handle without proper strategic planning and further control. So, a "Division" named Digitalization and PMO (DPMO) was established and entrusted the responsibilities of managing and reinforcing the transformation culture at every phase of this project.

4.2.2 Effective Teams Development and Management

- **DPMO Team formation**

The new division established to manage the digital transformation process hired highly skilled people, including the President Digitalization, VP Digitalization, Project Manager, IT manager and project

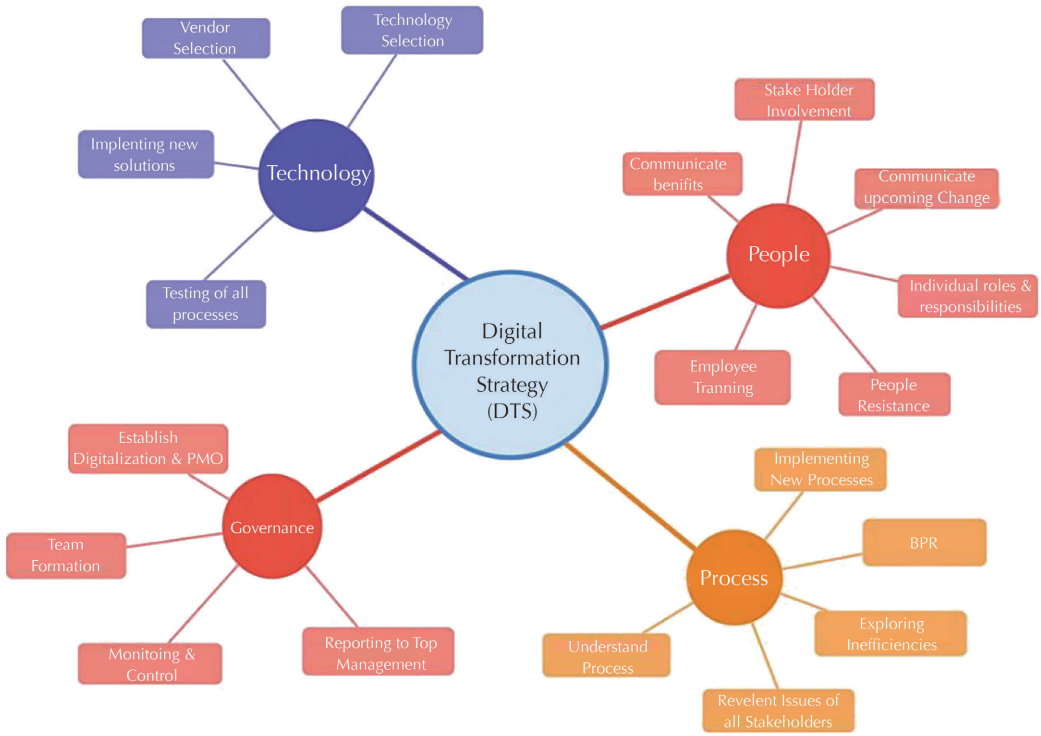


Figure 2. Digital Transformation Strategy for Org. A.

coordinators. Furthermore, external vendors were contacted as per the needs of the project. One of the senior managers pointed out the strategy for team formation and said:

> *"… Digital transformation team based on individuals from different departments. They highlighted what process they are using, which types of problems or challenges their department faces through the legacy system …"*

- **Cross functional Digital Transformation (DT) team**

A cross-functional DT team was developed, comprising chief executives of different departments. This team has entrusted the responsibility for highlighting the deficiencies in the work processes of their respective departments, causing inefficiencies and needing improvements.

4.2.3 Ensuring effective bilateral communication

The Top Management encouraged effective two-way communication that helped to reduce the gap and develop a good rapport between leadership and employees. Moreover, this strategy facilitated communication needs, exchanging ideas, resolving conflicts, and creating a sense of ownership and job satisfaction for employees. One of the senior manager's points of view is mentioned below.

"… Top management communicates DT needs, vision and goals through brainstorming sessions …… and ensures the provision of a friendly environment and direct access to the CEO. Employees don't need an appointment for a meeting …"

4.2.4 IT Strategy

The IT strategy concerning the selection of state-of-the-art available technology and vendors was formulated. To redesign and re-engineer the whole process starting account opening to loan distribution, the management preferred to include Loan Originating System (LOS), Account opening portals, and Internet and Mobile Banking Platform for transforming the organization digitally.

"… for *digitalization, we focus on developing information systems, portals and application-based technology …*

… AKSA provide the best integration services of newly developed systems digital account opening and loan lending with our core banking system and the reason behind the selection of AKSA's digital platform is the market position and history. AKSA is the champion in Industrial Application Awards at P@SHA ICT Awards."
… we collaborate with Paysys to launch our Mobile App and Internet Banking. This will minimize client footfall at branches …"

4.2.5 Business process re-engineering and management

The strategy formulated also focused on identifying the inefficient business processes to be re-engineered. The relevant issues and complexities in current business processes surely be addressed, however, after discussing with relevant stakeholders and finalizing the changes required. One of the senior managers said:

"… We redesigned our legacy processes to active operational excellence and reduced processing time, travel cost, courier cost, paper cost …"

4.2.6 Stakeholder Management

The Top Management ensured direct access to the CEO to discuss workplace issues rather than seeking appointments. It helped to create friendly cultures to overcome bureaucratic barriers that may affect effective communication among the stakeholders. Moreover, the members involved in the DT team took responsibility for ensuring stakeholder participation in strategic decision-making.

4.2.7 Creating and promoting a learning culture

The top management strategized to create and promote a digital culture that may facilitate the implementation and acceptance of the digital change expected. Furthermore, the management took

necessary steps to fill the gap between IT and non-IT-trained individual's skill sets in order to foster a digital learning culture. The management also decided to reward employees with a better skill set and keen to improve their learning to be more productive. One of the senior managers said:

> *"… Digital transformation creates problems early on, and a collaborative learning environment assists employees in resolving challenges with the support of colleagues and friends …"*

4.3 Top Management Strategies for Digital Transformation (Organization B)

Organization B (i.e. Commercial bank) adopted a phased approach to be transformed digitally. In **Phase I,** the Bank switched to FLEXCUBE (i.e. Oracle-based solution) from UniBank, transforming all of the banking operations. In **Phase 2,** the Digital banking Division was established and launched a new platform for digitalization and offered Internet banking, SMS Banking, Mobile app, online account opening, Roshan digital Account, upgraded call centre, Customer Visit Management (CVM) launch, Online Payments channels for online buying. The interviews conducted and available documentation reflects that top executives and vendors jointly took on board the current issues/challenges and developed strategies after participative decision-making. The top management took different initiatives to facilitate transformation process in its true spirit. The major aspects included in strategies developed so far are depicted in Figure 3.

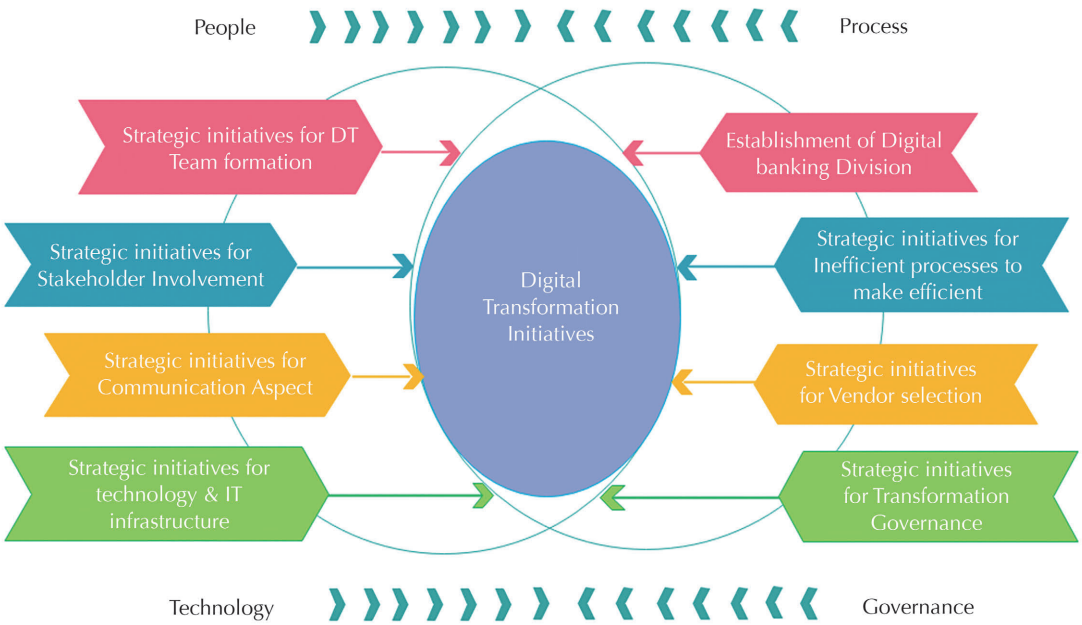


Figure 3. Digital Transformation Strategy for Org. B.

4.3.1 Vendor Selection

In phase I, top management defined criteria to choose suitable vendors keeping in view their historical facts. The criterion for selection comprises experience as a services provider, experience in providing core banking solutions, up-to-date banking solutions, employee training and post-implementation system support. The vendor named "Techlogix" was chosen as an implementation partner to do the needful. One of the senior executive mentioned the Vendor Selection strategy.

> *"… Choosing an ideal implementation partner is a challenging task … We define a selection criterion for choosing a vendor that includes vendor vast experience, up-to-date banking solutions, with in time limit and post-implementation support …"*

4.3.2 IT strategy

IT strategy was developed by Organization B, keeping in view its business strategy. It focused on preferring the best-suited available technology as a Core Banking Solution. FLEXCUBE was chosen as a Core Banking Solution and Internet banking capable of managing digital products such as Mobile apps, Online account opening portals, Roshan digital Account, upgraded call centre, Customer Visit Management (CVM) and Online shopping Payments channels. Moreover, the IT strategy also stressed for smooth implementation of FLEXCUBE and the digitalization of products at its best. Some seniors managers said about the IT strategy

> *… The focus of the IT strategy is to select the best banking solutions and provide support to Techlogix for smooth implementation …*
> *We chose Oracle's "FLEXCUBE" for core banking procedures because it addresses Unibank's issues, such as decentralized branch operations, high costs, and low customer satisfaction …*
> *FLEXCUBE offers rapid integration with third-party apps to encounter the demands of large banking ecosystems …"*

4.3.3 Digital Transformation (DT) Team formation

In phase I, the DT team consists of a 20-member from "Techlogix" (i.e. Vendor Side) and 15 members of Organization B with different roles and responsibilities. Such a Collaborative team was entrusted with the overall responsibility of implementing digital transformation initiatives. In phase II, under the umbrella of the digital banking division, Organization B preferred developing cross-functional DT teams consisting of the Country Head digital division, the Head of each department involved, the project manager, developers, and members of vendors. A senior manager outlined the strategy for team formation and stated.

> *"… Collaborative teams are formed to implement Oracle FLEXCUBE. A 20-person Techlogix team and a 15-person Askari team collaborated on a transformation project of Askari core banking processes …"*

4.3.4 Establishing Digital Banking Division

Top management of org decided to establish a new department in the organizational hierarchy called the "digital banking division" for the digitalization of banking products to be launched. The Digital Banking division has entrusted the responsibility for overall planning and implementing a complete digital transformation project. One of the senior executives said:

> *… We introduce a new department in our organizational hierarchy called Askari digital banking division for the digitalization of baking products …*

4.3.5 Stakeholder Engagement

Transformation requires fundamental changes, so people's acceptance of such change may be problematic. The top management formulated a strategy to reduce employees' resistance to the upcoming change. In both phases, I & II, top management (Regionals heads) were involved in planning or strategizing rather than operational staff. Informal discussions with heads revealed that the Bank's senior management was making all the decisions and putting them into action. It seems to be a centralized approach. Senior management picked key stakeholders from each department to be part of DT team, with different roles and responsibilities.

> *"… Our digital transformation team is made up of 15 individuals who represent practically all of our bank's departments.*
> *… We conduct research with the help of a research organization called team-up, which looks into what features and options our customers want in the mobile application …*
> *… Our Learning and Development department is constantly focusing on stakeholder engagement and training employees on how to use new systems …"*

4.3.6 Ensuring Effective Communication among stakeholders

The strategy developed for ensuring effective communication focused on explaining and updating staff and customers about the dire need for such digital transformation addressing the questions like why Organization B is moving toward the digitalization of banking products. Moreover, they also communicated with the stakeholder about potential benefits likely to be achieved. The objective was to inspire and motivate employees leading to eliminating employee resistance. One of the senior managers talked about the communication aspect and said.

> *"We have already communicated with our employees about the deployment of FLUXCUBE and have become a part of Askari Bank's vision, as stated in the bank's manual for 2008 and 2009.*
> *Internally, we communicate the process modifications through circular and meetings, emphasizing the benefits that will be achieved as a result of the present digital transformation."*

4.3.7 Transforming inefficient business processes

The strategy developed during phase I encompasses replacing legacy processes with efficient ones re-engineering those keeping in view best practices prevailing in the banking sector. The objective was to implement redesigned processes adopting the FLUXCUBE information system as a core banking system. In phase II, organization B preferred a customercentric approach as a strategy for digital transformation to be effective. Some digitalized banking products, such as Internet Banking, Mobile Banking, online account opening, IVR-based customer call centres, and online digital payment channels, have been implemented, while others are in the process of being digitalized. One of the senior heads shared the implementation approach and said.

> *"... First, we identify gaps between products and processes. After that, we design new processes for each product, and then we focus on implementing them at each branch one by one …"*

4.3.8 Transformation's Governance

In order to monitor and ensure that the transformation process is smooth and up to mark, Audit teams are formed after making a strategic decision by the top management. This was also an essential part of the strategy formulated so far. The teams were responsible for ensuring timely delivery of deliverables by Techlogix to achieve all major milestones. Such a decision appeared to be a good strategy for monitoring and controlling the overall progress. During Phase II, the digitalization was monitored by the country's Head Digital Banking Division, and they had to report directly to the CEO on a regular basis. The strategy developed appeared as an effective way to achieve milestones timely.

> *"… We ensure that our transformation is well-governed, Audit teams are formed for ongoing monitoring to ensure that the transformation process is up to mark or not …*
> *… The executive's role is to remove blockers that prevent digital initiatives from being completed on schedule …"*

4.4 Top Management strategies for Digital Transformation (Organization C)

Based on interviews, available documentation and informal discussions with the team members involved in the process of digital transformation, the following essential aspects of the strategies for org C were identified, shown in the below-mentioned Figure 4.

By maintaining open lines of communication between the top management and the senior level management from the different departments, identified the following points through discussion needed to be the plan for the digital transformation journey.

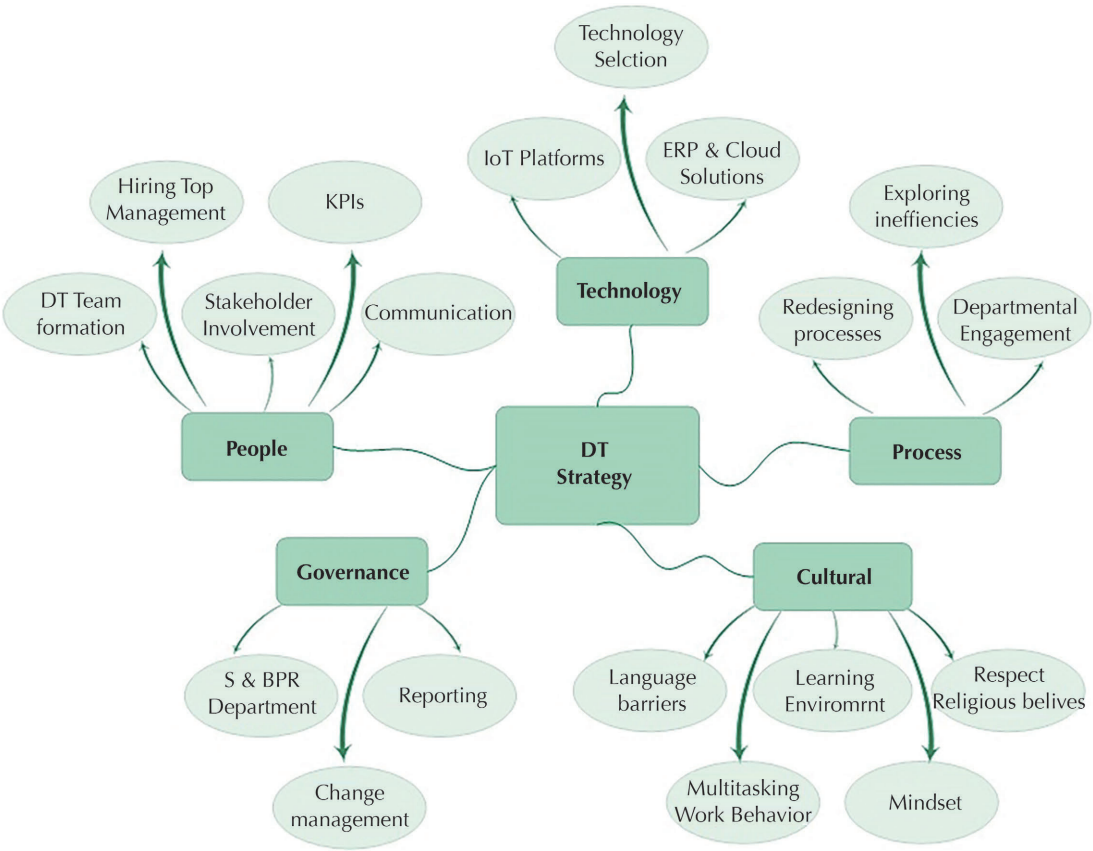


Figure 4. Digital Transformation Strategy for Org. C.

4.4.1 Establishment of S & BPR department (Strategy and BPR)

Top management at org C (telecom org) realized that the implementation of digital transformation required planning of present, transition and future state of the organization's people, processes, and technology aspects. These broad changes will be challenging to handle without proper planning and control. A new division was created to manage such complex, disruptive change called the S & BPR department. The major roles of the S&BPR department include the development of a transformation strategy, planning the cultural diversity, effective cross-culture communication, stakeholder involvement, creation of CFTs (cross-functional teams), technology selection and implementation of all redesigned processes. One of the senior executives said:

> *"… We introduce a new temporary department called strategy and BPR for controlling all transformation activities …*

4.4.2 DT Team formation

Organization C is a 100% owned subsidiary of China Mobile Communications Corporation. After the merger and acquisition, they prefer to hire human resources at the top level from China, including the chief financial officer (CFO), chief technical officer (CTO) and chief human resource officer (CHRO). CMPAK focuses on building a crossfunctional team formation approach. This team consists of both business and tech side individuals from the corporate sales department, IT department, procurement department, business department and Operations. One of the senior managers pointed out the strategy for team formation and said:

> *"… at the start, China Mobile corporation sends a Chief financial officer (CFO) from China for CMPAK; later on, the chief technical officer (CTO) and chief Human resource officer (CHRO) are also hired from china.*
> *… Top management focuses on making cross-functional teams (CFTs) and picking individuals from every department, and assigning roles and responsibilities …"*

4.4.3 Stakeholder Engagement

Organization C endorses the "One Company, One Team, One Dream" thought to ensure the Stakeholder buy-in transformation process. Moreover, another approach by Org C is to enhance stakeholder involvement by justifying digital transformation on both the operational and business level. Senior managers highlight the inefficiencies in their organizational process and their business growth to explain why the change is required. Further, they identify what will be changed, highlight the problematic process, and share the solution with relative stakeholders. One of the senior executives said that.

> *"… Our company believes that it's the people/ staff who needs to make a choice to change at the end of the day. So from the first day, we involve all the front-line employees in transformation decisions, plans and activities …"*

4.4.4 Effective Communication

Organization C focused on communicating DT benefits to the employees because employees' response against benefits is more than an advertisement regarding the upcoming change. Top management communication build strategy using benefits. After attaining the employee's attention towards change, then top management highlights DT's vision and explains why the change is happening and what will be changed. Moreover, in communicating upcoming changes, top management focuses on a multichannel approach. They not only rely on emails, but they also use the company intranet, internal communication platform (Slack), text messages, seminars, M3 family dinners, meetings and annual business conferences. One of the senior managers interviewed mentioned that.

> *"… We focus on communicating DT benefits to the employees because employees response against benefits is more than an advertisement regarding the upcoming change …"*

4.4.5 Internal Organizational Cultural change

After the merger, the next big challenge is to integrate the cultures of two different countries. Chinese culture, as well as their organizational culture, are way different from the Pakistani culture. Organization C focuses on transparency and openness in the organization. Top management shares the digital transformation strategy from top to bottom level employees and provides a platform for employees to share their ideas. The cultural initiative focuses on creating a balanced learning environment, Resolving language barriers, and implementing multitasking work behavior. Moreover, Chinese top management also tries to adopt the culture of the Pakistani people. Sometimes, they dress up in Pakistani dress on special occasions and show tremendous respect towards employees' religious beliefs. One of the senior managers pointed out.

> *… maintaining a balanced culture at the earliest phases is the most significant challenge. We faced a language barrier and found relaxation towards work in Pakistani people …*
> *… We focus on implementing a learning culture rather than a protective culture for change …"*

4.4.6 Technology & IT infrastructure

Organization C Strategic initiatives for technology & IT infrastructure include a selection of the best suitable latest technologies, Implementation of ERP systems, Implementation of cloud technology for CRM systems ,and introduction and implementation of locally hosted IoT platforms. New ERP and cloud systems are introduced to redesign all legacy and time-taking processes for internal process management, including ERP modules for Finance, Human resources, and procurement. Manufacturing and Cloud for CRM (Cloud-Based Call centers). More organization C introduced the first locally hosted IoT platforms with a number of IoT-based solutions, including Energy & Water Management, Cold Chain Monitoring, Smart Homes, Fleet Management, Fuel Monitoring, Bike Tracking, Smart Street Lighting, and Smart Poultry solutions.

> *"Our organization is the only operator that has successfully acquired a 4G license before the other operators like Telenor and Ufone. This approach provides us with a first-mover advantage to capture a significant market share.*
> *All existing IoT platforms, including AWS, Azure, and IBM, are hosted and managed by foreigners. So, we created a platform for internal and external clients named "OneNET Platform" on a local level."*

4.4.7 Transforming Inefficient processes

Organization C concentrated on exploring the inefficiency and issues in current processes with the consent of stakeholders as well as planning new business processes using an effective BPR approach. Org C tries to make its processes efficient and compatible with China Mobile corporation and follows the same benchmark set by them. Cross-functional approaches are followed to introduce new processes rather than a silo-based approach. Moreover, Org C has a lot of focus on employee KPI transparency. Portals are used to monitor and record employee KPIs. Performance is measured on the ground of the objective assigned,

and bonuses and promotions are offered based on accomplished tasks. An individual has a 60% salary and 40% based on the obtained KPI, which plays a significant role in sustainable transformation.

4.4.8 Transformation Governance

Top management ensures the transformation governance under the umbrella of S & BPR departments. Governance strategy focuses on what needs to be done, who will be responsible, and how monitoring and control protocols are established throughout the transformation journey. Moreover, the CEO and chiefs supervise the overall transformation journey, and regular reports on the project's current status are delivered to them.

4.5 Top Management strategies for Digital Transformation (Organization D)

The current case examines how the government of Pakistan transformed different government ministries through an e-office project. Organization D is a Ministry of IT-affiliated department responsible for the E-office planning and implementation. E-office is a complete suite that includes different modules such as Internal communication (IC), Human Resources (HR), Inventory and Procurement (I & P), Project Management (PM), and Finance & Budgeting. It began in 2004 but progressed slowly over the last decade. Approximately all 40 ministries are using the Internal communication (IC) module, and the rest of the modules are still in the development or implementation phase. On the basis of interviews and available documentation following strategic initiatives are identified for DT by Org D shown in Figure 5.

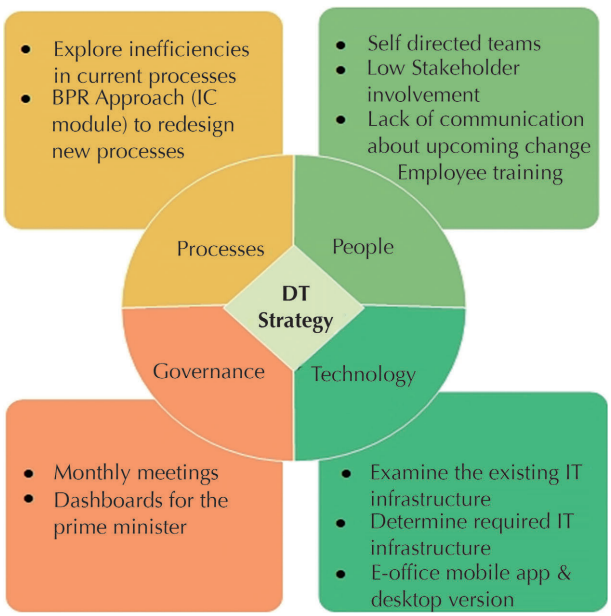


Figure 5. Digital Transformation Strategy for Org. D.

4.5.1 DT Team formation

The team creation processes show a lack of involvement from members of the government ministry that is going to be transformed. The digital transformation team is mostly comprised of the members from Organization D. The team for the e-office implementation consists of the Project Director e-office, Deputy director Implementation managers, Assistance, Respective ministry focal person, Head of IT department (in later stages). One of the Senior executives from company D said that.

> *"… For the planning and implementation of the e-office project, we formed our own team. Our team went to the ministry to deploy e-office and train the employees on how to use it."*

4.5.2 Stakeholder Engagement

Stakeholder involvement in the transformation of government ministries was minimal. The top management of organization D focus on a close strategy approach while planning and implementing the e-office project at each given ministry. Through such an approach, they just followed the government's directions and transformed the ministries without taking over the board. For implementing e-office, most of the time, the organization D team contacts other ministries for implementation, and sometimes ministries approach implementation. Once a focal person is nominated, the Implementation team further communicates and coordinates with that focal person. After that, the IT department of that respective ministry was involved and provided access to the data center where the e-office is hosted. Every ministry must adhere to the orders about the implementation of the e-office from the government of Pakistan. So resistance from any ministry doesn't matter. One of the senior executives mentioned that.

> *"… Our transformation team first approached the HOD/CEO of the ministry that needed to be transformed. A letter has been sent by us for the implementation of the E-office, and the heads of the relevant ministries are bound to respond …*
> *… Upon our request, a focal person is nominated by a selected ministry to represent their ministry for the E-office implementation project. The focal person should be designated as a grade 19 or 20 officer …"*

4.5.3 Efficient Communication

The success of a digital transformation journey is determined by how top executives explain the impending shift to employees. However, Organization D just carried out the government orders for the implementation of the E-office without communicating any upcoming change to all employees of that ministry.One of the senior executives said that.

> *"… The project of e-office is based on the government to government model and based on a set of defined rules & codes to facilitate the communication process …"*

4.5.4 Employee training

Organization D places a strong emphasis on staff training in order to enhance adoption and give employees a positive impression of the e-office information system. On a weekly and monthly basis, several training sessions are held to motivate and instruct users on how to use the e-office. The available documentation highlight that 8964 end-user were trained.

4.5.5 Process Redesigning

Business process reengineering (BPR) approach to radically redesign all organizational processes for IC module. This e-office suite consists of different modules but still, to date, only IC & file management module is implemented in all 40 ministries. The internal communication module (IC) supports all the processes related to document creation, documenting forwarding, and file movement, along with tracking of files and decisions within and outside of the organization.

4.5.6 Technology and IT infrastructure

Organization D focuses on examining the existing IT infrastructure at ministries and determining what additional IT infrastructure is required for the implementation of an e-office. Moreover, the technology-related strategy also includes the development of an e-office mobile app in addition to a desktop version. According to one of the senior IT managers from Organization D stated.

> *"… Initially, the e-office information system was built in Java, with WebSphere as the database and DB2 as the database. Now with the version updation of the e-office suite, we also update DB2 technology to Kubernetes and Docker system …"*

4.5.7 Governance of E-office project

Organization D clearly lacks a governance strategy. Project implementation began in 2004 but progressed slowly over the last decade. This project was halted during the last two governments; however, the current government has increased the pace of this project. As a result, just one module of the entire e-office suite has been deployed in 40 ministries in the last 17 years, and the remaining modules are in the early phases of implementation in a few selected ministries. Moreover, an interview with members of organization D reveals that every month, a meeting is held in which all ministry secretaries are invited to see the progress of the e-office project. In addition, dashboards for the prime minister and ministry secretaries were created to track the progress of the e-office project.

5. DISCUSSION

The findings of the cases involving three private sector organizations and one public sector organization have been rigorously analyzed with our study objective in order to develop a better understanding of

why organizations require digital transformation and what strategic initiatives are developed/adapted by top management to achieve digital transformation. Organizations met their defined digital organizational transformation goals and objectives, indicating that their transformation was a success. And on the other side, it's an absolute failure when no defined goals, objectives, or set criteria have been met. When some goals, objectives, and criteria are attained, it's either a partial success or a partial failure transformation project. The findings show that organization A, B, and C successfully implemented digital transformation and grabbed maximum benefits, whereas the transformation of government ministries by organization D were partially successful and grabbed some limited benefits. The success and failure of digital organizational transformation depend upon developing a holistic digital transformation strategy [8, 16]. Table 2 shows the outcomes of each case study. The open strategic approach adopted by organization A, B, and C facilitate top management to plan Revolutionary/fundamental change in people, process, and technology. On the other side, Organization D's close strategic approach to transforming government ministries, which fails to adequately strategize the people aspect, leads to delays and unfinished transformation projects.

Table 2. Outcomes of each case

Organizations	Strategic Approach	Nature of Change	Success/Partial Success/Failure
Organization A	Open Strategy	Transformation Revolutionary	Successful Transformation
Organization B	Open Strategy	Transformation Revolutionary	Successful Transformation
Organization C	Open Strategy	Transformation Revolutionary	Successful Transformation
Organization D	Close Strategy	Transformation Evolutionary	Partially successful

According to Kane, the actual key to transformation is people [31]. Inclusiveness and transparency [67-68] are the two dimensions of open strategy that work well for organizations (A, B & C) while designing a digital transformation strategy. Inclusiveness refers to the number of people who may participate in the strategy process, such as employees and stakeholders [67, 69]. As opposed to closed strategy, open strategy is more participatory and involves a large number of contributors in the strategy formulation process. The closed strategy has limitations, as only a small number of people are chosen to define the strategy [70], but the open strategy takes a different approach, involving senior, middle and junior management, as well as external individuals [67]. Case studies (org A, B & C) results reflect that the strategic initiative taken by top management is based on the conception of open strategy. These organizations ensure participation from every department and management level while planning and implementing digital transformation. Organization D, on the other hand, does not include any individual in the strategizing and implementation of the E-office project in any particular ministry. In summarizing, open strategy lead top management to develop a holistic, collaborative strategy for revolutionary transformation at the organizational level and close strategy lead top management to develop a secret/restricted transformation strategy for evolutionary transformation at module levels. Current findings

match with the result of past reach, which noted maximum benefits with collaborative/open strategy for revolutionary transformation [71] and minimum benefits with secret/restricted transformation strategy for evolutionary transformation at organizational and departmental levels [32, 72].

Previous research has shown that transformation is primarily concerned with dealing with the People, Process, and Technology dimensions [73-75], and such case studies have revealed two more dimensions along with these aspects that are organizational culture and governance. The organizational culture refers to values, beliefs, norms, and assumptions of members of an organization [76]. Organizational culture's role is an important aspect in shaping the behavior of organisational employees [77]. Handy stated organizational culture as "means deeply embedded beliefs and convictions in the organization" [78]. Lack of cultural integration may affect Organizational Transformation [43]. Peters & Waterman highlighted organizational culture as the key element for corporate excellence and success [79]. They further said that without a clear set of values, a company can not be imagined as an excellent company. Hie also noted that organizational transformation culture and governance have a favorable impact on transformation activities, whereas digital transformation governance has a partially more dominant influence on successful transformation [80]. Moreover, recent survey research found that organizational cultural factors explain 15.1% of opportunities and 5.6% of companies' threat factors [81]. Such findings reflect how can organizational transformation be affected by cultural values and norms as a key factor.

Case study results reflect that the strategic initiative taken by top management of organizations A, B, and C to strategize the following five major aspects for digital organizational transformation includes understanding about strategizing People, strategizing business process management, strategizing technology, strategizing organizational culture, and strategizing transformation governance. Conversely, Organization D lacks strategizing and some major aspects result in partial success/failure with limited benefits.

Digital transformation has become a high-priority demand on top management agendas since all firms face internal and external difficulties related to people, processes, and technology. The similarity in a theory of enterprise transformation by Rouse considers that value decencies drive organizations toward transformation [82]. Similarly, different issues and challenges related to Organizations A, B, C & D create value decencies that drive these organizations toward digital transformation. Deficiencies include the current organization state and expected state. The state is a set of variables that access "where the system is" and "where it will be". Similarly, the digital transformation at organizations A, B, C & D is to overcome deficiencies like manual paperwork, lengthy inefficient processes, huge operational costs, time-consuming, enhance transparency, cross-departmental integration and gain competitive advantage. These are some of the common needs that drive an organization towards digital transformation are also noted in the past research [83-84]. After recognizing the digital transformation need, the value of establishing a transformation office is reflected in the transformation initiatives from organizations A, B, and C. These organizations focused on creating transformation offices to control upcoming transformational change. Bharadwaj et al. noted that such a transformation office is accountable for leading complex digital transformation initiatives by developing a strategic path [85]. However, Organization D's transformation

approach does not include the establishment of a transformation office. As a result of this approach, their digital organizational transformative strategy has numerous loopholes.

Table 3 displays various considerations for strategizing the People aspect from each of the four organizations. The findings of the case studies also reveal that every digital transformation is fueled by your people. Top management of organizations A, B, & C developed a more understanding and focused approach for strategizing the people aspect compared to Organization D. Digital transformation and strategy was more about the people rather than anything else for these organizations support the conception presented by Gobble and Kane [31, 35]. When planning and implementing digital transformation, the senior management of those organizations took a cross-functional approach to team creation and ensured the involvement of all relevant stakeholders. Top management focuses on stakeholder engagement by explaining why the change is taking place, what will be changed and how this change will be implemented. Tabrizi et al. point out that a cross-functional team selection approach encourages all key stakeholders to participate in change management activities, which helps to reduce resistance and generate futile transformation results [86]. Building teams by representation from every department, motivating people toward adopting new change, better communication network, convey ease of use of the new system aided in lowering employee resistance and increasing the acceptability of digital transformation for organizations A, B & C.

Table 3. Considerations for strategizing People's Aspect.

S. NO	Considerations for strategizing People's Aspect	Organizations			
		A	B	C	D
i.	Build a Cross-functional digital organizational transformation team	✔	✔	✔	
ii.	Top management Engagement	✔	✔	✔	✔
iii.	Employee Engagement or Stakeholder Involvement	✔	✔	✔	
iv.	Communicate the upcoming change	✔	✔	✔	
v.	Tanning to employees	✔	✔	✔	✔
vi.	Employee intrinsic/extrinsic motivation	✔	✔	✔	
vii.	Mitigate resistance	✔	✔	✔	

Organization D, on the other hand, does not focus on the development of cross-functional teams. They have a single team, with no representatives from the government ministry that was transformed. The management follows a typical public sector attitude, and it seems they want to transform a ministry forcefully without a using collaborative approach. Employees were not encouraged to participate in any decision-making. This approach resulted in a lack of ownership and cooperation from this organization's employees during the transformation process.

Considerations for strategizing Business Process Management from the four organizations are shown in Table 4. The management of these organizations encourages to BPR approach to redesign the business processes. Organizations A, B & C successfully redesigned legacy processes with the processes owner engagement. BPR radically restructured organizational business processes by redesigning the flow of each activity [87], and exact transformation required the BPR approach rather than automation [88]. Conversely, organization D have partial success in redesigning legacy processes of Internal Communication and file management activities due to less involvement of the process owner. Moreover, in the case of Organization A, B & C, the top management strategy of keeping everyone informed about the transformation initiatives was determined to be quite successful. These organizations used a multichannel communication channel approach to communicate the upcoming change within the organization. Therefore, business process reengineering activities were also supported by the organization's information-sharing culture. Moreover, the results indicate that a process-driven approach for organizations A, B, and C is more successful than a function-driven approach. The use of a process-driven approach allows senior management to concentrate their efforts on integrating, aligning, and linking various processes and organizational activities to meet defined objectives. On the other hand, organization D adopted a function driven approach, resulting in attaining limited objectives.

Table 4. Considerations for strategizing Business Process Management.

S. NO	Considerations for strategizing Business Process Management	Organizations			
		A	B	C	D
i .	Exploring inefficiencies in existing processes	✔	✔	✔	✔
ii .	Process owner engagement during business process reengineering	✔	✔	✔	
iii .	Integration and alignment of all processes with technology, people roles and structure	✔	✔	✔	✔
iv .	Process-driven approach	✔	✔	✔	

Major considerations for strategizing technology from the four organizations are shown in Table 5. The research case finding for all organizations (A, B, C & D) shows that strategizing technology is not a problematic aspect as compared to strategizing people and processes. Technology is a driver as well as an important means for digital organizational transformation [82, 89]. These organization focuses on first technology evaluation and then selection of IT infrastructure and IS application as suitable with their business models. Organizations A and B engaged vendor services for digital transformation and established a vendor selection criterion. Organizations C and D have higher information technology skills; thus, vendor services aren't necessary for digital transformation in these organizations.

Table 5. Considerations for strategizing Technology.

S. NO	Considerations for strategizing Technology	Organizations			
		A	B	C	D
i .	The strategic role of IT department	✔	✔	✔	✔
ii .	Vendor selection procedure	✔	✔		
iii .	Technology evaluation and selection (IT infrastructure and IS application)	✔	✔	✔	✔
iv .	Alignment of IT, IS & Processes	✔	✔	✔	✔

Major considerations for strategizing transformation governance are shown in Table 6. The strategizing efforts to transform governance were determined to be successfully implementing digital organizational transformation. Top management ensures the transformation governance under the umbrella of established transformation departments for organizations A, B & C. On the other hand, for transformation government ministries, the monitoring of every aspect related to people, processes, and technology is ensured by the current government of Pakistan and organization D. Prior to the current government of Pakistan, the e-office lacked a governance strategy over the previous decade, which slowed the digital transformation of government organizations. Governance strategy focuses on what needs to be done, people, process and technology governance, who will be responsible, point testing of implemented processes and how monitoring and control protocols are established throughout the transformation journey. The previous study has also emphasized the importance of strategizing governance in enabling the transformation process and stressed the importance of such activities in the organization [80, 90-91].

Table 6. Considerations for strategizing Transformation Governance.

S. NO	Considerations for strategizing Transformation Governance	Organizations			
		A	B	C	D
i .	Transformation Governance (People, Process & Technology)	✔	✔	✔	
ii .	Monitoring & Control	✔	✔	✔	
iii .	Reporting to Top management	✔	✔	✔	✔
iv .	Pilot testing	✔	✔	✔	✔
v .	Post Implementation Auditing	✔	✔	✔	

Major considerations for strategizing organizational culture are shown in Table 7. Organizations A, B, and C's attempts to build a digital transformation culture were found to be beneficial in shifting employees' minds to a digital mindset. Organizations A and B have little trouble establishing a transformational culture, but the story of Company C demonstrates that transforming an organization where individuals from several countries work together requires more effort to build a digital transformation culture. Organization C is an acquisition of a formal Pakistani company by a China mobile corporation. The major task is to combine the cultures of the two countries while also developing a digital transformation culture. Senior management in any organization is responsible for creating a transformational culture [92]. Strategizing cultural part for organizations A, B, and C focuses on creating a balanced learning environment through the implementation of multitasking work behavior, removing language barriers, and encouragement on new ideas through the participation of employees. Conversely, organization D lacks the strategizing transformation culture aspect and just follows government directives, attempting to reform ministries without creating a learning atmosphere or enlisting important employees' participation. Past literature has also emphasized the importance of strategizing culture in facilitating the transformation process, with employees encouraged to generate innovative ideas and show their participation through building a digital culture [93-94].

Table 7. Considerations for strategizing Organizational Cultural.

S. NO	Considerations for strategizing Organizational Cultural	Organizations			
		A	B	C	D
i.	Creating a learning environment	✔	✔	✔	
ii.	Open participative culture	✔	✔	✔	
iii.	Stakeholder mindset to embrace change	✔	✔	✔	
v.	Customer Care	✔	✔	✔	

5.1 Proposed Strategic Framework for Digital Organizational Transformation

The proposed current strategic framework for digital organizational transformation is based on the findings of four case studies carried out in four different organizations, as depicted in Figure 6. This study proposes a two-step strategic framework for digital organizational transformation. The first step focuses on understanding the need and providing a business justification for the digital transformation. The second step of a proposed strategic framework for the current study focuses on the development of digital transformation strategies by understanding complex transformation phenomena in terms of people, processes, technology, governance, and culture. The current study first explored that the need drives organizations towards transformation, and that need for digital transformation vary from organization to organization. According to Rouse's theory of enterprise transformation, organizations face value deficiencies, which forces them to transform digitally [82]. Once a company recognizes the need for transformation, it must provide a business justification for why digital transformation is appropriate for

them [95]. Not every technology or solution is suitable for every business. Next, the current study explored that organizations develop transformation offices and transformation teams to control upcoming change. Such a transformation office is accountable for leading complex digital transformation initiatives by developing a strategic path [85].

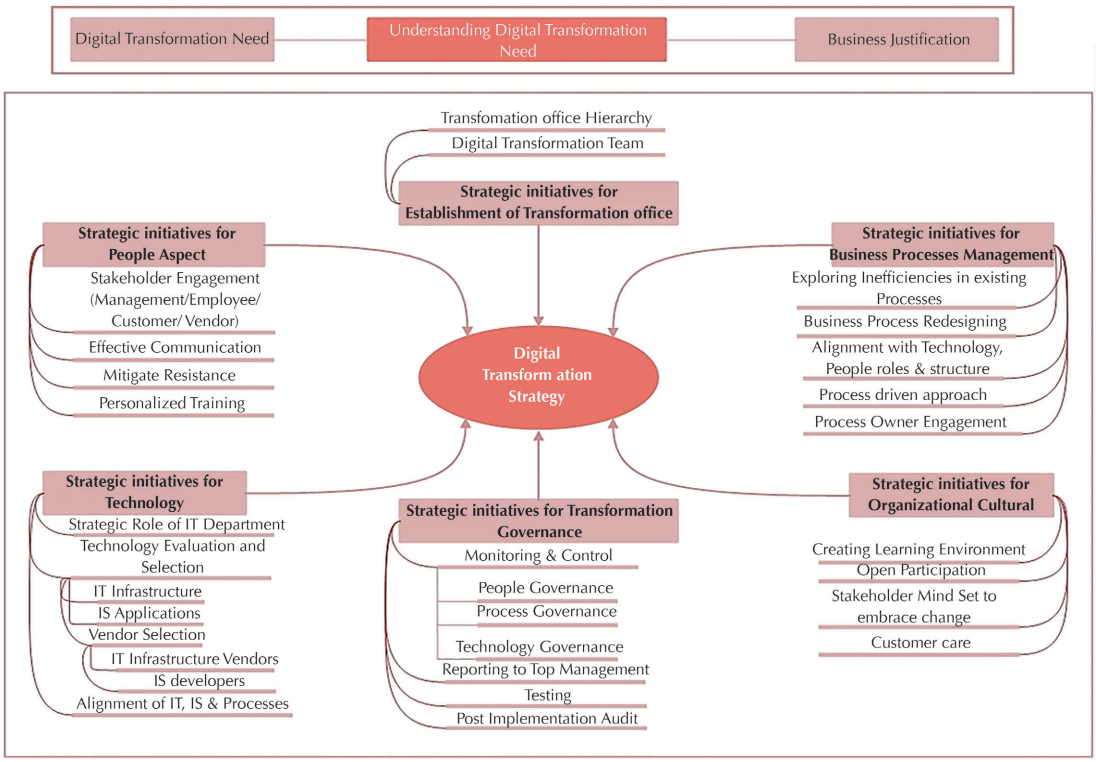


Figure 6. Proposed Strategic Framework for Digital Organizational Transformation.

People are one of the most problematic areas of the transformation process and must be strategized well ahead of time [31], the current study explored various critical aspects of people that must be strategized for effective people transformation management. This included strategizing to ensure "stakeholder engagement", "effective communication", "mitigate resistance", and "effective training". After people, strategizing business process management is the second most difficult part of the transformation. This approach focuses on redesigning legacy processes into digitalized, integrated ones [96]. Strategize BPM includes exploring inefficiencies in the current process, Alignment with Technology, People roles & structure, Process-driven approach, and Engagement of the process owner. The third proposed aspect of digital transformation that needs to be strategized is technology or IT infrastructure. Selected digital technologies should be able to support overall business objects and justify the need for transformation with respective technology [97] and overcome the issues of technology renewal between existing and new workplace technologies [98]. The major role of the IT department focuses on providing support in

designing strategies for technology/information system selection along with the provision of required IT infrastructure. Strategizing technological aspect includes the strategizing role of IT, Technology Evaluation and Selection, selection of vendor, IT infrastructure, information system application and alignment of IT, IS and processes. The fourth aspect of digital transformation focuses to strategized the governess of the digital transformation project. The Digital Transformation Governance Ensure that the transformation project's strategic objectives and goals are met and that the project's implementation is successful [99-100]. Strategizing Digital Transformation Governance includes monitoring and control (activities. People related, Process related & Technology related), reporting to top management, testing and post-implementation audit Auditing. The fifth aspect of digital transformation focuses on the strategized organizational cultural management aspect. Establishing a digital culture within the organization reduce the resistance and increase the adoption of the newly implemented system [94]. Strategizing cultural management includes creating a learning environment, open participation, stakeholder mindset to embrace change and customer care.

A comprehensive review of all four case studies findings and proposed framework for strategizing digital organizational transformation suggest that top management must "understand Digital transformation aspects" in order to develop a successful transformation strategy. Top management's lack of understanding and failure to strategize digital transformation aspects leads to transformation failure. Thus, to emphasize the critical nature of Understanding phenomena, the current study also proposed 6 U's for understanding strategizing digital organizational transformation. Figure 7 below depicts the proposed 6 U's.



Figure 7. 6 U's for Understanding strategizing Digital.

6. CONCLUSIONS

The main objectives of this research were to explore what are the strategies developed or adopted by the management for digital organizational transformation. To achieve these research objectives, the inductive method was used because the research is centred on understanding the complicated phenomenon of strategizing digital organizational transformation. A qualitative approach, namely a multiple exploratory case study design, was adopted for this study to answer our research question. The current study includes four mini-case studies in Pakistan's private and public sectors. The data was gathered using an interview guide. Three main sources were used in this study for data collection "In-depth interviews", "documentation", and "direct observations". The rigorous analysis of these case studies through Creswell's method to develop different patterns, themes, and descriptions contributed to a better understanding of the complex nature of strategizing digital transformation.

The current study finds that organizations are confronted with a variety of internal and external issues and challenges that drive them to digital transformation. Some of the internal and external major problems that have been identified as driving forces to organization toward transformation include: inefficient processes; huge operational cost; to enhance holistic transparency; integration; centralization; better customer experience; competitor pressure; digital channels; to reduce paperwork; record keeping; digital platforms; disruptive nature of technology; COVID-19 pandemic scenario and to increased revenue. According to the findings of the study, successful transformation requires strategizing digital transformation into the following primary aspects. Strategizing people, business processes management (BPM), strategizing technology, Strategizing transformational governance, and Strategizing culture. The major strategizing initiatives for the people aspect include DT team formation, stakeholder engagement, effective communication, mitigating risk and effective training. The BPM strategizing initiatives include exploring inefficiencies in the current process, Alignment with Technology, People roles & structure, Process-driven approach, and Engagement of the process owner. The major strategizing initiatives for the technology aspect includes the strategizing role of IT, technology evaluation and selection, selection of vendor, IT infrastructure, information system application and alignment of IT, IS and processes. Similarly, strategizing initiatives for transformation governance includes monitoring and control (People, process & technology governance activities), reporting to top management, testing and post-implementation audit. The strategizing initiatives for organizational cultural include creating a learning environment, open participation and customer care.

The success and failure of digital organizational transformation depend upon developing a holistic digital transformation strategy. According to the findings of the current study, senior management's open strategic approach to digital transformation resulted in successful revolutionary/fundamental change in people, processes, and technology by ensuring inclusion and openness in digital transformation strategy. On the other side, a close strategic approach to transforming government ministries, which fails to adequately strategize the people aspect, leads to delays and unfinished transformation projects. The current study findings have become a significant contribution to strategizing digital organizational

transformation processes, and as a result, it provides guidelines to top management interested in transforming their organizations in order to survive in today's competitive environment.

7. LIMITATIONS & FUTURE RESEARCH DIRECTIONS

The research on strategizing digital organizational transformation could be enhanced by conducting more case studies in the public and private sectors. Currently, just one public sector organization is included in the research; future research may include more public sector firms to gain further insights into the digital transformation process of government organizations. Furthermore, the current study provides awareness and understanding by representing various issues and challenges found during the transformation process of the four organizations, which guides managers on the most critical factors that emerge during digital transformation. To discover what remedial strategies can be effective in handling such issues/challenges seems to be an interesting research area that is needed to be explored. Further, in-depth study of each of the aspects, such as how people, BPM, technology, culture, and governance techniques might affect the success or failure of a change, can be a rewarding research subject. In addition, the current study proposed a conceptual framework for strategizing digital organizational transformation. In future studies, the current proposed conceptual framework could be empirically tested in both public and private sector organizations can be a unique exploration in the body of knowledge for the respective domain.

AUTHOR CONTRIBUTION

Faisal Mahmood led the conceptualization and design of the study, conducted interviews, carried out data collection, performed thematic analysis, and drafted the manuscript. Abdul Zahid Khan contributed to data analysis, literature review, and interpretation of case study findings. Rahat Hussain Bokhari assisted with data organization, refinement of the research framework, and provided critical feedback during manuscript development. All authors reviewed and approved the final version of the manuscript.

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APPENDIX A

Interview Details

Interview Details Company A.

Company	Interviewee	Designation Level	Approx. Duration	Documents
Company A (Micro Finance Bank)	Interviewee 1 Repeated interview	Top Management	1st: 60 min 2nd: 35 min	• Process flow charts • News Articles/ Letters, • Meeting minutes, • Company websites published material, • Bank annual report 2019-2020 • [User guide & test cases- provided by vendor]
	Interviewee 2	Top Management	1st: 65 min	
	Interviewee 3 (Online-Skype)	Middle Management	1st: 45 min	
	Interviewee 4 Repeated interview (Online-Zoom)	Middle management	1st: 55 min 2nd: 25 min	
	Interviewee 5	Middle management	1st: 40 min	
	Interviewee 6	Operational management	1st: 30 min	
	Interviewee 7	Vendor	1st: 70 min	
	Interviewee 8 (Online-Zoom)	Vendor	1st: 30 min	

Interview Details Company B.

Company	Interviewee	Designation Level	Approx. Duration	Documents
Company B (Commercial bank)	Interviewee 1	Top Management	1st: 60 min	• Process flow charts • News-Letters • Company websites published material, • Bank annual report 2020 Vendor websites published material
	Interviewee 2 Repeated interview	Top Management	1st: 55 min 2nd: 30 min	
	Interviewee 3 (Online-Zoom)	Top Management	1st: 45 min	
	Interviewee 4 (Online-Skype)	Middle management	1st: 55 min	
	Interviewee 5 (Online-Zoom)	Middle management	1st: 35 min	
	Interviewee 6 (Online-Zoom)	Operational management	1st: 40 min	
	Interviewee 7	Vendor	1st: 60 min	

Interview Details Company C.

Company	Interviewee	Designation Level	Approx. Duration	Documents
Company C (Telecom Organization)	Interviewee 1 Repeated interview	Top Management	1st:110 min 2nd: 30 min	• News-Letters • Company websites published material • Process flow charts
	Interviewee 2 Repeated interview	Top Management	1st: 65 min 2nd: 30 min	
	Interviewee 3	Middle Management	1st: 45 min	
	Interviewee 4 (Online-Skype)	Middle management	1st: 60 min	
	Interviewee 5 (Online-Zoom)	Middle management	1st: 40 min	

Interview Details Company D.

Company	Interviewee	Designation Level	Approx. Duration	Documents
Company D (Government Sector)	Interviewee 1	Top Management	1st: 70 min	• PC-1 • IC module Handouts • News Letters • Process flow charts • Quick Reference Guide for IC • Policy Document • Company websites published material
	Interviewee 2	Top Management	1st: 55 min	
	Interviewee 3 Repeated interview	Middle Management	1st: 45 min 2nd: 35 min	
	Interviewee 4 Repeated interview	Middle management	1st: 35 min 2nd: 25 min	
	Interviewee 5	Middle management	1st: 50 min	
	Interviewee 6	Middle management	1st: 40 min	
	Interviewee 7	Operational management	1st: 25 min	