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GOVSTACK PLAYBOOK SCALABILITY TO ACCELERATE DIGITAL TRANSFORMATION IN DEVELOPING COUNTRIES

Master's thesis

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GOVSTACKI KÄSIRAAMATU LAIENDAMISKÕLBLIKKUS DIGIÜLEMINEKU KIIRENDAMISEKS ARENGUMAADES

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Author’s declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Abstract

The integration of technology has progressed rapidly in recent years, yet full public sector digitalisation remains a challenging objective, especially for developing countries. Playbooks have received widespread recognition in the private sector as a guide for best practices, assisting industries in adopting new technologies and maintaining their competitive edge. However, in the digital transformation domain, the necessity of such a book has been overlooked.

The aim of this master's thesis is to investigate how the GovStack Implementation Playbook can accelerate digital transformation in developing countries. An exploratory case study methodology is used to identify the challenges and barriers to digital transformation faced by developing countries. Furthermore, the case study explores the opportunities that the GovStack Implementation Playbook offers as a response to mitigate identified challenges. Qualitative data was collected from the Playbook co-creation workshops, semi-structured interviews with experts, and document analysis. The findings indicate that there are numerous obstacles and barriers to digital transformation, such as siloed governance and institutional frameworks, lack of political will, lack of technical infrastructure, lack of digital skills, and siloed organizational structure. The study reveals that while the Playbook is not a one-size-fits-all solution, it is a good opportunity for developing countries to overcome some of the barriers to digital transformation. For instance, the Playbook promotes the use of open-source solutions and a building block approach to developing a country's technological infrastructure. The research makes a valuable contribution to the field of digital transformation regarding the utilization of the Playbook and suggests additional research to assess its suitability more comprehensively.

KEYWORDS: Digital Transformation, Playbook, Whole-of-Government Approach, Governance Frameworks, Leadership, User-Centered Design, Digital Skills

This thesis is written in English and is 56 pages long, including 5 chapters, 14 figures, and 3 tables.

List of abbreviations and terms

CDO	Chief Data Officer
CIO	Chief Information Officer
CISA	Communities of Practice
CoPs	Cybersecurity and Infrastructure Security Agency
DIAL	Digital Impact Alliance
DPGA	Digital Public Goods Alliance
EPR	Extended Producer Responsibility
ESTDEV	Estonian Centre for International Development
GERA	GovStack Ecosystem Reference Architecture
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICT	Information and Communication Technology
IT	Information Technology
ITU	International Telecommunications Union
NPM	New Public Management
OECD	Organisation for Economic Co-operation and Development
RQ	Research Question
SDGs	Sustainable Development Goals
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WOG	Whole-of-Government

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1 Introduction

Digital technologies and solutions have become an inherent part of our everyday lives. Digital technologies are cross-cutting, affecting virtually all aspects of our societies; from private-owned businesses to public institutions, down to the art and culture of our societies (Reis et al., 2018). Even though private-owned businesses have championed the revolution, governments and the public sector have not been left unscathed. Widespread integration of these technologies means that change is inevitable. As such, governments have been tasked to put more emphasis on the efficient execution and delivery of digital services.

Governments are using digital technologies to adapt organisational structures and the underlying service delivery processes, an approach dubbed digital transformation (Hess et al., 2016; Mergel et al., 2019) embedded in the organisational roadmaps of most government bodies (Zaizi, 2018). A successful digital transformation results in digitally enabled public services, ultimately leading to seamless services for the users, making their everyday life easier, more fulfilling and more secure. In the quest for transforming public services, developing countries have not been left behind, spending billions of dollars in a bid to achieve this (Fakhoury, 2018).

For far too many developing countries, the digitalisation of public services is an ongoing struggle. According to research, these struggles are present because public sector organisations in many developing countries are characterised by excessive bureaucracy, legacy systems, and reluctance to adopt change (Mergel et al., 2019; Misuraca et al., 2020; Ruud, 2017). These challenges are particularly salient in the context of developing countries because digital transformation is a complex process as it demands for the whole government transformation, something these countries may not be prepared for.

Despite all the current trends and modern solutions, digital transformation is often daunting for developing countries, posing huge rewards for success and disastrous implications in case of failure. According to (World Economic Forum, 2016), digitalisation can potentially create tremendous value for society and business, estimated

at $100 trillion. However, achieving success in digital transformations is a huge challenge for many government agencies. Unfortunately, this is the case, despite the amount of money being spent on such initiatives; literature suggests that the failure of such initiatives is being witnessed in the public sector in developing countries, with failure rates of between 60-85% (Fakhoury, 2018) Other obstacles are attributed to the slow progress include a lack of interoperability frameworks, limited integration of systems and regulatory frameworks, and access to infrastructure, among other challenges (Gates et al., 2021).

1.1 Problem Statement

There is a lack of published research on the importance and impact of a comprehensive playbook that can function as a reference point for countries, particularly developing ones, in dealing with intricate digitalization challenges that go beyond funding (DIAL, 2018), leadership (Wilson & Mergel, 2022), infrastructure (World Bank, 2023), and digital skills (Wiggberg et al., 2022).

The term "playbook" is defined in various dictionaries as a set of rules, guidelines, or tactics deemed appropriate for a specific activity, industry, or profession. The Cambridge Business English Dictionary defines a playbook as "a set of rules or suggestions that are considered to be suitable for a particular activity, industry or job". The Oxford Advanced Learner's Dictionary defines a playbook as "a set of rules or way of doing something". On the other hand, the Merriam-Webster Dictionary defines a playbook as "a stock of usual tactics or methods". While the definition of a playbook may differ slightly across dictionaries, they all suggest that it is a structured set of guidelines or tactics for achieving specific goals in a given activity or industry.

While playbooks have been created as comprehensive guides to achieve specific goals or solve problems in different domains, no playbook is currently available to guide public sector digital transformation. In contrast, playbooks have been widely adopted as crucial high-value tools in the private sector. According to the U.S. Digital Service (n.d.), playbooks can hasten procurement processes in government and facilitate the delivery of novel digital services while adhering to existing legal frameworks. Playbooks have also been embraced in the cybersecurity domain to assist security operations personnel in

responding quickly to security incidents (Bollinger et al., 2015; Kick, 2014). (Stevens et al., 2022) advocate for the use of playbooks, citing The U.S. Cybersecurity and Infrastructure Security Agency (CISA), repeated advocacy of playbooks for organizations that operate critical infrastructures in fields like healthcare. Moreover, CISA considers playbooks as an effective tool for natural security.

Even though important elements for the successful implementation of digital transformation initiatives have been suggested (Cunnington, 2022; Duneja et al., 2018; Welby & Tan, 2022), these need to be captured in a best practices book. Governments can derive advantages from having a best practices book that offers direction and tactics to help them conceptualize their roadmaps, thereby accomplishing their primary digital goals (Hamilton, 2023). However, to the best of the author's knowledge, researchers have not published papers on the necessity and impact of a comprehensive playbook to assist countries in achieving digital transformation; potentially depriving countries, especially developing countries, of a comprehensive and coordinated approach to public service digitalisation.

1.2 Research Questions

In light of the above discussion, this research aims to contribute to documenting the GovStack Implementation Playbook (Playbook) and addressing how it can help developing countries with their digital transformation journeys. Three research questions were drafted, which guided the entire study.

RQ1: What is the GovStack Implementation Playbook, and how will it help developing countries' digital transformation process?

The primary objective of this question is to investigate how the GovStack Implementation Playbook can address the challenges developing countries face in their digital transformation processes. To gain a comprehensive understanding of how the Playbook can help address these challenges, it is crucial to first examine the existing barriers and challenges that hinder digital transformation processes in developing countries. By identifying these challenges, the research will provide a foundation for understanding how the GovStack Implementation Playbook can address these challenges and accelerate the digital transformation processes in developing countries.

RQ2: What are the key prerequisites for the successful adoption of the Playbook in developing countries?

There are essential requirements that a country must meet before adopting the Playbook approach. Answering this question will establish a comprehensive understanding of the critical factors such as leadership, governance, digital skills, and infrastructure required for successful usage of the Playbook; the researcher seeks to contribute to the development of effective strategies for transforming a country's public services.

RQ3: What are the methodologies for using the GovStack Implementation Playbook?

Finally, a comprehensive overview of the methodologies for digitising services using the GovStack Implementation Playbook will be addressed. The research will identify the recommended approaches for digitalising services by systematically examining the components, methodologies, and steps outlined in the Playbook. The research will also draw upon evidence from real-world examples to shed light on how the GovStack Implementation Playbook is being utilised in practice.

1.3 Research Design and Methodology

This study aims to expand the empirical knowledge on the necessity of a digital transformation playbook to help countries with their digital transformation endeavours. After formulating the presented research questions, a combined case study approach was adopted to investigate the matter thoroughly.

The case study approach offers a selection of participatory evaluation techniques (Creswell, 2013) and tools that facilitate an in-depth comprehension of a social setting from the perspective of research participants (Bloomberg & Volpe, 2008). It enables the examination of a wide range of evidence, including documents, artefacts, interviews, and observations, to obtain a comprehensive understanding of organisational functioning (Yin, 2009). A qualitative methodology is ideal for investigating and comprehending phenomena and addressing emerging queries (Creswell & Creswell, 2017).

Triangulation is a research method that enhances precision and validity by utilising multiple perspectives and data sources to understand the research topic expansively. Data

triangulation involves collecting data from various sources or on different occasions. In this thesis, multiple sources of evidence were employed.

1.3.1 Data Collection

Multiple data sources are usually employed to endure the validity of the research (Yin, 2009), which is meant to reduce the limitation of interpreting data from a single source and to increase the reliability of results. In order to consider the various interactive processes crucial to the success or failure of digital transformation initiatives, the data collection was based on several participative methods.

Playbook Co-creation Development Workshops

The author of this thesis participated in the weekly Playbook co-creation development workshops, which took place online via Microsoft Teams between June and December 2022. The purpose of these meetings was to exchange information, review existing country digital standards and industry best practices, exchange updates from the various countries they are engaged with and develop action plans to create the Playbook.

The workshops, which were coordinated and attended by the author, provided a comprehensive overview of the case background, and offered a unique perspective on the project's unfolding and development.

Country Workshops

Workshops foster engagement, collaborative discussions, and constructive feedback and are often used as a research methodology (Ørngreen & Levinsen, 2017). The engagement in workshops is often very intense and allows the researcher to gather data on collaboratively shared experiences and establish credible results (Lain, 2017).

Six of the interviewees who were later interviewed also participated in various workshops with key country stakeholders from Kenya, Djibouti, and Somalia between November 2022 - March 2023. The workshop focused on four key outcomes:

- Identify ways to support the re-engineering of government business processes.
- Identify enhanced government systems integration and interoperability.
- Improve critical government services for the first phase of service digitalization.

- Identify ways to support digital skills and capacity building.

Semi-Structured Interviews

Semi-structured interviews enable researchers to compare answers systematically while being able to adapt the questions to the individual experience of the interviewee (Longhurst, 2003). All the interviews were held in March 2023, and each interview lasted between 30 and 60 minutes. The interview guideline for the GovStack experts was developed using the literature on public sector digital transformation. The questions asked the interviewees about digital transformation and the essence of a playbook (the interview guideline can be found in Appendix 1). A second set of interviews was conducted with government officials from selected countries. The interview guide was developed, and the questions asked the interviewees about digital transformation and the challenges being faced by their respective countries (the interview guideline can be found in Appendix 2). A list of 12 questions was prepared as a guide to cover the research questions; however, the interviews were customised to each expert's background. The interviews were conducted via Microsoft Teams and recorded with the participants' permission. Nine interviews were conducted in total.

All interviewees were purposively sampled, as they were deemed to have specific, deep knowledge and experiences resulting from their work background and associated responsibilities (Flick, 2017) in leading digital transformation initiatives (Appendix 3). The professionals consisted of GovStack experts who participated in the co-creation process, as well as government officials from Egypt and Rwanda who have played a critical role in driving digital transformation projects in their various countries. The experts' insights were particularly valuable in understanding the need for a Playbook, given their extensive experience implementing various initiatives in developing countries over several decades. The purposive sampling (Etikan, 2016) allowed for a selection of a comprehensive group of experts who have practical experience and can match the solutions offered by the Playbook to the challenges faced in these developing nations. The inclusion of an expert from Estonia provided an additional lens, offering best practices and practical experiences from a country that is considered a digital leader and providing insight into how these best practices have been captured in the GovStack Implementation Playbook.

One of the government experts interviewed was a key figure in Egypt's Ministry of ICT and was critical in formulating Egypt's ICT strategy. Their interview provided practical input on the essential ingredients of a digital strategy, the implementation process, and critical lessons learned. Rwanda is one of two countries that have piloted the Playbook so far. The interview with the key focal point provided an initial understanding of how the country perceives the GovStack Implementation Playbook and how it is currently being applied.

The author of this thesis had hoped to interview officials from Djibouti, another implementing country, but this was not possible due to Ramadan.

Document Analysis

Document analysis and review involve gathering information by reviewing existing documents. The author collected and analysed multiple documents such as research articles, industry reports, digital transformation strategies, and confidential and non-confidential project reports. These documents established the conceptual framework and were useful in designing the interview questions. The conceptual framework is vividly discussed in the literature review section of this thesis.

1.3.2 Data Analysis

Qualitative data analysis encompasses the process of identifying and categorising data, as well as analysing and interpreting it (Creswell & Creswell, 2017). In the present study, the initial steps involved cleaning, carefully reading and organising the interview transcripts into codes. A code is a symbol that imparts meaning to the collected data, such as interview transcripts, field notes, and documents, among others (Saldaña, 2021), and the coding system allows for the transformation of data into meaningful and specific units of information. Once the data was coded and organised, themes were developed and scrutinised to ensure they addressed the research questions. The qualitative analysis culminated in the interpretation of the results.

For thematic analysis, NVivo was employed, facilitating the creation of mind and project maps to aid in identifying, analysing, and interpreting patterns (i.e., themes) to draw conclusions.

1.4 Structure of the Thesis

The overall structure of the dissertation takes the form of five chapters, including this introductory chapter. Chapter 2 presents the literature review concerning public sector digital transformation and discusses some of the barriers developing countries face. Chapter 3 focuses on the case study and presents the GovStack Implementation Playbook, its development course, and key components. Chapter 4 will describe the interview results in a discussion and analysis format. Finally, Chapter 5 will provide a conclusion and summary of the research and recommendations for future studies.

2 Literature Review

This section provides background on some of the key concepts and themes that were reviewed, leading to the identification of the research problem and subsequent research questions. The literature review was a synthesis of exploring different concepts across different domains and searching through information from a vast number of fields, including digital transformation from a citizen-centric point of view, governance frameworks, digital skills, and capacity building.

2.1 Digital Transformation in the Public Sector

Digital transformation refers to the adoption of digital technologies by governments, leading to changes in their operational methods and overall focus. The COVID-19 pandemic accelerated digital transformation, demanding for the attention of practitioners and academic communities (Soto-Acosta, 2020). While practitioners aim to revamp organisations and change their operational methods, scholars are focusing on grasping the reasons behind the success or failure of digital transformation endeavours (Mergel et al., 2019).

The widespread adoption of digital technologies has a profound impact on various aspects of an organisation's internal and external environment. (Chanias & Hess, 2016; Vial, 2019) illustrate the benefits of digital tools for enhancing IT infrastructure, improving core products and processes, and introducing new ways of working (Edelmann & Millard, 2021; Hinterhuber & Stroh, 2021). Digital technologies can be utilised to streamline the structural and functional aspects of bureaucratic organisations (Cordella et al., 2018; Lember et al., 2019), as well as their operational procedures and methodologies.

The integration of digital technologies and applications in governments results in enhanced quality of organisational management and institutional capacities. Consequently, public sector organisations have formulated strategies (Matt et al., 2015; Pedersen, 2018) to capitalise on the advantages that digitalisation offers for improving service delivery, customer and user relations, and human resource development.

Digital advancements provide opportunities for product and service development, as well as enable organisations to foster a culture of openness that supports collaboration and knowledge sharing (Hanna, 2016). The prevalent availability of digital tools and the ongoing digital transformation of organisations are altering the public's expectations of governments, specifically regarding their capacity to provide high-quality digital services in real-time (Bertot et al., 2016). Consequently, public sector organisations aim to adapt to these societal expectations and changing environments that are resultant from these technologies.

In the public sector, digital transformation can be described as using digital technologies to make processes and outputs more efficient and effective (Alford & O'Flynn, 2009). Misuraca et al., (2020) define public sector digital transformation as the introduction of radical and incremental changes in government operations, structures, and processes, to enhance collaboration and interoperability in the public sector ecosystem.

According to (Mergel et al., 2019, p.10), digital transformation in governments "is a continuous process that needs frequent adjustments of its processes, services, and products" as a response to the organisation's environmental changes demanding for the need for governments to discover innovative methods of providing public value (Janssens, 2021) while fulfilling public sector objectives such as accountability, efficiency, responsiveness, and transparency (Linders, 2012; Matheus et al., 2021).

Given the context of this thesis, the author has decided to utilise the definition put forth by (OECD, 2018, p.11), which defines digital transformation in the public sector as

> a shift from e-government, or the digitisation of paper-based business and service-delivery processes, to a "digital by design" re-engineering of services and processes. It requires governments to take a user-driven approach, empowering citizens and businesses to interact and collaborate with the public sector to determine and address their own needs.

2.1.1 Barriers to the Success of Digital Transformation Initiatives in Developing Countries

The literature on digital transformation in the public sector of developing countries is still an under-researched area and, at best (AlGhazi et al., 2018), presents a fragmented perspective. On the other hand, the factors that facilitate digital transformation in developed countries are well-established within the existing literature. To a large extent, digital transformation processes in developed countries are significantly different from those in developing countries. As noted in (Avgerou, 2001), research findings from developing countries cannot be directly applied to developed countries, and vice versa, due to sociocultural factors.

Several developing countries are currently undergoing a significant digital transformation. With the onset of the Covid-19 pandemic, various sectors, including banking and finance, have proactively shifted towards digital means. Despite this progress, there is still significant underutilisation of digital technologies, particularly in the provision of public services. According to (Filatova et al., 2018), the perception of digital transformation as a threat to existing organisational culture can significantly impede efforts to transform the public sector. This perception hampers the commitment and willingness of political leaders (Dobrolyubova et al., 2019; Syed et al., 2018) and creates role ambiguity. This is especially witnessed where agencies believe that digital transformation can cause disruption in personnel, especially long-term positions or leaders and organisations that are not ready to invest in modern technology due to the cost of spending (DIAL & Smart Africa, 2020).

Persistent challenges must be addressed as developing countries continue their digital transformation journeys. One of the most significant issues public sector organisations face is the lack of a well-defined strategy for successfully implementing new technologies (Zachari, 2022). Many of these organisations struggle to understand the digital transformation process, especially with regard to technology, leading to inadequate planning, unmet goals, and project abandonment (Hai et al., 2021). The lack of integrated planning and decision-making among stakeholder groups can also undermine the design and implementation of digital solutions, potentially impacting their scalability and sustainability. The exclusion of technology specialists from the planning and design phase can lead to unrealistic expectations about technology usage and inappropriate technology

solutions (DIAL, 2018). Moreover, limited engagement with local governments and stakeholders can compromise the potential for local ownership of solutions, ultimately undermining their sustainability.

Developing countries also face significant challenges in terms of policy and regulatory frameworks. Many countries lack clear policies and regulations for digital transformation, which leads to uncertainty and inconsistency in the shift to digitalisation (Zachari, 2022). The rigid bureaucratic structures and regulatory frameworks inherent in public sector organisations limit information sharing, inter-agency coordination, and collaboration (Al-Ruithe et al., 2018; Gil-Garcia et al., 2019). This can hinder innovation and design, which are critical for digital transformation.

Funding is another significant challenge for developing countries (DIAL & Smart Africa, 2020). Governments often rely on donors and foundations to fund digital transformation projects, as they are unable to finance these initiatives themselves. However, funding cycles are often disconnected from tech development cycles, and the absence of tech specialists during the planning and decision-making phase can result in inappropriate budgets and timeframes for the desired solutions (DIAL, 2018). Time-bound projects may lead to the completion of digital solutions towards the end of the program, resulting in limited usage (Thomas, 2017). Moreover, project-based solutions often lead to duplication and wasted efforts as projects come to an end, and new donors will come and implement new tools.

Digital transformation requires a strong, secure, and flexible digital network infrastructure (Hai et al., 2021). Notwithstanding the recent rise in cyber security incidents that endanger national security, the bulk of developing countries are ill-prepared to deal with cybersecurity threats caused by a lack of resources. Limited infrastructure also includes a lack of reliable internet connectivity, limited access to devices, and insufficient power supply (DIAL, 2018). In such contexts, providing digital information or seeking feedback from beneficiaries may not be practical, given that they may lack consistent access to their mobile devices. As a result, many citizens are unable to access digital services, which limits their ability to participate in the digital economy.

In developing countries, a lack of digital capabilities (Filatova et al., 2018; Hai et al., 2021; Omar et al., 2017) and challenges associated with implementing emerging

technologies contribute to a loss of control and mistrust of transformation (Al-Ruithe et al., 2018). This includes a shortage of skilled professionals who can design, develop, and maintain digital solutions. Additionally, many citizens lack the necessary digital literacy skills to access and utilise digital services effectively.

To overcome these barriers, governments in developing countries must consider cultural and organisational factors (Wilson & Mergel, 2022), build digital capabilities, and address challenges associated with emerging technologies.

2.2 Governance Framework

According to World Bank, 2023, digital government transformation necessitates legal and regulatory frameworks, policy levers, digital skills and talent policy as critical policy instruments. These frameworks are typically substantial, necessitating high-level political commitment to ensure necessary reforms are made efficiently and promptly. Nations that are leaders in digital government have demonstrated the significance of robust political leadership, well-defined vision and strategy, effective governance and organisational structure, and sufficient financial resources (Gates et al., 2021; GovStack, n.d.). However, achieving digital transformation objectives can be challenging, particularly for governments that tend to approach digital transformation programs piecemeal rather than adopting a holistic approach.

One of the holistic approaches to digital transformation is adopting a whole-of-government approach. Various studies on technological, social, organisational, and other types of innovation emphasise that depending on whether an innovation is incremental or disruptive, top-down or bottom-up, these can significantly affect its development (Saari et al., 2015), success (Gobble, 2016), scaling process (Nagy et al., 2016) and transformative effects (Nagy et al., 2016), among other aspects.

A whole-of-government (WOG) approach is a policy framework that emphasises collaboration and coordination among government agencies (Halligan et al., 2011; Colgan et al., 2014; Ojo et al., 2011) to achieve common goals that result in eliminating duplication, optimisation of resources, creating collaborations across agencies, and delivering seamless services to the citizens and businesses (Christensen & Lægreid, 2007). This approach recognises that many of the challenges facing society are complex

and require the participation of multiple agencies and stakeholders to solve. As such, it seeks to deliver coherent and integrated policies (Ojo et al., 2011), programs, and services across different sectors and levels of government to improve effectiveness, efficiency, and outcomes.

The *whole-of-government* approach arose as a response to the failures of the New Public Management (NPM) (Christensen & Lægreid, 2007; Pollitt, 2003). The WOG approach was one of the reform initiatives aimed at solving the coordination issues caused by the NPM. According to (Christensen & Lægreid, 2007), the WOG approach enhances communication and coordination across the whole government. This is particularly useful in this case where the WOG approach usually includes several stakeholders from local, national, and regional governments; non-governmental organisations; and private sector organisations (Yusuf et al., 2022).

The successful implementation of digital services by governments requires a comprehensive architectural approach that accounts for all relevant factors, particularly in light of resource constraints and competing demands commonly faced by governments. Hence, developing and implementing a comprehensive strategy founded on a solid framework (ITU, 2019; Pollitt, 2003) is mandatory. Incorporating a WOG approach to policy development and service delivery allows various public sector agencies to utilise diverse knowledge, perspectives, and ideas. The WOG approach facilitates a coordinated and concerted effort among different agencies, resulting in greater outcomes than individual agencies working alone (ITU, 2019; Zainal, 2011).

While a WOG strategy can provide governments with a competitive advantage that is challenging to duplicate when executed appropriately, it has some critical success factors (Othman & Razali, 2018). These factors include establishing a robust and centralised coordination entity (Welby & Tan, 2022) that guarantees the consistent implementation of IT policies, guidelines, and best practices through an efficient compliance regime. Additionally, coordinating and monitoring whole-of-government IT strategy and investments is necessary to ensure the effective execution of a WOG strategy.

There are several benefits to adopting the WOG approach (Colgan et al., 2014). Quite a number of the digital transformation projects that have been executed have resulted in failures without achieving the initial anticipated value. Governments, especially in

developing economies, are unable to develop and implement new solutions on their own; instead, they are bound to coordinate with different stakeholders and in networked constellations (Olsen, 2013). This is so, especially in today's world, where the use of digital technologies in public service provision is of utmost necessity and one of the ways to solve today's societal challenges (Ozols & Meyerhoff Nielsen, 2018).

Stepputat & Greenwood (2013) analysed the implementation of the WOG approach in the context of international development. The authors found that the WOG approach was effective in addressing complex development challenges, such as poverty reduction and health improvement. However, they also noted that the approach faced challenges in terms of political will, institutional capacity, and resource constraints.

Furthermore, developing countries often face resource constraints and competing demands, making it difficult to prioritise digital transformation effectively (Hai et al., 2021). A WOG approach can help to ensure that digital transformation initiatives are aligned with government priorities, ensuring that resources are directed towards initiatives that are most likely to deliver tangible benefits (OECD, 2020). Furthermore, pooling resources and expertise will ensure that these countries are able to scale digital solutions and realise the full potential of digital transformation.

Finally, a WOG approach can also help to promote inclusivity and citizen-centricity in digital transformation efforts (OECD, 2020; Ozols & Meyerhoff Nielsen, 2018). By involving different government agencies in the development and delivery of digital solutions, a WOG approach can help ensure that citizens' needs are considered and addressed comprehensively. These needs incorporate; identifying the appropriate services for specific life events (Welby & Tan, 2022), eliminating the need to provide identical data to multiple administrations and enabling citizens to complete the service through their preferred digital channels. Incorporating citizens' needs in the service design process help to build trust and confidence in digital solutions and promotes their adoption, resulting in fewer redundancies and automated decision-making for more inclusive services (Service Upgrade, 2022).

2.3 Transformational Leadership

With digitalisation, governments are even becoming more interconnected and facing considerable shifts in terms of rising complexity and evolving citizen expectations. This new reality demands senior leadership to think, manage, and lead differently (Gerson, 2020). Effective responses to the demands and emergent policy and service delivery challenges of the 21st century must also be informed and supported by new thinking, new ways of working, and new ways of leadership and delivery for citizens.

Leadership is perhaps one of the most important determining factors of the success of digital transformation initiatives (Tabrizi et al., 2019). Leadership plays an important role in developing a vision and strategy and works towards realising the vision by institutionalising norms, beliefs, shared value systems, structures, policies, regulations, and governance systems that shape desired behaviour during transformation (Cunnington, 2022). In the absence of transformational leadership, digital initiatives often fail. According to (Dawes et al., 2009, p.398), leadership commands power and authority for "negotiating powerful bureaucratic processes such as budgeting, clarifying leadership responsibilities, and ensuring the participation of key people."

Public sector leaders are at the heart of digital transformation (De Tuya et al., 2020). So far, evidence from the literature points to the lack of transformation leadership as one of the challenges surrounding weak institutional mechanisms for coordinating the implementation. Therefore, the leadership system in countries needs continuous evaluation, adjustment, and reflection to ensure that current and future leaders are properly positioned to support the present and future challenges of the public sector (Cunnington, 2022; Gerson, 2020). Continuous change demands continuous development of effective leadership and a robust pipeline of future leaders.

Public leaders have a crucial responsibility in establishing the ethical culture of an organisation and instilling the principles that shape decision-making across all organisational tiers (Gerson, 2020). Often, a lack of clear organisational leadership and strategy contributes to the failure of digital transformation efforts (Ebrahim & Irani, 2005; Misuraca et al., 2019; Tangi et al., 2020).

Leadership plays a key role in granting authorization to try new things and developing an innovative culture where employees can propose, implement, evaluate, and scale innovative solutions. Top leaders steer organisations, set visions and goals, align resources, and play a significant role in developing organisational culture and climate (OECD, 2020). Without the support and commitment of top leadership; public sector innovation cannot take hold (Ebrahim & Irani, 2005).

The role of top political leadership in influencing digital transformation cannot be overemphasised. There appears to be a link between the commitment of top leadership and the successful adoption and implementation of policy directives aimed at promoting the digital transformation of government. The success of digital transformation thus requires the political will (OECD, 2020) of top leadership to lead the transformation.

Digital leaders may be tasked with transforming systems and services; however, political leaders often control these operations (Cunnington, 2022). In developing countries, political and policy skills, rather than technical expertise, are crucial for advancement to senior positions. Most public institutions in these countries are headed by political chiefs appointed by the President, or Prime Minister, to implement policies aligned with the ruling government's priorities (Manda, 2022). Consequently, digital leaders cannot achieve organisational goals without the active support and participation of senior government officials, whose active decision-making is vital to digital progress, even though very few are authentic champions of digital transformation (Gerson, 2020; OECD, 2020).

Transformational leadership is pivotal in driving the inclusive digitalisation agenda (AlNuaimi et al., 2022). In this fashion, transformational leadership places emphasis on constructing a shared vision for the organisation, creating a sense of collective identity based on shared values and beliefs, and motivating people to work towards achieving that vision (Johnson et al., 2020), is crucial in enhancing coordination, collaboration, and integration during the planning and implementation of digital transformation projects.

2.4 Digital Skills and Capacity Building

Public sector organisations have been faulted for pushing digitisation while underestimating the organisational implications and the people dynamic of digitalization

(Kohnke, 2017). Often, the biggest obstacle to digital transformation is not technology but the people (Bonnet & Nandan, 2011). Without the 'human factor,' it is impossible to realise digitisation benefits. Employees in the public sector play a significant role in the adoption and use of new technologies in government. Their attitude and desire to use them are essential in achieving a sustainable and meaningful digital transformation (Ahn & Chen, 2021).

Supporting government digitalisation initiatives necessitates a digital team (OECD, 2020) with the skills and competencies to guide the team and operate the redesigned services. Over the last decade, many governments have created central digital teams (Mergel, 2019) to drive progress and support digitalisation initiatives. The development of in-house digital delivery teams has helped governments to shift away from the discredited model under which civil servants defined the IT system they required, then commissioned a big IT firm to build it – an approach that failed to produce workable IT systems.

According to (ITU et al., 2017), digital skills cover a combination of behavioural, cognitive, and social skills. Digitisation requires a workforce with a digital skill set (Kohnke, 2017) because only then will the employees be able to correctly apply the solutions and technologies, thereby adding value to the organisation. So far, studies (Morte-Nadal & Esteban-Navarro, 2022) have only shed light on citizens' need for digital skills. GovStack recognises humans' critical role in the digitalisation cycle and is thus proposing a digital skills matrix (GovStack, 2022) for a sustainable ecosystem.

According to (OECD, 2021), governments should establish a conducive work environment that promotes digital transformation, cultivates skills to enhance the maturity of digital government, and sustains a competent digital workforce. This entails proficiency in various areas such as digital government user skills (e.g., comprehension of user requirements and collaborative delivery), digital government socio-emotional skills (e.g., vision, analysis, and agility), digital government professional digital skills (e.g., programming, web or app development, and data analytics), and digital government leadership skills.

A good level of digital skills in the public sector makes up a digitally competent, agile, and prepared public workforce that can seize opportunities arising from digital technologies and data (OECD,2021), innovate and implement digital government policies

and programmes effectively. Digitally literate citizens make the government digitally resilient in driving technology adoption (OECD, 2020) rather than relying on external contracts or tenders.

Governments must prioritise inclusivity and diversity in their talent pool to ensure equitable representation of the population within the civil service and a thorough understanding and consideration of various population segments (Welby & Tan, 2022). The capacity-building strategy for a country's digitalisation should enhance the understanding of public service design through the use of new technologies (Kyriakopoulou et al., 2021). Through understanding a human-centric approach in public services, civil servants should be equipped to apply new ways to design and implement services along with the new technologies and process re-design.

The demand for a digitally competent population and workforce has become even more critical (Hislop et al., 2018). To provide knowledge and skills at the intersection of technology, business and management, design thinking, and policy areas, an interdisciplinary approach to capacity building is crucial. According to (OECD, 2021; van Laar et al., 2017), an interdisciplinary approach to capacity building ensures that the needs of the labour market are met while providing a comprehensive perspective on the skills and competencies required for digital transformation, thereby ensuring the sustainability of such initiatives.

The successful implementation of e-governance and digital transformation necessitates countries to consider sustained efforts to develop a long-term strategy for building the necessary capacities within a country's digital teams (OECD, 2020). This entails considering both the short-term and long-term goals and working closely with key stakeholders from the public, private, and academic sectors to identify the skills, competencies, and knowledge essential to achieving those goals. According to (Jackson, 2019), this is a valuable asset in ensuring the long-term development of a country's capacities. Additionally, it is crucial to continually monitor industry trends and emerging technologies to sustain a digital society. Therefore, establishing a digital talent archive to ensure the continued sustainability of a country's capacity and digital skills is imperative.

2.5 Conclusion

The preceding analysis has revealed that extensive research has been conducted on digital transformation in various domains. The literature shows that a WOG framework, transformational leadership, digital skills and capacity building are some of the key ingredients for a successful digital transformation. Nonetheless, the concept of playbooks and their potential significance in facilitating digital transformation, particularly in developing nations, has not been extensively explored in the existing literature. Playbooks have conventionally been applied in the realm of cybersecurity, but their potential use in digital transformation has yet to be fully explored. This research study aims to address this gap in the literature by examining the potential applications of playbooks in digital transformation. The subsequent chapters of this thesis endeavour to shed light on this relatively unexplored area of research and offer insights into the use of the GovStack Implementation Playbook for digital transformation in developing countries.

3 Case Study

Governments in developing nations face a plethora of challenges as they strive to keep pace with the current digitalisation trends. These challenges are multifaceted and encompass issues such as financial sustainability, coordination across inter-governmental agencies, and siloed approaches to digitisation that often impede the scaling of public services (ITU, 2019). Rather than adopting existing tools and best practices from successful countries, they tend to reinvent the wheel and develop new products or solutions that are limited in scope.

The GovStack initiative (GovStack, n.d.) seeks to overcome these barriers by introducing a holistic "whole-of-government" (WOG) strategy to enable governments to create citizen-centred digital services. By promoting the use of interoperable, generic, and reusable building blocks to digitalise any service, GovStack aims to break this cycle. The approach of reusing the same components in multiple government e-services is a global best practice that has been utilised to create human-centred digital services while reducing costs, breaking down digital siloes, and facilitating inter-agency coordination across organisations.

3.1 GovStack Implementation Playbook

The GovStack Implementation Playbook is a comprehensive guide that offers a systematic approach to integrating a bottom-up strategy in the domains of institutional governance, ICT policy, and citizen-centric design and delivery of government digital services. Designed as a practical resource, this Playbook can be utilised by global digital government transformation teams to co-create, scale, and implement government digital services that meet their respective countries' long-term needs.

Moreover, the Playbook complements existing initiatives, such as the U.N. Sustainable Development Goals (SDGs) (GovStack, n.d), by strengthening local capabilities in transitioning to a more digital economy. The Playbook offers a detailed set of instructions

aimed at facilitating the effective implementation of these principles and enhancing the overall success of digital investments in achieving sustainable development goals.

The GovStack Implementation Playbook is designed for use by digital teams responsible for the digitisation of government services. Such teams may include individuals in positions such as Chief Information Officers, Chief Innovation Officers, Chief Digital Officers, service designers, solution architects, software developers, legal advisors, and other relevant roles (Mergel, 2019). While the Playbook can be implemented with or without the assistance of the GovStack country engagement team, it is worth noting that the GovStack Sandbox, GovLearn and GovStack Marketplace serve as complementary resources for readers seeking to implement the Playbook.

3.2 Playbook Development

The GovStack Implementation Playbook is the outcome of a continuous joint and co-design effort by a multidisciplinary team of experts representing the GovStack partner organisations: International Telecommunication Union (ITU), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Digital Impact Alliance (DIAL) and the Estonian Centre for International Development Cooperation (EstDev). Other experts who participated in the co-design process were from the eGov Foundation of India, Tallinn University of Technology (TalTech) and representatives from the Government of Ukraine.

One of the key elements of the Playbook's development was the co-creation approach, which involved the active involvement of experts from various fields. An expert is an individual who possesses technical, process, and interpretative knowledge in their field of expertise (Bogner et al., 2009). Experts are characterised by their systematic and organised knowledge and the deep knowledge gained through specific experiences arising from their professional activities, responsibilities, and obligations within their organisation. GovStack experts brought their unique perspectives and experiences from engagements with various countries across the globe, making it possible to develop a comprehensive Playbook that is adaptable to the needs of developing governments. Through this approach, the Playbook incorporated a wide range of perspectives, ensuring that it is practical and relevant. The Playbook also gathers reference tools and methods

from digital services manuals and design standards developed worldwide by different digital service teams, as described in Table 1 below.

Table 1: Digital Service Standards from Various Counties (Source: author)

Country	**Description of the Digital Service Standard**
Australia[1]	The Digital Service Standard consists of 13 criteria used to design and deliver government services.
Canada[2]	The Government of Canada Digital Standards is a set of 10 principles that guide the development and delivery of digital services in an open, agile and user-focused view of the Canadian government.
India[3]	DIGIT by eGovernment Foundation India is a digital platform that aims to provide a unified and standardised approach to catalyse digital transformation.
Mexico	The Mexican government's digital platform includes a set of guidelines and standards for the design and delivery of digital services by government agencies.
New Zealand[4]	The Digital Service Design Standard is a set of 12 principles that guide the development and delivery of digital services by the New Zealand government.
United Kingdom[5]	The Service Standard is a set of 14 criteria that government services must meet in order to create and deploy citizen-centric services.
United States of America[6]	The Digital Services Playbook is a set of 13 guidelines that aim to guide the design of effective digital services provided by the U.S. government.

By analysing how other countries have successfully implemented digital services, the GovStack team identified the common factors that contribute to the successful implementation and adoption of digital services. This analysis helped to inform the Playbook's development and thus arose the GovStack digital service design principles[7].

To ensure that the GovStack Playbook remains timely and relevant, it undergoes continuous iteration (Figure 1) based on feedback from countries regarding the effectiveness of its tools and methods. This approach guarantees that the Playbook

[1] About the Digital Service Standard | Digital Transformation Agency (dta.gov.au)
[2] Government of Canada Digital Standards - Canada.ca
[3] Introducing DIGIT Urban - Urban
[4] Digital Service Design Standard | NZ Digital government
[5] Service Standard - Service Manual - GOV.UK (www.gov.uk)
[6] The Digital Services Playbook — from the U.S. Digital Service (cio.gov)
[7] GovStack design principles

remains dynamic and adaptive, with consistent updates made to reflect the evolving needs and contexts of different governments.

Figure 1: GovStack Playbook Iteration Model (GovStack, 2022)

The continuous iteration and improvement process ensures that the Playbook remains an indispensable resource for governments seeking to implement digital transformation initiatives that can be tailored to meet their specific needs and requirements.

3.3 Playbook Components

The components of the GovStack Playbook can be classified into three sections, as described below:

3.3.1 Digital Strategy and Governance Framework

As discussed in the literature review, one of the challenges developing countries face is the lack of institutional and governance frameworks to guide digital transformation. The Playbook section on digital strategy and governance aims to provide reference tools and frameworks to assess a country's digital landscape and maturity (Figure 2) and digitise government services at scale.

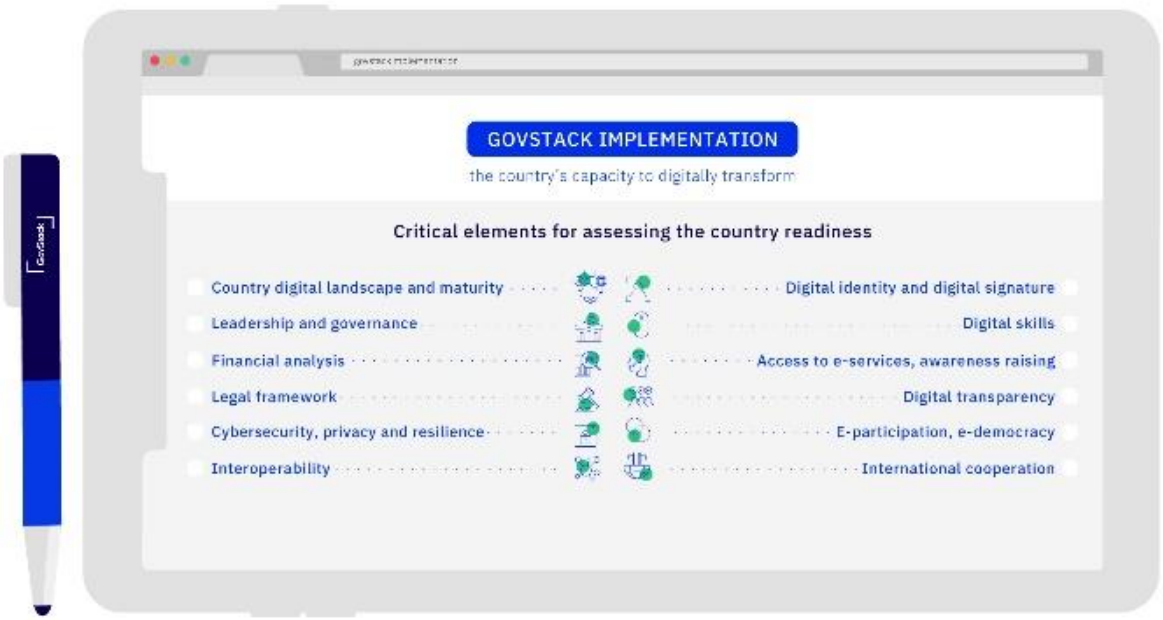

Figure 2: GovStack Readiness Assessment Framework (GovStack, 2022)

It also offers insight into the characteristics of enabling institutional governance and a digital regulatory environment. To this end, this section presents examples of various country assessment frameworks developed by major international organisations such as the UNDP and OECD, digital strategies and roadmaps, key governance and institutional bodies, and exemplars of Government Enterprise Reference Architecture (GERA). These provide a structured, model-driven methodology to support strategic changes in government operations, as shown in Figure 3 below.

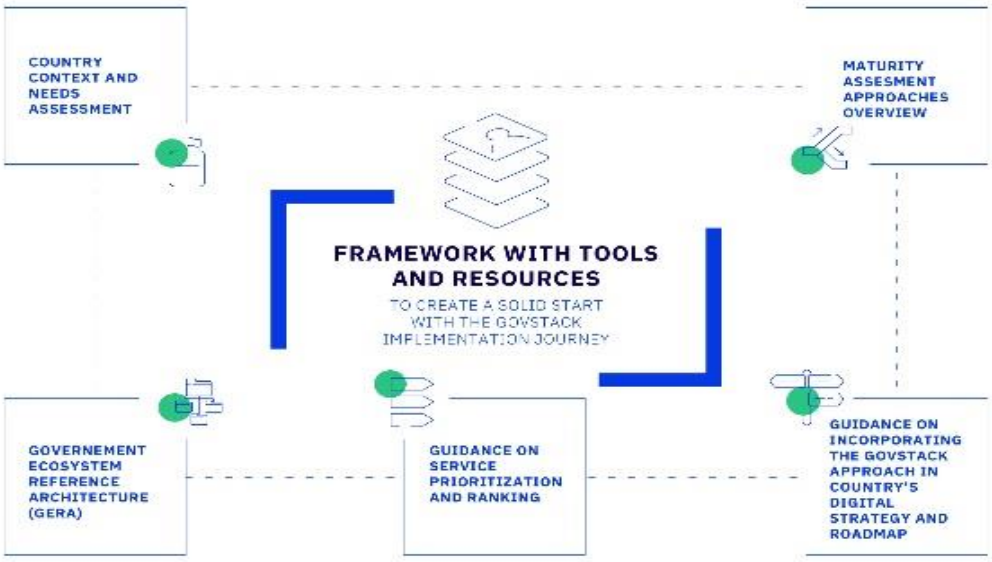

Figure 3: Foundation of Digital Strategy and Governance as proposed by GovStack (GovStack, 2022)

By incorporating these examples and guidelines, digital transformation teams can effectively evaluate their digital readiness, develop appropriate strategies, and implement best practices for sustainable development goals.

3.3.2 Digital Service Design and Delivery

One of the challenges in transforming public services is designing user-friendly services that will be adopted by the citizens. The Playbook section on digital design and delivery provides guidance on co-designing and delivering user-friendly government services, as shown in Figure 4. This stage is dependent on three critical activities: understanding user needs, life events and user journeys.

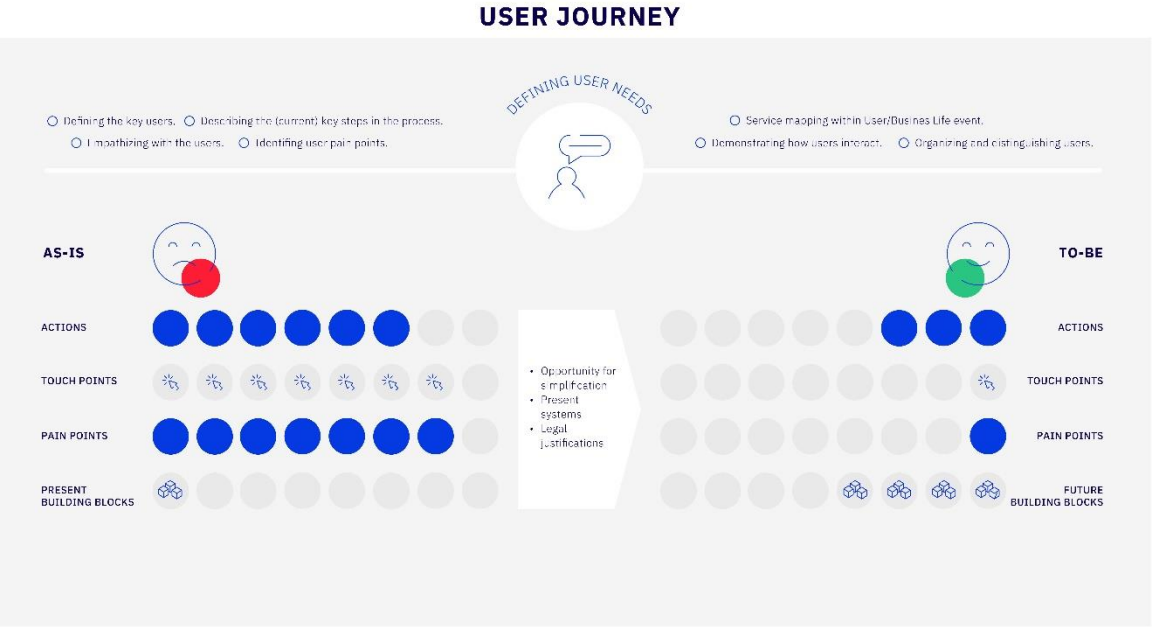

Figure 4: GovStack guide to designing user-centred services (GovStack, 2022)

Moreover, Figure 5 below illustrates how the GovStack approach employs a sequence of tools and methods to understand user needs, map user journeys and life events, integrate prototypes using an agile methodology and using reusable software components from the GovStack sandbox.

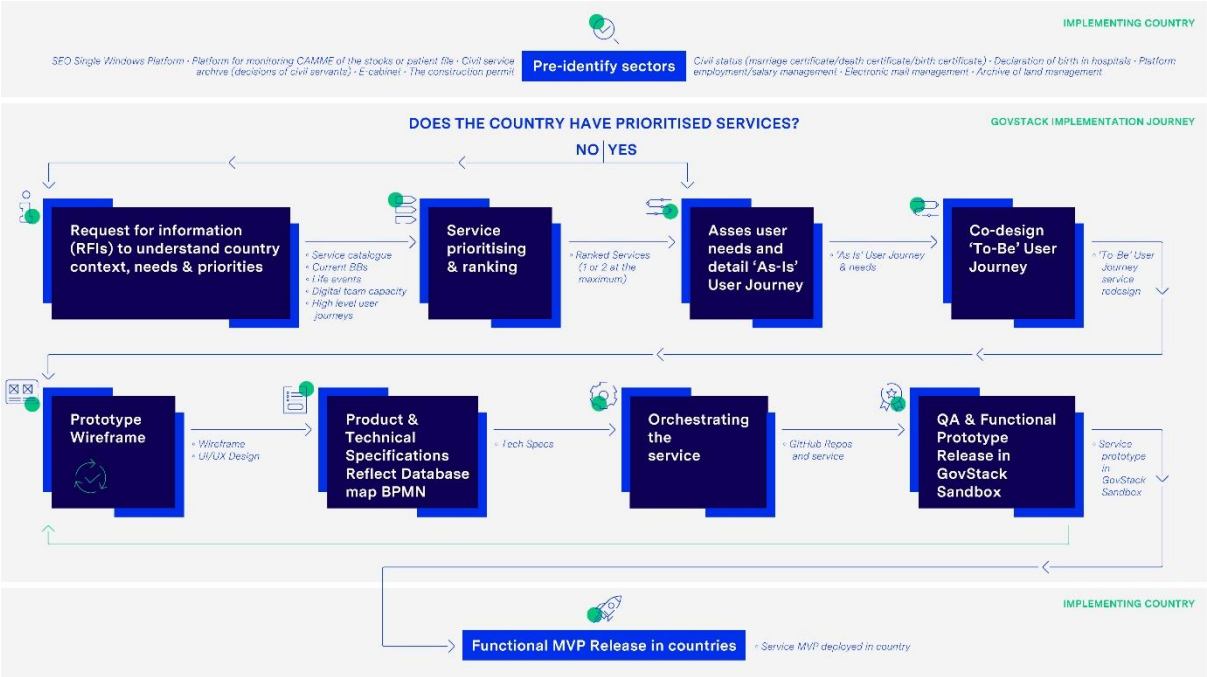

Figure 5: GovStack guide to designing citizen-centred services (GovStack, 2022)

Countries are encouraged to operate a service catalogue (Figure 6) as a central repository of all digital services offered by the government, which helps to avoid duplication and a siloed approach to digitalising services. A service catalogue not only helps to streamline digital service delivery but also provides a user-friendly experience to the citizens. It enables citizens to locate and access government services easily and helps governments to identify areas where services can be improved or consolidated. Furthermore, the service catalogue provides transparency and accountability as citizens can see which services are being developed by the government and track the development progress of these services.

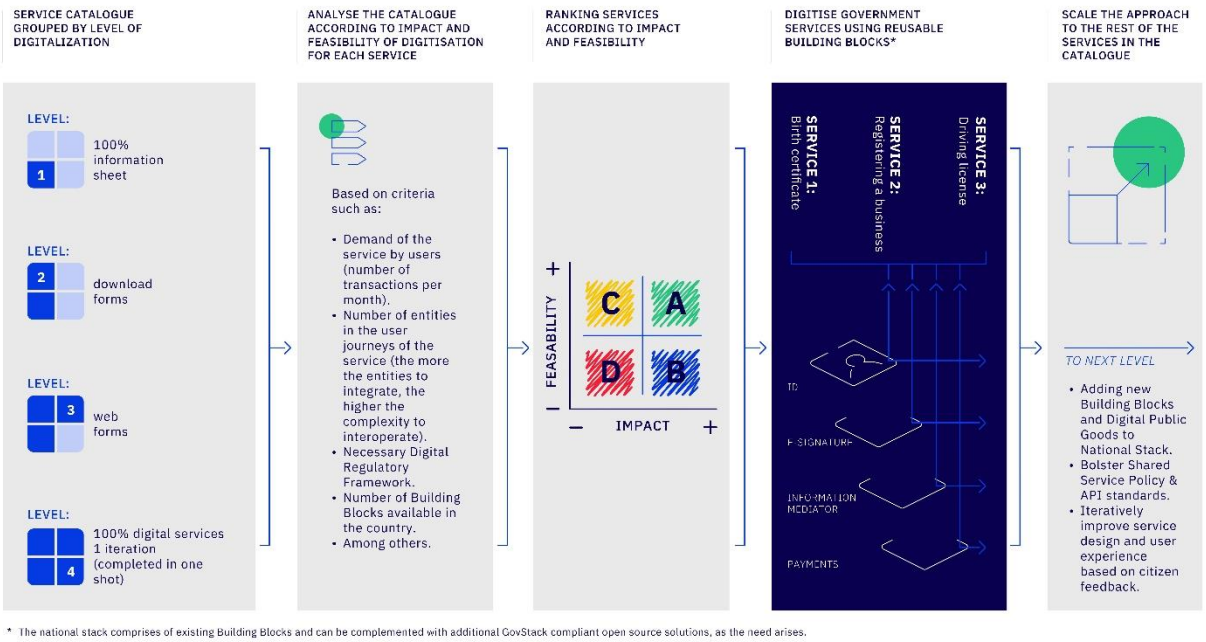

Figure 6: GovStack Service Catalogue and Service Prioritization Roadmap (GovStack, 2022)

By operating a service catalogue, governments can save resources, time, and money by avoiding the duplication of services across different departments or agencies. Since the service catalogue encourages collaboration across different government agencies and public-private partnerships, it leads to a more efficient and effective digital government service delivery.

3.3.3 Learning and Exchange

The GovStack Playbook's section on learning and exchange builds on three critical pieces; people, process, and technology (Figure 7), which are imperative for the success of digital transformation efforts. GovStack recognises the need for continuous learning and development, particularly for governments and their citizens, as the ultimate beneficiaries of its initiatives.

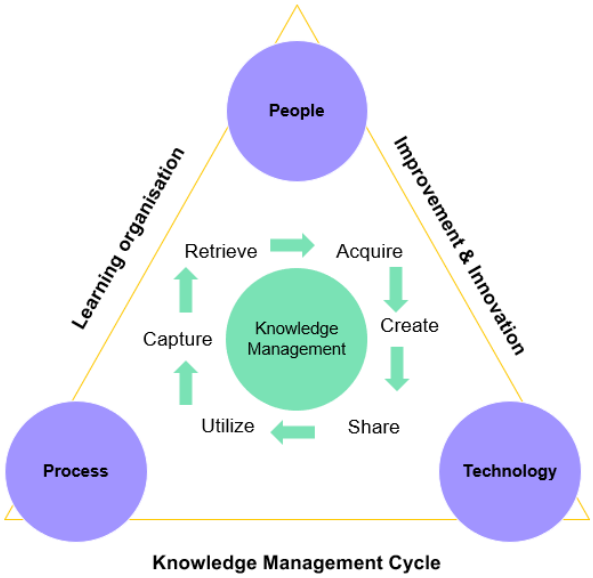

Figure 7: GovStack Knowledge Management Framework (GovStack, 2022)

The Playbook section on GovLearn offers a diverse array of learning resources necessary for upskilling teams and keeping them abreast with relevant leaning resources. Further, the section outlines the key composition of any good digital services team, including roles such as government CIOs, technical specialists, and service design specialists, which are critical to the success of digital transformation projects. The Playbook also highlights the importance of Communities of Practice and learning exchange forums (Figure 8) as platforms for sharing knowledge and experiences among various stakeholders and countries' leaders.

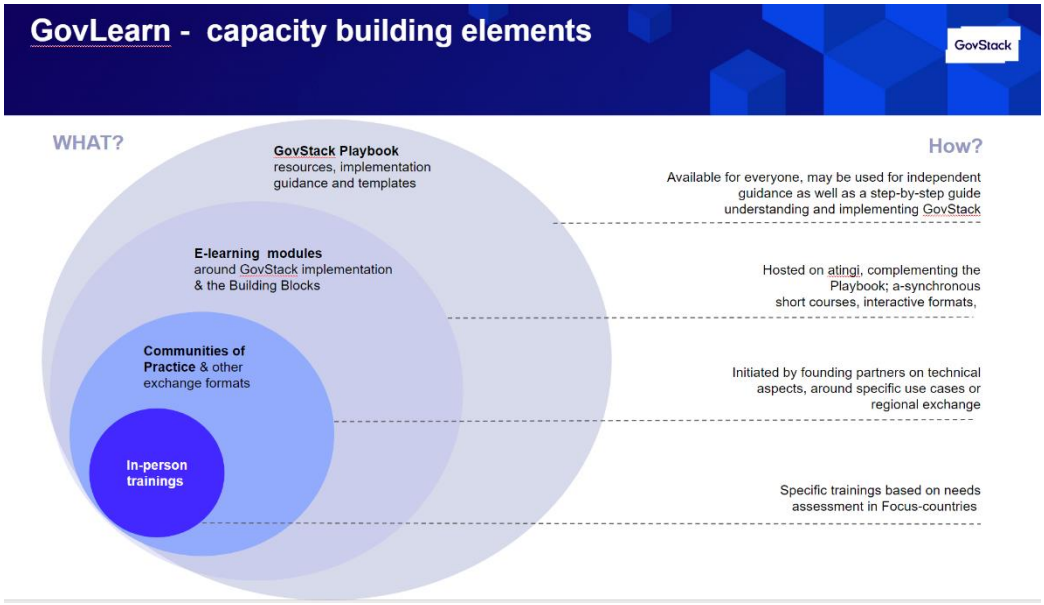

Figure 8: GovLearn Capacity Building Elements (GovStack, 2022)

By emphasising the importance of continuous learning and exchange, the Playbook empowers governments to build resilient and sustainable digital services that align with their citizens' evolving needs and expectations.

4 Findings and Discussion

This chapter provides a detailed account of the empirical data collected through interviews, which was extensive in scope. To facilitate an in-depth analysis of the findings, they have been categorized into three sub-sections, each of which addresses the specific research questions. This approach enhances the clarity and organization of the chapter, making it easier for the reader to follow the research findings.

4.1 Overview of Relevant Themes

The coding and analysis of the interviews resulted in the identification of several keywords, which in turn led to the emergence of five themes that relate to the research questions. These themes were then categorized based on the following:

1. the obstacles that developing countries encounter when implementing digital technologies,
2. the vital role played by leadership and political will in driving digital transformation,
3. the significance of digital skills and expertise,
4. the technological infrastructure required, and
5. the opportunities provided by the GovStack Implementation Playbook to alleviate these challenges.
6. the need to ensure sustainability of the Playbook.

These themes are visually presented in Figure 9, and the findings of each theme are further elaborated in the subsequent sections.

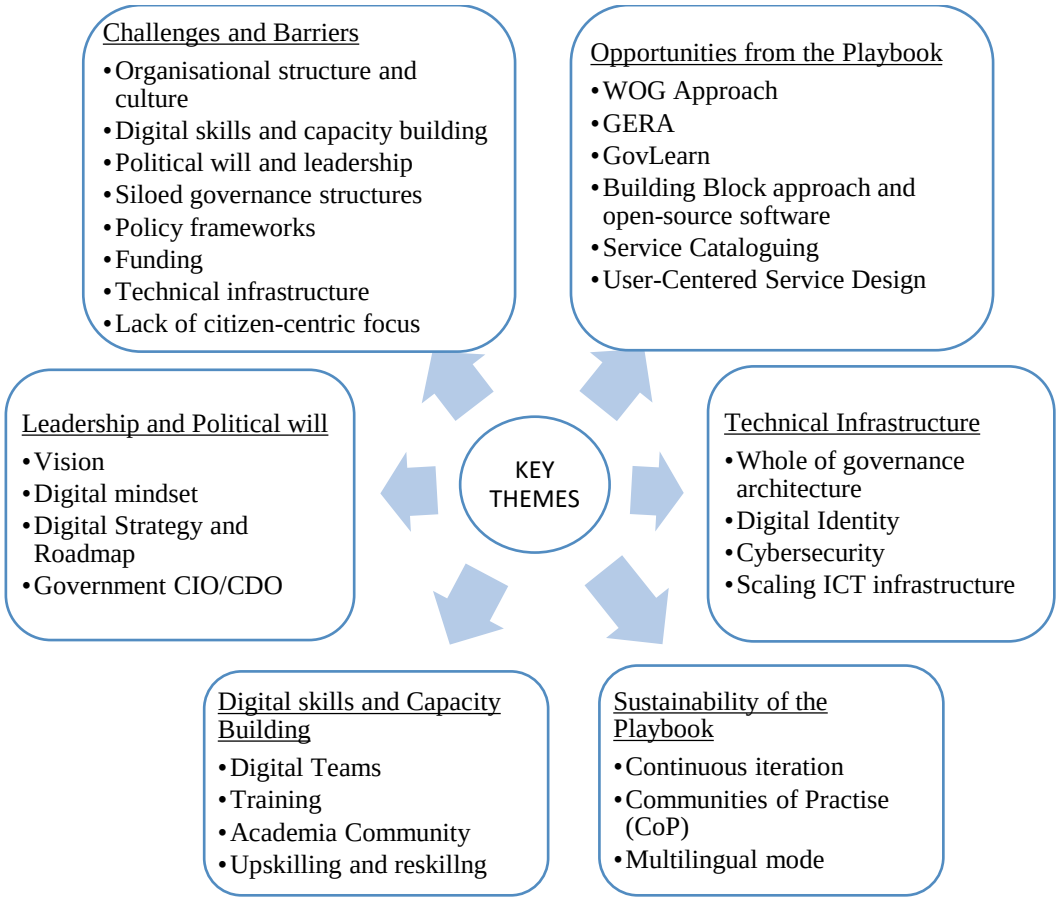

Figure 9: Thematic Map (Source: author)

4.2 RQ1: Opportunities from the Playbook to Overcome Digital Transformation Barriers

The objective of this section is to examine the challenges and obstacles hindering the progress of digital transformation in developing nations, as well as the potential solutions offered by the GovStack Implementation Playbook to overcome these challenges. By doing so, this thesis aims to provide systemic answers to RQ1: What is the GovStack Implementation Playbook, and how will it help developing countries' digital transformation process? The first part of the question was addressed in section three of this thesis.

Organizational Structure and Culture

The theoretical background of the thesis highlights the importance of collaboration across public ministries as an important element in achieving digital transformation. Existing organizational structures, especially if siloed, may need to be re-examined, and, if

necessary, a coordinating institution may be necessary to foster digital transformation. The theoretical underpinning of the thesis emphasizes the need for collaboration across public ministries in accomplishing digital transformation. Creating digital service teams is one method to break down divisions. These teams work on rethinking government services and processes in order to provide more efficient and user-centric digital government services.

Leading figures responsible for the entire team and harmonizing digital government projects with national strategy are, therefore, important for digital service teams. "*Coordination must be centralized*," says Interviewee F. As shared by the interviewee, there were two primary focal points during the co-creation process of designing the Playbook. Similarly, GovStack urges governments to establish agencies that coordinate their digital transformation programs. The Playbook identifies critical roles such as the government Chief Digital Officer (CDO) or government Chief Information Officer (CIO).

On the other hand, adopting disruptive technologies into an organisation disrupts the workplace culture, which may result in employee resistance. "*People do not like change*," says Interviewee I. In organizations, people are most often content with the current work procedures and rarely perceive the value of change; this could be because people interpret change as a threat to what they are doing and hence prefer to stick with the current work practices. A successful change management plan, according to Interviewee I, is therefore essential for a successful digital transformation:

> You cannot achieve a successful digital transformation without a successful change management plan because you will end up executing while others are watching them, or they do not know what to do, and they are just noise over your organization, and they get paid for nothing.

As a result, public sector organizations must consider change management to be a vital component of digital transformation. As explained by Interviewee I, changing the organizational culture is a vital first step in implementing organizational reforms. Interviewee I further clarified that:

> Moreover, the culture is not dependent on the leader; it is a unit inside the business that leads change management and has a change management strategy.

But an effective change management plan also needs to include a migration strategy that includes the organization's current changes, the desired position and the measures the organization will take to transition the organization to the envisioned state. Another factor to consider in change management is ensuring that staff are retrained or upskilled rather than laid off, as Interviewee I highlighted.

> When changing people's jobs, you must have a change management plan in place to ensure that the change has no negative consequences for the employees.

Organizations must always exercise caution when managing change, especially when certain employees may lose their jobs or change their roles. Consequently, capacity-building programs must be made available to equip the employees with the needed skills to perform in their new roles and responsibilities.

The Playbook's change management section provides opportunities to handle resistance and improve cross-functional collaboration. The section covers crucial aspects needed to effect changes in practice. These include change management methodologies, models, and tools, as well as the various skills and competencies needed to effect the change.

Digital Skills and Capacity Building

The cornerstone of digital transformation in the public sector lies in the abilities and expertise of its workforce. Prioritizing sustainable and high-quality learning and training is critical to enabling public sector organizations to execute digital transformation initiatives effectively. The importance of training is emphasized by Interviewee H, who states that the best way to introduce new technologies is through daily training sessions and providing a comprehensive explanation of new system features. Interviewee B believes that a well-executed capacity building strategy would bring a lot of value to countries:

> The capacity building aspect, at least to me, if executed well, brings a lot of value to the Playbook. It delivers a set of resources that countries will find

> useful, such as the set of profiles along with job descriptions and qualifications.

Even though capacity building is an important aspect to achieving digital transformation, it requires significant investment which can sometimes be out of reach for developing countries as explained by Interviewee G:

> In 2003, post-Ebola, I worked for USAID, and we did a big project on this. So that is when we realized that you have to spend a lot of time and a huge part of the budget on capacity building. That was the only way we could make sure that the initiatives that we implement will be sustainable.

Similarly, a lack of digital skills can be a significant barrier to achieving sustainable digital transformation. Investing in people and human capacity continuously is fundamental to ensuring sustainable digital transformation. The Playbook recognizes this – the chapter on capacity buildings includes a large amount of readily available course material and course content from sources such as the World Bank, United Nations University, etc., as well as some of the best practices from various governments, such as the government of Singapore. As a result, users of the Playbook are provided with comprehensive resources on this topic.

Furthermore, the Playbook also recognizes the crucial role the academic community plays in ensuring continued sustainability and skills in a country. Interviewee G shares,

> I was even happy when I realized that academia component is in the Playbook. Because those are the discussions, we are having with Ghana now. Their academia needs to be involved in some of these transformation problems because, right now, research is a huge component of digital transformation. So, the Playbook spells out everything, and it becomes like a best practice manual by a Bible that you can use.

Therefore, increased focus on capacity-building combined with increased convening efforts would allow different stakeholders to share knowledge and skills relevant to the digital ecosystem. Consequently, the GovLearn section of the Playbook offers access to learning resources and Communities of Practice (CoPs) that support knowledge exchange and sharing of best practices.

4.2.1 Governance Frameworks

Data and administrative controls are often viewed as sources of power for officials in many developing nations; this leads to a reluctance to share data. Administrative controls, coupled with siloed information systems, create a significant barrier to improving services and building trust in the public sector. The lack of coordination results in the design of non-user-friendly digital services, as highlighted by Interviewee B:

> Yes, I mean digitizing of government services is taking place. There is no denying it. However, it is not happening in the most ideal way. Digitizing of services is happening in a more siloed way. So, let us say different ministries have got redundant digital resources and digital components. And the user experience across the services is not consistent.

As a result, government agencies may struggle to provide efficient and effective services to citizens. WOG framework, in contrast, entails making decisions regarding interoperability frameworks, institutional arrangements, organizational structures, and other factors that promote a collaborative approach to governance. The GovStack initiative promotes a WOG approach that makes coordination across agencies easier. As Interviewee B shares*:*

> I think the biggest selling point for GovStack Playbook is that we emphasize on the fact that you should first try and do away with the siloed approach of digitizing services. Concentrate on, first of all, deploying reusable and interoperable software components, which are building blocks. And based on these building blocks, go about digitizing services now.

The benefits of a collaborative model of governance include seamless operation and execution of public services that lead to enhanced citizens' trust in the delivery of services. Interviewee C explains:

> The building block approach makes it easier to digitize your catalogue without overspending and avoiding the siloed approach to digitization.

The literature analysis and interview results reveal that the key to successful digital transformation in developing nations lies in dismantling silos and embracing a collaborative governance model. By adopting the GovStack Playbook's WOG approach,

agencies can work together seamlessly, resulting in the efficient delivery of public services and increased trust from citizens.

4.2.2 Legal Frameworks

To fully capitalize on the advantages of digital transformation, it is crucial to not only embrace its benefits but also mitigate its risks. Legal frameworks must be established beforehand to ensure that citizens' rights and interests are protected when implementing digital services. Interviewee F emphasizes:

> An important thing you need to look at is the legal structure. For example, in the first three years, you might take time to set up everything. But once you start experimenting, you need to have your legal structure ready.

As Interviewee H notes, inadequate legal frameworks can hinder digital transformation. When responding to the biggest challenge in implementing the Extended Producer Responsibility (EPR) service, Interviewee H opened that an inadequate policy framework is one of the biggest challenges:

> It is about the regulations. Regulating the process of licensing and registering the product, even the policies regarding charging that amount of money. Yeah, I see those are challenging. Once those are solved, and the system is there, I think there will be no problem once we manage to implement the process.

Thus, frameworks governing the latest technology trends are important prerequisites for any digital transformation project. Creating an enabling ecosystem that incentivizes and regulates digital transformation is critical. While some countries may have paper-based policies in place, updating them to cover digital processes is necessary. Interviewee I highlights that:

> You have these laws in the paper-based system that we are all aware of. And you need to have similar ones for the electronic-based data. So, this is something that is important; to have the right legislation, and these can be either an inhibitor or a supporter.

Therefore, the importance of this sentiment cannot be stressed enough as major changes in digital service delivery may require new or amended legislation.

As seen from the literature, current public sector digital transformation context requires continual cross-governmental coordination and demands for governments to maintain the necessary legal and regulatory frameworks. Indeed, the existence of an appropriate and up to date legal framework as a prerequisite for a successful digital transformation is one of the themes that emerged from the interview coding analysis. The GovStack Implementation Playbook provides guidance on establishing forward-leaning policies and regulations that can facilitate leapfrogging in digital transformation.

4.2.3 Technical Infrastructure

A good ICT infrastructure facilitates inter-agency collaboration across government ministries. This is so because adapting and scaling digital services present significant challenges, particularly in rolling out ICT infrastructure and utilizing common data platforms. For example, the lack of digital identity presents a major barrier to achieving transformation, as highlighted by interviewee A when responding to the question on the key technologies needed by developing countries: "*They do not have unique identifiers for the persons. Digitalization just does not work."* Collaboration across government ministries, departments, and agencies is therefore essential, and building blocks offer potential for information and repository sharing and greater collaboration.

The GovStack Implementation Playbook promotes the establishment of a digital infrastructure GovStack Ecosystem Reference Architecture (GERA) that promotes scalability through a building blocks specification approach. As Interviewee F explained:

> what we are doing is like building your house. […] he bigger question here that GERA addresses is the blueprint. OK, you are building everything, but how do you know today if the bedroom will overlap with another bedroom or if the kitchen will overlap with the bedroom? Where is the washroom area? These kinds of questions have to be answered in a systemic way. Here the word '*system'* is important. The reason being is that one system should not overlap with another.

What Interviewee F means with a 'system' here is that the focus should be on reusability and scalability. As shown in Figure 10 below, GERA is designed with the following principles:

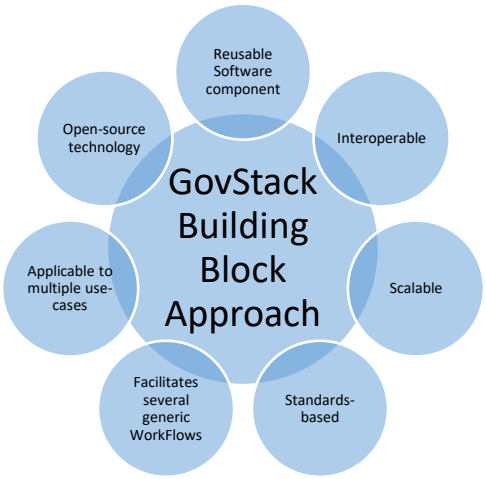

Figure 10: Characteristics of GovStack's Building Blocks (Source; author)

Another characteristic of GERA is the use of standards. More precisely, open-source standards, which are crucial for interoperability. Open-source standards have several advantages, as interviewee E explains:

> both quantity and quality. Quantity could be in terms of the cost savings and the usual [stuff], but quality could be in terms of how open source is democratizing the development of government platforms.

The same thought is reiterated by Interviewee D, who says: "*using open-source and the reusable components and things like this can reduce the cost drastically*." Open standards indeed are particularly important because they are not proprietary and can be adopted by different solution providers, ensuring interoperability and avoiding vendor lock-in.

Countries, however, have different sentiments towards the use of open-source software. For example, interviewee H shares the sentiment that countries are open to using open-source software because of the perceived benefits. Interviewee H explains that *"Open-source will be ok because if the system has access to the source code, you can even add more or customize it the way you want so that you solve this problem even further."* However, interviews conducted for this thesis show that this not a universal view. In contrast to the above, interviewee E explains, while relying on their personal experience working in the private sector that: *"there is some resistance in using open-source and I am not surprised by that, because even in the private sector there has been this chasm between black box software development versus open-source software development."*

This scepticism is valid, given the risk of cyber security breaches and accountability issues. As interviewee E points out:

> There is a lot of lack of appreciation for what open source can do for the GovTech domain and for all the right reasons, particularly in today's age, where cyber security is a huge risk. Going as a government stakeholder, someone who is accountable, you adopt open source, and then there is a huge cyber security breach. So, who is to take the blame and accountability for something that went wrong? There are real lives, citizens' lives, which are on the line. And more so in countries which are low on capacity.

Two of the key themes that emerged from this thesis were technical infrastructure and siloed governance frameworks. Even though results from the thesis acknowledge the scepticism of using open-source software in governments, this may be valid due to concerns about cybersecurity and accountability. As developing countries' governments face challenges in adapting and scaling digital services, collaboration and establishing a robust digital infrastructure will be essential for breaking down siloed infrastructures and achieving inter-agency collaboration across government ministries. The GovStack Implementation Playbook offers a solution through the GovStack Ecosystem Reference Architecture (GERA), which promotes scalability through a building block specification approach and open-source standards.

4.2.4 Funding

Limited funding poses a significant obstacle to digital transformation in developing countries, as revealed by several interviewees. As Interviewee D explains, lack of funding often results in partial or incremental approaches being taken. Interviewee C adds to this by highlighting that in places like Africa, competing priorities often force decision-makers to disregard the needs of digitalisation in favour of addressing more urgent issues. The limited funding opportunities, therefore, limit developing countries access to technology that can solve some of the digitalisation challenges they are facing, at times creating catch-22 situations. As summarised by Interviewee E:

> One is that government is usually cash-strapped and of all the priorities that the government is managing what they currently have. Carving out a separate budget for an entirely new leading-edge technology is a difficult sell.

Donor support, therefore, is crucial in implementing digitalization projects. As Interviewee H elaborates: "*It would not be possible if no person was assisting us with the budget. I think it would have taken more time to implement. Maybe in 10 years."*

Funding issues do not, obviously, affect only the initial setup. One critical challenge developing countries face is the funding gap for scaling and maintaining ICTs. Interviewee B pointed out that developing countries often need more capacity and resources to maintain existing systems. Some ICT systems run for a year or two after the setup and stop working. There are, however, ways to tackle this issue too. For example, Interviewee F suggested the GERA funding model, which divides funding into modular stages, as a possible solution to this funding issue:

> Let us say if there is a blueprint and if I have done 10% implementation of architecture in my health department. Now I release funds. It is like this; I do not give the entire $100 as a fund to GERA. Instead of that, you divide it into the progression of architecture. Let us say the health department has to progress within the next three years by implementing the GERA architecture. Then what you do for the first year, you invest 10% of the fund. And if it is a work in progress, then only you release the next $10 to the architecture for that health department. Then people will be like, you know now it costs $100. I do not need to spend it right now. Instead, I have spent $10 for the first 1-2 years. Let me see the progress, and then we will figure it out. So that kind of splitting the chunks of modules of funding will be helpful...

Finally, the Playbook highlights additional opportunities for developing countries through various funding models, as illustrated in Figure 11, and the cost savings resulting from utilising building blocks and open-source software in digital services, as detailed in Table 2 below.

Table 2: Cost-savings resulting from using building blocks and open-source software (GovStack, 2022)

Cost	OSS Solutions
Research and Development Costs	Reduced compared to proprietary digital government solutions. Research and Development is required only to consider applying GovStack to specific local circumstances.
Implementation Costs	Implementation costs remain, though a bank of case studies and tests from other governments will reduce the likelihood of compatibility and integration headaches.
Maintenance Costs	Reduced compared to proprietary digital government solutions.
Staff Training Costs	Staff training costs remain.
Staff Training Costs	Switching costs remain.

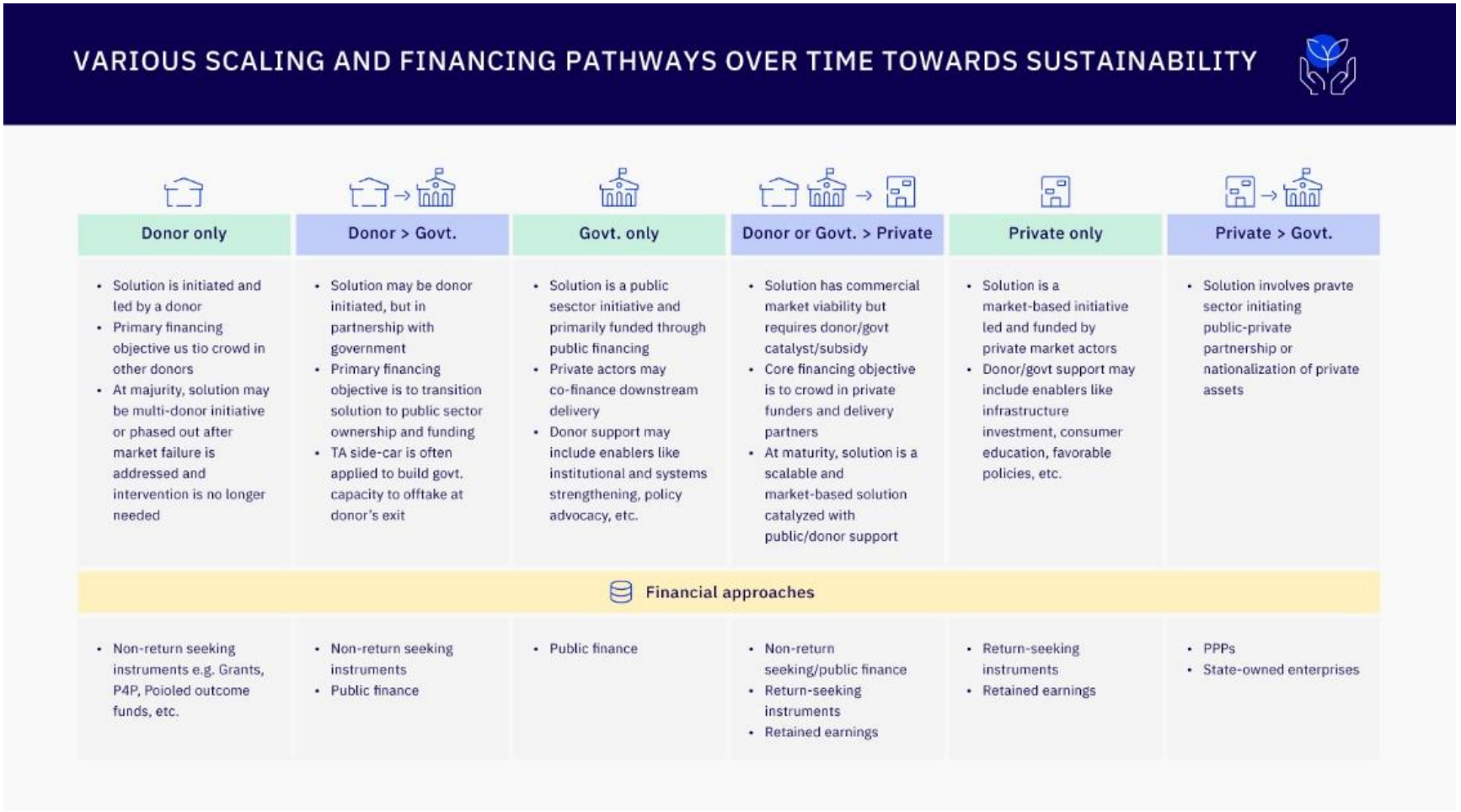

Figure 11: Various funding approaches for scaling and sustainability (GovStack, 2022)

4.2.5 Lack of Citizen-centric focus when designing digital services

In developing countries, often, service design is based on the administration's budget and convenience and does not necessarily align with citizens' needs. Furthermore, services do not recognize the diversity within the country. The diversity aspect was emphasized in the Playbook. Interviewee E explains:

> Within each country, there are different communities, and hence if you ensure that at a principal level, you are taking care of diversity, you are making that an important aspect of the playbook development. Countries can contextualize the various frameworks and strategies within the Playbook by keeping diversity as a core principle, even when they are using this broad Playbook for their country-specific requirements.

Furthermore, public service delivery should be equally effective and valuable regardless of citizens' preferred channels. As Interviewee I stated*:*

> the service should be delivered from different channels. It is up to the citizen to select the right channel or the channel that suits him best. Whenever we created a channel, we used to have a focus group where we sit with the guys and discuss with them; Do you think it is a good one if we do this? What is painful about this service? Why don't you think this one is provided in a good way and so on? Based on that, we design the service and its application.

The added value is offering citizens a seamless and enhanced user experience. GovStack's strategy focuses on designing user-centred digital solutions (Figure 12) that incorporate citizens' needs and concerns at every service design and delivery stage.

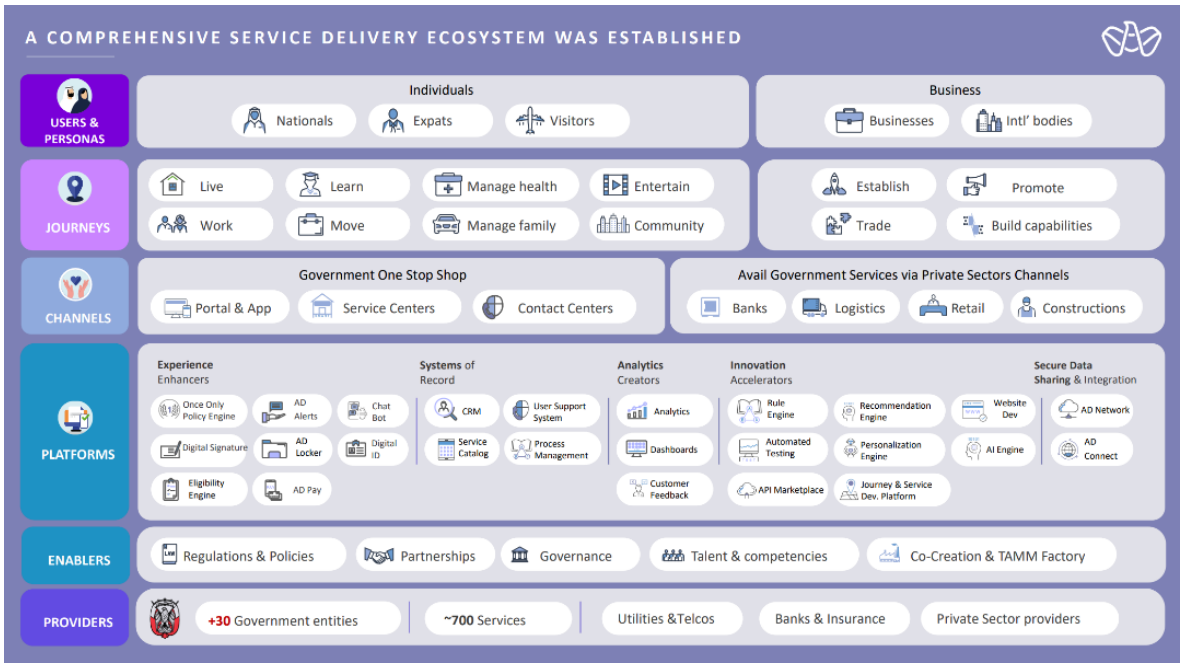

Figure 12: Proposed service delivery ecosystem model that ensures a user-centred approach to designing services (GovStack, 2022)

This approach includes considering various life events, employing the once-only principle, and enabling the use of multiple service channels, all of which are covered in the third section of this thesis.

4.3 RQ2: The Importance of Leadership in Achieving Digital Transformation

The successful adoption of the Playbook in developing countries requires careful consideration of several key elements. These elements are fundamental to establishing a robust and sustainable supportive ecosystem that can meet the growing demand of citizens for user-friendly digital public services. This section addresses the second research question: "What are the key elements needed for the successful adoption of the Playbook in developing countries?" By providing comprehensive answers to this question, policymakers, stakeholders, and industry players can gain valuable insights into the critical components necessary to implement the Playbook approach successfully.

4.3.1 Leadership and Political Will

As highlighted in the themes, successful adoption and implementation of digital transformation require transformative leadership. Countries leading in digital government have demonstrated that a clear vision and strategy, along with strong political leadership, are crucial assets in any transformational process. Firstly, leaders must comprehend their country's unique challenges and be prepared to make difficult choices to overcome them. Interviewee F emphasizes that:

> The political leadership has to understand and envision this kind of strategy. Once the political leadership understands its importance, they need to start growing the other pool of people in charge of change management.

Similarly, insufficient planning can hinder digital transformation. Once strong political support has been established, developing a shared strategy or vision is crucial. The absence of a digital strategy or shared vision can lead to delays and failures of the initiative. A shared vision promotes alignment of the overall goal among the entire leadership of the country, as Interviewee I point out*:*

> You must have a clear vision of what exactly you want to achieve through digital transformation. Different countries might have different meanings for digital transformation. They might not be the same. So as a country or as an organization, you should be clear about what you mean by digital transformation. Do you mean just transforming structures to be computerized, or do you mean changing the organizational structure and culture and the people's mindset to think digital and operate in a digital way?

When developing a shared vision for digital transformation, it is essential to ensure that it is comprehensive and focuses on citizen-centric services. Interviewee F explains that:

> The strategy itself should focus on people. Should focus on re-thinking processes. It is not just modernizing a process, but we think about why I am delivering this service this way.

Even with a clear vision in place, the importance of high-level political commitment cannot be overstated when it comes to implementing necessary reforms in a timely and effective manner. Interviewee G explains the drive must be internal:

> GovStack [..] cannot come and tell a government, 'See, you are not motivated. Your leaders are not trying.' That is a violation of sovereignty. No, nobody should say so. A country has to realize that kind of thing. We cannot enforce a legal structure or anything on any country; that defies the purpose of GovStack.

Hence, without high-level political support, there will be resistance to change, which will hinder progress. Political leaders must own the digital transformation process. Without ownership, governments will not be willing to commit to these initiatives fully. As interviewee A explains:

> they must have the ownership […]. Once this is in place, it would be a joy to work with governments who have a clear internal flame. So, to say, to work with us and to go out and understand their role as the owners of the digitalization processes.

The ownership motivates the government to work collaboratively with experts and stakeholders to ensure that digital transformation initiatives are implemented effectively. In an ideal world, political leaders understand their role as the owners of the digitalization process, and external support can be provided to aid them in their efforts. However, there can be resistance to adopting these technologies due to political economy concerns. Adoption of new technologies, or any change for the matter, can disrupt existing social hierarchies and rent-seeking activities. Hence, those benefiting from the current arrangement can be expected to resist the change. In case of rent-seeking activities, corruption is of particular concern in developing countries. As Interviewee G explains:

> in India, there was huge resistance. [Thinking went that] 'Why should I use my computer? You know, I am very happy because under the desk I can do a lot of corruption or bribe I can do. And you know, by bringing laptops and computers, you will ruin my pocket money.'

Thus, organizational leaders must prioritize developing a digital mindset to prepare the team for the disruptions associated with digital technologies.

Ultimately, strong, and visionary leadership is crucial to building a sustainable ecosystem that supports digital transformation. Without the political will, the Playbook will not be a useful asset, as underscored by Interviewee D:

> the area [where it] is difficult for the Playbook to play a role in is the political will in this country to spend money and effort on this direction, and that is something that probably needs to happen on a political level rather than an implementation [level] because if [political leaders] do not want to spend money, they are not going to spend money.

Based on the conceptual framework and analysis of the themes, it is apparent that strategic leadership and political will are necessary for the successful adoption of the Playbook. However, it remains unclear which components support the development of such leadership and drive. The debate exists as to whether external stakeholders or stakeholders led from within can establish an ecosystem that promotes leadership in digital transformation. So far, it can be deduced that a country's leadership, particularly when funders are involved, must completely own, and commit to these transformation programs. Without this, the country cannot deploy the Playbook and its components or own any of the digitized services.

4.4 RQ3: The methodologies for using the GovStack Implementation Playbook

The GovStack Implementation Playbook is a generic best practices book that provides a high-level approach to digital transformation. By design, it is generic rather than case-specific in nature. As highlighted by Interviewee B, there will be case studies on how various countries managed their digital transformation with the help of the GovStack initiative. The Playbook, therefore, offers an opportunity for countries to launch their digital transformations with a solid and well-planned foundation. The Playbook recognizes that there is no one-size-fits-all solution to implementing digital technologies in public organizations. Instead, it provides a range of strategies and uses cases to help countries develop their own approach, as revealed by Interviewee E:

> There are many different strategies which have gone into creating the Playbook. To cite one of them, there is this importance versus feasibility framework in implementing use cases. One thing that we continue to keep in mind was there just cannot be one strategy that fits all countries' needs. So, we tried to incorporate as much information as many different use cases that we have come across in various government digital transformation projects.

> We have tried to include those experiences into the Playbook, keeping in mind that every country is different.

Nevertheless, as Interviewee D reveals, the generic nature of the Playbook will help countries pick up the applicable frameworks based on their unique context:

> I see the Playbook as a document that's very important for whoever is going to put together a strategy or roadmap to go through it and to pick from it the parts that are indicative of where they are starting from.

It is important to understand that different countries have different challenges and are at different digitalization stages. Thus, countries need to use the readiness assessment framework of the Playbook and based on that, develop strategy goals as elucidated by Interviewee A:

> It depends on the situation. But the first step always is to get an understanding of the situation, and then you set the goals or objectives. Where do you see yourself in the next five years and so on?

Interviewee E shares that understanding the country's context helps the leader formulate a strategy that will actualize the country’s vision:

> I think strategy is the most important part of the Playbook because that is where many of these strategic frameworks and ideas have been mentioned. And it is at this point that you can start contextualizing the rest of the Playbook to one country or government’s specific needs.

Interviewee D also notes that different countries will find different sections of the Playbook more applicable to their needs:

> It all depends on where exactly the status of each country that is going to be using this or each project of each approach. So, if you look at a country that did not have a strategy to start with, the part talking about strategy and governance and capacity assessment are very important. But there are some countries that have already gone quite far in developing their own methodologies and this installation. So probably, if they are in the process of getting some enhancements on whatever they have, the implementation part will be more useful to them. And some countries have just bought some

solutions and want to build their own ecosystem and capacity. Here, the capacity section will be more useful.

The literature review and thematic analysis reveal that countries are at different stages of digital transformation and face distinct challenges and obstacles. While the Playbook does not provide a comprehensive solution to address these challenges and barriers, it does offer a valuable starting point for public sector organizations seeking to adopt digital transformation. By customizing the Playbook to their specific needs and context, countries can develop an individualized strategy that aligns with their goals. Notably, the present drawback of the Playbook is the absence of use cases explaining the implementation process, which limits proof of concept. Nevertheless, these gaps will be filled as more countries implement digital transformation initiatives using the Playbook, and as the Playbook undergoes subsequent iterations.

4.5 Sustainability of the Playbook

A key theme that emerged from the interviews was the sustainability of the Playbook. As explained in the case study chapter, the GovStack Playbook undergoes continual iteration based on feedback from countries regarding the efficacy of its various artefacts and tools and user-centred design processes to ensure that it remains topical and relevant. With regular iterations to capture various countries' changing demands and settings, this practice ensures that the Playbook stays dynamic and adaptive. It is this continuous iteration, together with the Communities of Practice (CoP) and increased accessibility through its availability into multiple languages, that will guarantee the sustainability of the Playbook.

The first of these three sustainability-enhancing elements, continuous iteration, is made possible by case studies that provide the necessary feedback. The Playbook is already accessible on the open web (GovStack, n.d). Additionally, GovStack disseminates information and guidelines on digital practices from the Playbook during the country missions. These country missions are conducted to co-create public services in coordination with the implementing countries. Nevertheless, for the Playbook to remain relevant, a more systematic strategy is needed rather than just country missions and use cases. Furthermore, sharing and disseminating Playbook experiences and use cases must

go beyond merely disseminating "best practices" and incorporate ideas that fell short of initial targets or were abandoned. As Interviewee E explained:

> we're going to have 1 pagers which give you an overview of how services have been digitized based on the GovStack approach and perhaps even more detailed versions of actual implementations covered in case studies.

Subsequently, data from these case studies will allow new technologies and methods to be captured within the new iterations of the Playbook. A key point to note is that these iterations should not only cover the successful practices but also failings and obstacles that other countries can avoid to achieve full public sector digitalization. Therefore, the sustainability of the Playbook stems from the fact that other countries can learn from the case-study countries' experiences in the new iterations of the Playbook.

The second sustainability-enhancing element is various engagements through the Communities of Practice (CoPs). CoPs are groups of professionals (digital government leaders and industry leaders) who join different online and physical forums to network, learn, collaborate, and share knowledge and emerging best practices on digital transformation. Furthermore, these CoPs, such as the annual Tallinn Digital Summit, offer networking opportunities while fostering an ecosystem of creativity and knowledge sharing, thereby creating spillovers and a platform for sharing timely knowledge and practices. In the case of GovStack, currently, such CoPs include the CIO Digital Leaders Forum and its cooperation with the Digital Public Goods Alliance (DPGA).

Having the Playbook in multiple languages will also guarantee its sustainability. As of early May 2023, the GovStack is available only in English, which limits the number of countries that can use it. However, there are plans to translate the Playbook into other languages, as interviewee C explains:

> Now we're talking about translating to French, but soon we're going to be dealing with countries that speak Portuguese, for example, Mozambique and you know these Arabic countries, so make it more, more accessible by translating it into as many languages as we are exposed to.

Nevertheless, the Playbook should not only be available in the languages of countries with which the GovStack initiative already engages. In order to guarantee wider usage and consequently ensure sustainability, the Playbook should have an integrated machine

translation function that would allow the content to be translated into all the languages that the machine translation algorithm is able to handle.

To summarize these findings, the author of this thesis proposes that the sustainability of the Playbook relies on three key elements, as shown in Figure 13 below.

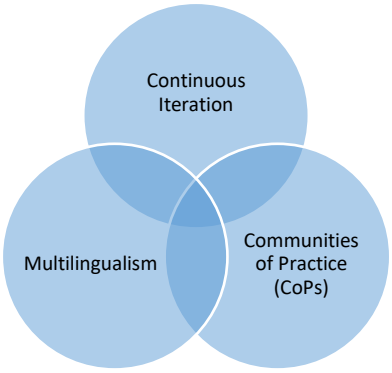

Figure 13: The three pillars of the sustainability of the Playbook (Source: author)

4.6 Summary of Findings

The GovStack Implementation Playbook is generic and designed to be adaptable, taking into account different countries' unique and varied challenges. It presents essential opportunities for nations, particularly developing ones, to overcome predictable obstacles and difficulties while transforming their public sectors and services. A comprehensive analysis of these opportunities is highlighted in Table 3 below.

Table 3: Summary of findings for RQ1. (Source: author)

Barriers and Challenges to Digital transformation	**Opportunities from the Playbook**
Siloed Governance Structure	WOG Approach
Digital Skills and Capacity Building	GovLearn, CoPs
Technical Infrastructure	GERA, Building block approach and open source
Funding	Incremental funding approach
Leadership and Organizational Structures	Government CIOs/CDOs in charge of Digital Service Teams
Designing Citizen-centred Services	Service cataloguing, end-to-end service design and delivery templates, and use cases

Robust leadership and strong political determination are indispensable to effectively implement the Playbook approach for digital transformation in developing nations. A well-defined vision, strategy, and resolute political leadership are pivotal components of any transformative undertaking. Establishing a shared vision for digital transformation that encompasses citizen-centric services is vital. However, the significance of high-level political commitment cannot be emphasized enough. It is imperative for leaders to take ownership of the digital transformation process and inspire their governments to commit to these initiatives wholeheartedly. Ultimately, dynamic and visionary leadership facilitates the establishment of a sustainable ecosystem (Table 13) that accelerates digital transformation.

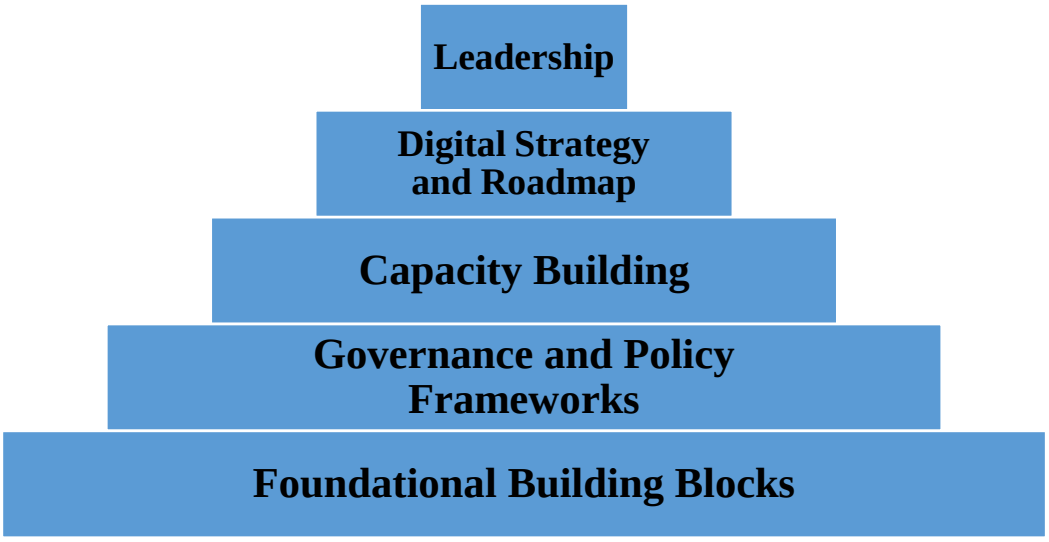

Figure 14: Sustainable eco-system for digital transformation. (Source: author)

5 Conclusion and Future Work

The literature on digital transformation in public sector organizations often focuses on success strategies from leading countries. However, it fails to provide an understanding of the need for a playbook that other countries, particularly developing countries, can replicate or customize to achieve the same level of public sector digitalization. The main aim of this thesis was to address this gap by analysing the challenges that developing countries face and how a playbook, such as the GovStack Implementation Playbook, could be useful to these countries. Specifically, the study aims to answer three questions: 1) What is the GovStack Implementation Playbook, and how will it help developing countries' digital transformation process?

2) What are the key prerequisites for the successful adoption of the Playbook in developing countries?

3) What are the methodologies for using the GovStack Implementation Playbook?

Throughout the literature review, the author identified several obstacles that impede digital transformation in developing countries and attempted to establish a correlation between the fundamental concepts that foster it, such as governance frameworks, transformational leadership, and digital skills and capacity building. Subsequently, an exploratory case study methodology was employed in this thesis to gather qualitative data and attain profound insights that address the research questions at hand. Qualitative data analysis techniques were applied to the collected data, identifying five meta-themes (Figure 9). These themes were then analysed in relation to the research questions, resulting in important insights that shed light on the topic. The following paragraphs describe these findings in detail.

Answering RQ1: This thesis has identified that the challenges associated with digital transformation in developing countries are varied and unique from country to country. The themes derived from the digital transformation challenges and barriers summarize the key challenges. These challenges include but are not limited to organizational structure and culture, digital skills and capacity building, governance frameworks,

leadership, funding, technical infrastructure, legal frameworks, and a lack of citizen-centric focus when designing digital services. On the other hand, the results have also shown that the Playbook offers potential solutions to these issues. A coordinated governance framework, capacity building resources, digital service design standards, and open source and building blocks can help overcome funding obstacles, as outlined in Table 2. Thus, developing countries can adopt the Playbook to overcome some of these pertinent challenges.

Answering RQ2: The thematic analysis demonstrated that leadership and political will play a key role in the adoption of new technologies and thus, will play a crucial role in the successful adoption and implementation of the Playbook. The analysis reveals that the first step is for transformative leaders to develop and communicate a digital strategy to their team. The digital strategy must prioritise citizen-centric services over reducing administrative burden. By sharing the vision throughout the organization, leaders can help minimize resistance to change. While the study shows that digital strategies provide direction, vision, and pace, implementing the strategy can be challenging. In order to overcome the implementation challenge, it is crucial to have a country digital team responsible for driving and implementing measures designed to digitally transform public sector organizations, their culture, and work practices.

Answering RQ3: Finally, the third research question aimed to gain insights into the methodologies for utilizing the GovStack Implementation Playbook. Although the Playbook does not offer tailor-made solutions for the unique challenges developing countries face, it provides opportunities for developing countries seeking to implement digital transformation in their government organizations, as described in the themes. The findings demonstrate that one of the most critical steps is for countries to comprehend their country's context and, based on that, design or adjust their digital strategy to achieve their vision. Once the country's leaders are aware of their current situation, they can identify the Playbook sections relevant to their context and begin the digital transformation journey from there.

Besides answering the three research questions, the author of this thesis proposes that the sustainability of the Playbook relies on three key elements: the continuous iterations, the engagements through the Communities of Practice and the multilingualism of the Playbook, as also summarised in Figure 13.

5.1 Limitations of the Research

Case study methodology inherently results in some limitations. One such limitation is generalizability. While concerns have been raised regarding the generalizability of case study research, it is still a valuable method for exploring unknown phenomena and expanding and generalising theories (Yin, 2009) in qualitative research. However, ensuring rigour, validity, and reliability are critical considerations in any case study research.

Yin (2009) identified bias, reflexivity, selectivity, and availability as some of the weaknesses and limitations inherent in this methodology. When a single researcher performs data analysis, there is a possibility for bias in the coding process, as researchers tend to bring their subjective viewpoints and predispositions to the task (Saldaña, 2021). This potential for bias is also present in cases where the author is an active participant in the project, as was the case in this study. However, the author has taken steps to address this issue by neutrally presenting the findings, allowing readers to assess the conclusions independently. Moreover, the author acknowledges that being an active participant in the project has advantages, such as providing insider knowledge and access to information that would not be available to an outsider. As noted by (Yin, 2009), this advantage enhances the depth and richness of the data collected.

In case study research, establishing credibility is of utmost importance. To achieve this goal, the author utilized several strategies to guarantee that the study accurately measures its intended results. One of these approaches involved utilizing a variety of data sources and expert interviews. The author gained a comprehensive understanding of the case study by analysing multiple data sources. Additionally, expert interviews provided valuable insights from various perspectives and roles in digitalization, further enriching the findings. To bolster the study's credibility, the researcher interviewed stakeholders from a range of backgrounds, roles, and perspectives.

While the author acknowledges the weaknesses of the selected methodology, they opted for the case study approach to gain a deeper comprehension of the issue at hand. As the paper is on the GovStack Implementation Playbook, the insights can enrich the limited research on digital transformation playbooks and their potential to expedite digital transformation processes, particularly in developing nations.

5.2 Future Work

The Playbook is still in its developmental stage, and no digital services have been fully implemented using this approach. As a result, drawing definitive conclusions about its success and effectiveness is currently not possible. Nonetheless, it is important to note that the Playbook is relevant, and it captures current best practices from leading countries, which will continue to be updated in future iterations.

This research has highlighted that there is no one-size-fits-all model to address developing countries' digitalisation challenges. Given the lack of existing studies evaluating the usefulness of a playbook to guide countries' digital transformation, further research would be necessary. While specific metrics to measure the Playbook's usefulness have yet to be identified, one suggestion for researchers would be to study developing countries that have already implemented digital services using the Playbook approach. Having success metrics would help to understand the Playbook's effectiveness, identify the most valuable insights, and identify any lessons that could be incorporated into future iterations of the Playbook.

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Appendix 1- Interview Questions for the Playbook Developers

#Describe your current role.

#How long have you held this position?

1. Can you walk me through your experience developing the GovStack Implementation Playbook, including your key roles and responsibilities during the process?

2. How would you describe the primary objective of the Playbook, and what inspired you to create it?

3. How did you determine which strategies and tools to include in the Playbook?

4. What challenges did you face when developing the Playbook, and how did you overcome them?

5. In your opinion, what makes the GovStack Implementation Playbook unique and effective compared to other digital transformation resources available in the market?

6. In your opinion, what are the most important elements of the Playbook that countries should focus on implementing first?

7. Could you share some insights into how countries can effectively integrate the Playbook into their national agenda and what key factors should be considered for successful implementation?

8. In your opinion, what are the biggest challenges that countries face when implementing digital transformation initiatives, and how can the playbook help overcome these challenges?

11. Can you tell me about any lessons learned or best practices that have emerged from your work on the GovStack Implementation Playbook, and how you have incorporated these insights into the resource?

12. How do you envision the Playbook evolving in the next five years, and what new features or resources do you plan to include to support continued transformation efforts?

Transcripts of conducted interviews are available upon request.

Appendix 2- Interview Questions for the Government Stakeholders

#Describe your role in the government

#How long have you held this position?

1. How do you define digital transformation, and in your opinion, what are the key components of a successful digital transformation strategy?
2. Would you describe the digital transformation initiatives currently underway in your country? (Your role in implementing the initiatives)
3. How is the implementation of the digital transformation strategies usually designed and which major factors are taken into consideration?
4. What are the key challenges you face when implementing digital transformation initiatives in your country?
5. Based on your experience, what are the ways you have effectively used to overcome the challenges?
6. How do you ensure that government officials at all levels have the necessary digital awareness and skills to effectively implement digital transformation initiatives?
7. What strategies do you employ to manage resistance to change during the implementation of digital transformation initiatives?
8. How do you engage with citizens and stakeholders in the development and implementation of digital transformation initiatives, and what role do they play in shaping the overall strategy?
9. How do you ensure that digital transformation initiatives are inclusive and accessible to all citizens, including those with limited digital literacy or access to technology?
10. How do you measure the success of digital transformation initiatives in your country, and what metrics do you use to evaluate progress?
11. How do you see digital transformation evolving in your country in the next five years, and in your opinion, what kind of technology would help these partnerships?

12. What are your opinions on the need of a digital transformation playbook to help accelerate the digitalisation of public services?

Transcripts of conducted interviews are available upon request.

Appendix 3 – List of Interviewees

Interviewee	Job Title	Organization
Interview A	Program Manager for Digital Transformation	EstDev
Interview B	Junior Technical Officer	ITU
Interview C	GovStack Regional Coordinator Africa region	ITU
Interview D	GovStack Regional Coordinator for the Gulf Region	ITU
Interview E	Digital Government Expert for the Asia-Pacific Region	ITU
Interview F	GovStack Digital Government Specialist	ITU
Interview G	Digital Development Specialist	World Bank
Interview H	GovStack focal point for the Extended Producer Responsibility (EPR) in Rwanda	Government of Rwanda
Interviewee I	Former Minister of Administration Development in Egypt	Government of Egypt

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