

Using Digital Tools to Improve Service Delivery: Pemba Town Council, Zambia

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Table of Contents

Abstract	5
Introduction	6
Literature Review	7
Methodology	10
Data Collection	10
Data collection methods	11
Data Analysis	12
Results	13
Knowledge about digitalisation	13
Knowledge about services offered by the council	13
Prioritised services for digitalisation	13
Challenges	14
Discussion and recommendations	16
Conclusion	20
References	21

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Abstract

Digital transformation has emerged as a new way of doing business using technology. Many national governments have adopted the use of digital tools, but its adoption by local governments, particularly in developing countries, presents some challenges. This research was aimed at helping Pemba Town Council in Zambia to explore how it can improve service delivery to its citizens through the use of digital tools. The council lacks basic information and communication technology (ICT) infrastructure and ICT-enabled systems which affects how it interacts with citizens and the timely provision of services to its citizens. Using an action research methodology, researchers engaged the community and the local authority through focus group discussions and key informant interviews. The findings highlight the valuable role that citizens play in local decision making. They also show that despite some challenges, the local authority and stakeholders were enthusiastic about digitising services, and their input helped to inform the development of a digital strategy for the Council. The strategy outlines Pemba's digital transformation roadmap for a period of five years (2022-2026). It is recommended that such engagements continue throughout the implementation period to ensure that the process remains people driven.

Introduction

When digital transformation is done right, it's like a caterpillar turning into a butterfly, but when done wrong, all you have is a really fast caterpillar.

- **George Westerman, MIT**

As the world is currently in the Fourth Industrial Revolution, an era in which technology is becoming embedded within society and even our human bodies (Davis, 2016), innovations in information technology and digital devices are causing the world to move towards a new emerging paradigm of digital transformation. This introduces strategically focused changes in infrastructure and ways of operating based on current information and communication technologies (ICT) (ElMassah & Mohieldin, 2020). Digital transformation aims to enhance the adoption and the use of digital tools to improve the way the government serves its citizens and other community stakeholders. Most importantly, digital tools can enable citizens to access the services quickly and at their own convenience, whilst also facilitating more efficient and effective administrative processes for council staff. And since local governments are responsible for a range of vital services for people and businesses in defined areas, it is important to provide these services efficiently.

The use of digital tools was brought up for discussion by representatives from Pemba Town Council within the thematic session of Digital Services and Innovation in the Local Democracy Labs held on June 8th, 2022 when researchers met local government officials that are part of ICLD programmes to discuss pressing issues faced by the municipalities. With an Impact Research Grant from ICLD, researchers aimed to help Pemba Town council to solve operational dilemmas and improve service delivery by providing a roadmap for the implementation of digital tools in the form of a digital strategy. Pemba Town Council is located in the Southern Province of Zambia, serving a population of over 80,000 citizens (CSO, 2019).

Although the use of ICT-enabled systems to streamline services is not new in Zambia (Chipeta & Ngoyi, 2018), its use has largely been adopted by the national government in its various departments. In fact, a

digital economy diagnostic report by the World Bank (2020) recommends that the government of Zambia develops a digital transformation strategy, with a dual focus on meeting the country's Seventh National Development Plan (7NDP) targets, and improving the country's fiscal space. Many local authorities, especially fairly young councils like Pemba Town Council had not yet taken advantage of the benefits of digitalisation. Therefore, conducting this research is not only important, but also necessary in order to discover new ways for local governments operating in similar contexts as Pemba Town Council on how they can possibly approach digital transformation. Digital government can empower users to access digital public services at their convenience and in new ways.

Citizens can enjoy enhanced interaction with public administrations within and across tiers of government, for example. Where service provision is fragmented across disparate public agencies, governments can embrace the "once only" principle. This would reduce the burden for citizens and businesses of having to provide the same information multiple times. In addition, digital one-stop-shops can ease access to information and assistance, such as for job seekers. Governments can also gather more detailed information through interacting with citizens online to personalise public services and better target public policies (OECD, 2019).

Problem statement

Despite being in existence as a local authority since 2013, Pemba Town Council still lags behind in terms of basic information and communication technology (ICT) infrastructure and ICT-enabled systems as it relies largely on a manual based system. The current system setup lacks in terms of the classification of services, data, and information. Lack of basic information and communication technology (ICT) infrastructure and ICT-enabled systems can be named as the main causes of limited integration of departments at Pemba Town Council. As a result, there are data inconsistencies across the local authority's departments. There is not only a lack of an internal inte-

grated system that handles data and facilitates data and information sharing between the various council departments, but also a lack of an internal-to-external system that can facilitate engagement between the council's internal systems and the citizens.

Pemba Town Council has to a lesser extent utilised digital tools to enhance service delivery. Low-tech tools such as short message service (SMS), and publicly available third-party high-tech platforms such as WhatsApp have been used to a lesser extent, for passing simple messages between a few stakeholders. Even though these tools have been used by some stakeholders for communication, they have not found themselves being adopted for mainstream service delivery. Pemba Town Council still lags behind in terms of basic information and communication technology (ICT) infrastructure and ICT-enabled systems, as the council largely relies on a manual based system. The current system setup lacks in terms of the classification of services, data, and information. This is demonstrated by two broad problems: a) The inexistence of an internal data strengthening system, a digital platform that helps with storage, and access to information between the various council departments; b) The inexistence of an internal-to-external system that facilitates engagement between the council's internal systems and the citizens, therefore, limiting the engagement between the local authority and the citizens.

As the population expands, the number of services that the local authority of Pemba offers to its citizens increase. The growing portfolio of services means that there is more need for synchronised operations between the various departments of Pemba Town Council to enable efficient service delivery to the community. A centralised data repository and strong internal data system is thus needed not only to provide efficient service delivery to citizens, but also to improve the council's financial management which is affected by the data inconsistencies across the council departments.

Literature Review

This section presents literature regarding digital transformation, focusing mainly on the lessons that existing literature shows regarding embarking on, and sustaining a digital transformation exercise in the public sector (including local authorities) and the challenges. In so doing, it considers some examples from different contexts.

Digital transformation in the public sector entails new and innovative ways of working with stakeholders, setting up new frameworks of service delivery and developing different types of relationships. According to Grönlund (2010), digital transformation is a comprehensive process that requires a well-thought implementation roadmap called a strategy. When embarking on digital transformation, there is a need to draw a plan that clearly specifies the elements of the transformation that aligns with the information, technology, processes, objectives and values, staffing and skills, management systems, and structures (Hartley & Seymour, 2011). This presents a holistic view of the digital solutions that address the problems experienced, and a holistic approach to solving the problems, since service delivery can be affected by the lack of adequate input in the form of people, technology, and infrastructure (Hartley & Seymour, 2011). Digital transformation in local authorities is however an underexplored area as much research has focused more on central government (Bousdekis & Kardaras, 2020). This is despite the argument that local governments are in a better position to integrate government, private, and citizen data to deliver beneficial new digitally enabled public services (Montezami & Pittaway, 2020).

Kane et al. (2015) note that it is the digital strategy that drives the digital transformation as opposed to the popular notion that technology is the driver. Moreover, what has been observed is that a technological change does not follow a predicted path, and particularly important in the public sector, technological changes are conditioned and constrained by organisational and institutional arrangements

(Fountain, 2009), interacting and co-evolving with them in complex and recursive ways (Luna-Reyes & Gil-García, 2011). It is recommended, therefore, that during the initial phase of digital transformation to draw lessons from success cases from different countries and contexts to create awareness and caution to avoid potential problems.

It is important to understand the characteristics, the barriers, and the strengths of a country's digital transformation in various domains of the public sector in order to identify how digital transformation differs based on country size, its history, and context as well as how these dimensions might have an impact on their digital transformation efforts (Bousdekis and Kardaras, 2020). Comparative data has shown that there are regional differences in the level of digital governance in the public sector and the rate of digital transformation. While some nations, particularly in the global north have made significant advancements, others have made less progress or have even exhibited resistance to the trend for digitalisation reform. (Ma & Zheng, 2019; Melitski & Calista, 2016; cited in Kulmann and Heuberger, 2023).

It is also worth mentioning that digital transformation in different countries involves different stakeholders and therefore the output of the process can vary. Most importantly, this process must reflect the particular needs and circumstances of the society. Case studies on Germany's local digital transformation for instance shows that there was a general lack of strategic orientation or targets regarding digital transformation, resulting in incremental implementation of e-government initiatives (Kuhlman & Heuberger, 2021). A case study describing the digital transformation of the Italian Public Administration also shows that getting local public administration support was essential for digital transformation (Datta, 2020). A crucial step in creating policies for digital transformation is, therefore, to have a clear understanding of citizen's needs and their behaviour, and support from local public administrators is important for transformation, as they help to promote social change (Datta, 2020).

Bousdekis & Kardaras (2020) argue that the challenges of adopting digital technologies, and the success factors of digital transformation for local governments are centred on a number of factors. These include ensuring citizen-centred services, strategic digital culture, interoperability, digital skills of employees, and technology procurement. In addition, implementation of digital tools brings about institutional and procedural changes which have an impact on the staff and administrative procedures (Kuhlmann & Heuberger, 2023). Problems related to acceptance and satisfaction or even technophobia are not uncommon. These issues have many different causes, ranging from unhappiness with how new technical tools perform to resource shortages and organisational issues associated with the adoption of new technologies (Dukic et al., 2017). However, research also indicates that public personnel value the benefits of digital connection with residents, particularly the quickness and simplicity of using digital technologies (Berger et al., 2016).

The impacts of digital transformation on citizens and staff have however, been largely understudied in e-government research regarding the local public sector, despite empirical findings suggesting that the success of digital transformation is positively related to citizen satisfaction (Ma & Zheng, 2019). This means that officials must be aware of the needs of the citizens and the likelihood that those needs will conflict, as well as the internal (bureaucratic and political) difficulties that will arise during the process. Effective leadership is thus necessary for digital transformation, and there is a greater possibility for success if officials act in accordance with a strategy and plan.

As planning is vital for digital transformation, a plan must identify, define, and address the agreed outcomes, outcome metrics, key activities, key inputs, and the delivery and performance agreements (Hartley & Seymour, 2011). Denmark's digital transformation for instance has in its digital strategy a strong mandate for coordination, cross - and joint-governmental approach, consultative and consensus culture for strategy formulation and implementation across

all levels of government which helps align objectives and create a sense of joint ownership (Nielsen, 2019). Similarly, Switzerland digital initiatives involve various stakeholders at different government levels, but unlike countries which are ruled from the centre, Switzerland's approach to digitalization has required finding political consensus among its many governance actors. The combined approach—coordinated political and policy actions together with grassroots movements entails that digitalization is promoted both centrally and locally, yet with a view to balance needs, power, and responsibilities among the many distinct actors in Swiss society (Mettler, 2019).

To successfully implement a digital transformation programme, governments must thus identify key areas of implementation as raised by stakeholders and prioritise them (Filgueiras et al., 2018). The digital transformation processes must be citizen focused (Chipeta & Ngoyi, 2018). Governments must also consider that the key areas of the digital transformation programme can change and they must act accordingly, as was significantly expressed in a recent global pandemic (Fletcher & Griffiths, 2020).

The use of digital tools at government level is not a new phenomenon in the African context. Notable examples have indicated that digital tools have been proven to be effective in fostering accountability and transparency in service delivery (Mutungi et al., 2019; Barasa, 2022; Pade-Khene et al., 2020). Apart from fostering accountability and transparency, digital tools have also been used to enhance public health delivery systems and interaction between government and citizens (Pade-Khene et al., 2020; Orton et al., 2018). The ability of digital tools to eliminate conditions that favour corruption whilst enhancing transparency and accountability has led to countries like Kenya, Tanzania, Ethiopia, Malawi, Mali, Nigeria, Rwanda, and Uganda, to implement digital transformation programmes aimed at streamlining government services (Mutungi et al., 2019).

As alluded to already, most academic literature has placed emphasis on digital transformation in central

government or on the public sector as a whole, neglecting local government. This situation is similar in Zambia as there is limited academic literature to support digital transformation in other local governments to make reference to for this case study. Besides some institutional reports and documents speaking to digital transformation, there is limited empirical evidence regarding the process, its challenges and/or success factors

Planning a digital strategy for Pemba Town Council is thus important, and novel in this sense as it anchors the direction and priorities of the public service, and is critical to drive change that impacts how people interact with the local government by ensuring all services are easy to access and designed for citizens and other community stakeholders. Developing a digital strategy was therefore identified as a priority step towards a comprehensive digital transformation exercise. The digital strategy is the roadmap that indicates the priority areas that will drive the transformation exercise.

Methodology

The research was qualitative in nature, and was both exploratory (aimed at exploring ways to improve service delivery through digital tools) and descriptive (aimed at describing the digital challenges facing Pemba Town Council in delivering services to the community). The research used an action research design as it was deemed the most appropriate to answer the research question “How can digital tools be used to improve service delivery for Pemba Town Council?”. Action research is ideal and suggested for local governments wishing to make a meaningful impact within their communities (Aimers, 1999). Furthermore, the research was guided by insights from Gooch et al. (2015) regarding a practical model for getting citizens involved in projects, particularly in digital transformation projects.

Action research refers to research that involves formulating a plan, carrying out the intended intervention, evaluating the outcomes and developing further strategies in an iterative trend (Stringer & Aragon, 2020). There are various types of action research, but the literature generally makes a distinction between two types, that is participatory action research, and practical action research (Stringer & Aragon, 2020). Compared to participatory action research which focuses on bringing about social change on some level and empowerment of individuals and groups (Holter & Schwartz-Barcott, 1993), this research followed a practical action research, which is aimed more at addressing a specific problem rather than improving the quality of lives of individuals or communities (Fraenkel et al, 2012).

According to Holter & Schwartz-Barcott (1993), in a practical action research project, the researcher and practitioners as a team together identify the problem, the underlying reasons for the problem and possible interventions to resolve the problem. The problem is defined after negotiations between the researcher and practitioner and a mutual understanding of the problem and solution is reached. The research followed this approach, and researchers worked with representatives from Pemba Town Council to understand and define the problem, before developing a plan of action.

Data Collection

As presented in the previous section, the research project started with a comprehensive literature review on digital services and e-government. To try and answer the main research question on how digital tools can be used to improve service delivery for Pemba Town Council, the question was broken down into three specific questions:

- a) What are the main issues or digital challenges/inefficiencies facing Pemba Town Council regarding service provision?
- b) What challenges do community members face in accessing the various services offered by the council?
- c) What improvements can be made, and what does it take to make these improvements?

In order to have a deeper understanding of Pemba’s digital background and the possibilities of solutions that would best fit the municipality and the citizen’s needs, researchers conducted different procedures of research. During the first two months of the project, virtual meetings with the Pemba Town Council team were held in order to further understand their needs, their current ICT infrastructure, and the political issues that could affect the implementation of the project.

Following these engagements, researchers prepared for a field trip. Two of the researchers went on a three-days working trip to Pemba from 9-11 November, 2022 with the goal of connecting with different stakeholders, understanding their local context, and to collaboratively design solutions. For this purpose, it was relevant to meet with stakeholders who represented different actors in the scenario - so both citizens and local authority representatives - and also with people from different backgrounds and access to public services, such as community members and stakeholder representatives, civic leaders, and youth (students). The researchers engaged almost 200 people, with the largest group consisting of students. For the meetings with the community and civil society representatives, researchers used focus groups, whereas for meetings with public servants, individual key informant interviews were conducted. These are further described below.

Data collection methods

Four focus group discussions were conducted. These drew an audience from community leaders and representatives, college students (from Kasiya College in Pemba) and their educators, and civic leaders such as ward development committee leaders (WDC) and zone leaders, as well as members of the Community Development Fund Committee (CDFC)¹. The selection of participants for the interviews and for the focus group discussions was purposive. Due to the objectives of the research and also owing to time and space constraints, interactions were held exclusively with deliberately selected members of the Pemba community.

The criteria for selecting participants were developed by the researchers and the council authorities based on the literature review and the objectives of the project.

Inclusion and representativity were key values when selecting the participants. The council authorities invited community leaders and citizen representatives of different interest groups to represent their constituencies in the digitalisation discussions. In that sense, the communication efforts to engage the population were made by the council authorities. Table 3.1 below summarises the sessions, number of participants and participant descriptions.

It is evident from the table that students made up the largest share of focus group participants. This was partly because researchers visited the college, unlike in the case of other participants who had to come to the conference facility hired for the research exercise. Some of the students were not residents of Pemba, but since they were enrolled at the institution in Pemba and are users of the town's public services, they were equally considered part of the focus group.

Table 1: Focus group participants constitution and description

Session	No. of participants	Description of participants
Day 1: Morning	25	<ul style="list-style-type: none"> - Representatives from non-governmental organisations, representatives of special needs groups, teachers, youth, business community, and ordinary community members. - Mix in terms of education levels and skills. - Mix in terms of rural/urban residency, i.e in relation to their residential proximity to Pemba Town Centre.
Day 1: Afternoon	80 ²	<ul style="list-style-type: none"> - At least 70 students and 8 staff members from Kasiya College. - Staff members are educated and possess some qualifications. - Students have some level of education. - Participants were divided into 8 groups of at most 10 participants.
Day 2: Morning	10	<ul style="list-style-type: none"> - Civic leaders in the Pemba community. - Included ward development committee members and zone leaders.
Day 2: Afternoon	4	<ul style="list-style-type: none"> - Community Development Fund Committee (CDFC) members.
Total	120	<ul style="list-style-type: none"> - About 120 individuals participated in the discussions. - At least 21 of the participants do not live in the close vicinity of Pemba Town Centre.

1 The community is divided into different zones. Each zone elects its representative, and these then make up the WDC. The WDCs are the lowest level of decision-making at district level responsible for identifying key developmental issues. CDFC are appointed by the area Member of Parliament (based on established guidelines) except for two councillors who are elected from amongst the councillors to be part of the committee.

2 The exact number of participants was not captured. This figure is estimated based on the number of focus groups and the average number of participants per focus group.



Part of the student participants at Kasiya College, Pemba.

In the focus groups, individuals were asked to list the municipal services that they used, frequently or not, and discuss how these services could be improved. Among the listed services, they chose one or two that they thought could be more efficient if it were digital. After that, the third activity asked them to discuss the main problems encountered while using the service, digital solutions that could help to address the problems, as well as the risks of the digital solutions.

Three key informant semi-structured in-depth interviews were conducted, with the District Commissioner, the Council Chairperson and the Council Secretary. The District Commissioner is appointed by the President through the Public Service Commission to spearhead implementation of government policies in the district, while the Council Chairperson (equivalent of Mayor in cities) is a constitutional office elected by the people every five years. The Council Secretary is the chief executive of the council and is responsible for coordinating and supervising the discharge of all the functions of the council. It was important to get views from both the council management, and the district head regarding the digital transformation plans, challenges anticipated, and political will. For a list of questions used to guide both the focus groups and interviews, see Appendix A.

Data Analysis

Thematic analysis guided the analysis of the data, whereby insights from the analysis were clustered in relevant categories (Braun & Clarke, 2006). In addition, following Yin's planning (2015), the analysis was carried out in five stages: 1) compilation of the data set; 2) data decomposition; 3) recomposition, so that the data are more interesting for the research objectives; 4) data interpretation; 5) conclusion. The steps are not necessarily sequential, they can alternate throughout the process, and all are guided by the previously established research questions. The analysis was carried out through an inductive method, whose purpose is to allow research findings to emerge from significant, dominant or frequent themes, based on the raw data (Thomas, 2003).

Results

Knowledge about digitalisation

For FGD participants, the first question was about what the participants perceived of digitalisation and digital transformation. Findings based on this question indicated that all the participants had a good understanding of digitalisation and digital services. Participants understood digitalisation as an electronic way of working which includes the use of soft copies instead of hard/paper copies, the use of digital portals and websites, social media, digital devices such as computers and cell phones, and the use of data in service delivery. Participants' understanding of digitalisation was linked to their idea of an ideal digitalised environment and the benefits that it offers to both the citizens and the local authority. Many participants understood that with digitalisation of services, information would be accessible all the time, and that their information would be better organised and safely kept as compared to a paper-based information system. Other advantages of digitalisation that FGD participants perceived included enhanced efficiency, minimised human errors and bias thereby building citizen confidence. Students were more open minded suggesting that there is a widespread acceptance and use of social media platforms such as Facebook and WhatsApp which could also be adopted for use by the local authority.

Knowledge about services offered by the council

Participants were asked to identify the services that are offered by the council. A number of services were identified by many participants, which include land rates and plot number verification, town planning, garbage collection, issuance of trading licences, collection of levies, burial permits and disbursement of community development funds. Students, who constituted about 70 participants, indicated that they had less knowledge of the services offered by the council. However, their emphasis was on the bursaries which are administered by the council from the Community Development Fund. Of particular note was their view that there is ineffective communication and lack of information regarding bursaries and how they are applied. The college staff

complemented students by identifying other services that the council provides to citizens such as trading licences, death registrations, land allocation and public works. The list of services identified complemented the list of services that have been identified by in other FGDs. In a nutshell, all participants had at least some knowledge and understanding of the services that the council is expected to provide to the citizens.

Prioritised services for digitalisation

After being asked which services they would like to see being digitalised, most participants said they preferred that all services be digitalised, for different reasons. Some participants indicated that it was expensive to travel to the council offices to inquire about services or get something done as some people live far away from Pemba Town where the council is located. Other participants indicated that it would be convenient for them to have these services accessible on a digital portal rather than travelling to the council offices and spending the greater part of the day waiting to be served. One participant said:

“We spend a lot of time at the council, several hours waiting for one thing. I should be able to do these things at my convenience”

The CDFC members picked a few services which they said were the most sought after by the citizens. They singled out projects that are financed by the community development fund as the ones that should be prioritised to enable applicants of the Community Development Fund (CDF) to make applications and follow-ups online. Some of the services that could be digitalised for convenience and transparency include school buildings, job adverts, land applications and payments, and roads, borehole and other public infrastructure maintenance. Although there were strong arguments for the digitalisation of services like CDF applications, there were also other sections of the participants who felt that digitalising this service would marginalise the other section of the population who are not digitally literate, and those who had no devices to use.

The aspect of trust in technology was also raised as an important factor that would determine whether some people will accept and embrace digitalisation or not. A resolution was made that if this service is successfully digitalised, both the traditional and the new (digital) systems would run parallel to each other in order to cater for all sections of the population. The general consensus among the participants was that communication from the council was not effective. Currently the council uses a short messaging service (SMS) and other third-party public digital platforms like WhatsApp to communicate with stakeholders, but this is not enough. The consensus is that there is a need to digitalise council services for convenience and cost saving on the part of the citizens, and to reach a wide audience on the part of the council.

After having been probed to give more details on how they visualise some of the services to be digitalised, students and college staff members suggested that services like business licensing could be moved to online with applicants being able to pay online. For services like land title applications, citizens can track their application status online instead of visiting the council offices thereby reducing the level of congestion at the council offices. One participant had this to say:

“I should be able to make follow-ups online on how far the process is...”

For some of these services, the council could take advantage of the readiness of the citizens, for example in the area of making payments using mobile money services. For revenue collection, the council could adopt mobile payments where citizens can make use of the USSD codes. The use of USSD was also identified as advantageous for people who have low technical skills, and those who stay in areas where network connections are poor. This would cater for citizens who do not own smartphones. Business registrations can also be moved online where both the council and the citizens can make follow-ups. In terms of providing information, for example on CDF applications, participants suggested that the council could use social media, especially Facebook since a lot of people use Facebook.

Challenges

The researchers realised that the participants were well aware of the challenges that can potentially affect the process and rate of the digital transformation exercise. Even though participants indicated their optimism regarding digital transformation, they also expressed reservations based on a number of key challenges that would need to be overcome. These challenges include:

Digital divide

There are two distinct groups of people, those who have access to the technology, and those who do not have access to technology. Some citizens who do not have access to technology are likely to be left behind. To curb the undesired effects of the digital divide, participants suggested that the manual system should run alongside the digital system. Not only was the importance of access to devices reinforced, but also access to the internet, which could be a barrier for some to access the digital services.

Digital literacy

Apart from access to devices and the Internet, the issue of digital literacy was raised as another possible hindrance to the rollout of digital services. Senior citizens were identified as the ones who will most likely be disadvantaged since some of them are not only digitally literate, but can also not read and write. Because of this, there were suggestions that both systems are to run parallel to each other to cater for the digital illiterate group. Digital transformation success hinges on a number of factors, digital literacy of both the civil servants and the citizens is at the core of the success.

Infrastructure challenges

The challenge of ICT infrastructure was identified by the council authorities as one of the challenges that are affecting the rollout of the digital transformation exercise. Currently the local authority has no local area network that can facilitate resource sharing and the integration of departments. According to the District

Commissioner, a lack of proper buildings that house the council offices is also affecting other infrastructure rollout programmes. Even though the network infrastructure is poor, it is something that the council can work with for a start. There is a need to equip the council with proper ICT infrastructure including servers that will store citizen data to steer operations. There were also concerns expressed about the unavailability of cell phone networks and electricity in some remote parts of Pemba which would affect the rollout and accessibility of digital services in those areas.

Human resources and technical challenges

It was indicated that currently the council has no technical people to drive the transformation. However, even without the infrastructure and the technical people, there is a high level of will from the people, the council staff and the politicians.

Solutions

The issue of digital education for digital readiness emerged several times. Sensitisation of the community regarding both the digital transformation exercise and the services that the council offers emerged as key areas that should be focused on according to the participants. Other suggestions that were made included the need for the council to get down to the zones and continue to engage the community on how best to collaborate. Also, awareness and sensitisation campaigns must be done continuously as the processes evolve and the digitalisation matures. To increase digital portal usage, suggestions were made to use local languages on the portal. In terms of ICT infrastructure, suggestions were made to engage with telecommunication operators, and other stakeholders to support the digitalisation project through the setting up of digital infrastructure like e-centres, and the provision of telecommunications networks to enable citizens to connect to the Internet without difficulties.

In a nutshell, the vulnerable members of the community were said to be at the higher risk of missing out if all services were to be solely migrated to online. It

is against this background that some participants suggested that the two systems run parallel to each other. To avert some of the challenges, participants suggested building centres that are solar powered and equipped with computers in remote areas to cater for the local communities. Although the issue of sustainability was raised as one of the challenges associated with the setting up of such centres, other participants suggested that volunteers and public servants could be capacitated to support citizens in these centres. One participant suggested that digital champions within the communities would be useful to drive the transformation exercise:

“We could have digital champions in the community, those who are a bit computer savvy to help the rest of the community”

Discussion and recommendations

The stakeholder engagements via focus group discussions and key informant meetings were very informative. The results of this research highlight the important role that citizens play in governance processes generally, and specifically in local governance. The results reiterate the position that stakeholder engagements are key in many processes of change, and digital transformation is no exception. As long as people feel part of the process, or that they own it, it is likely that they will fully support and engage.

In addition, the role of local community leaders in bringing together and working towards a common purpose cannot be overemphasised. As noted, they act as a voice between the council and the people on the ground, therefore, even in this digital transformation process, carrying them along for this task was vital for success. And since digital transformation is a process, implementing digital systems in a gradual manner alongside the traditional ways of doing things is still recommended. Issues such as low digital literacy and low digital readiness do indeed pose a challenge to digital transformation, particularly in settings such as this one (ElMassah & Mohieldin, 2020).

Further, the results confirm that digital transformation processes usually bring with them some uncertainty regarding people's evolving roles. Research around the introduction of new technologies has shown that it is not uncommon for there to be uncertainty whenever new technologies are being introduced, for instance, whether people's jobs would still be secure or these would be overtaken by the technology (Dengler & Gundert, 2021). The fear and anxiety of not being found useful during such changes is there, whether real or perceived, and it is important that these are addressed, and that the new or evolved roles of people explained for all. In this case, the sense that digital transformation would reduce the roles that community leaders played in guiding their members concerning various issues related to the council services were put to rest. Engaging stakeholders is therefore important to allay any fears that may be there.

Furthermore, the research showed that local govern-

ments work for the people, and must by all means aim to involve people in key decision making. By having the council and community members together in discussions regarding the future use of digital tools, it created an opportunity for the council to further communicate and clarify other concerns beyond digitalization, including brainstorming on how best information would be shared for it to be effective.

Impact Assessment

The impact of digital transformation interventions can be assessed in two ways, qualitatively and quantitatively (Dobrolyubova, 2021). One has to select the criteria to base the assessment on, and determine whether the metrics for measuring the criteria are qualitative or quantitative in nature. Most of the impact for this research for now is considered qualitative, as implementation is yet to be done to give quantitative metrics. Some of the data for qualitative assessment metrics such as staff satisfaction, awareness and mindset shift among others were highlighted through in-depth interviews and focus group discussions. This would however need to be evaluated later after the roll out and implementation of the digital services. The research was nonetheless impactful in more ways than one.

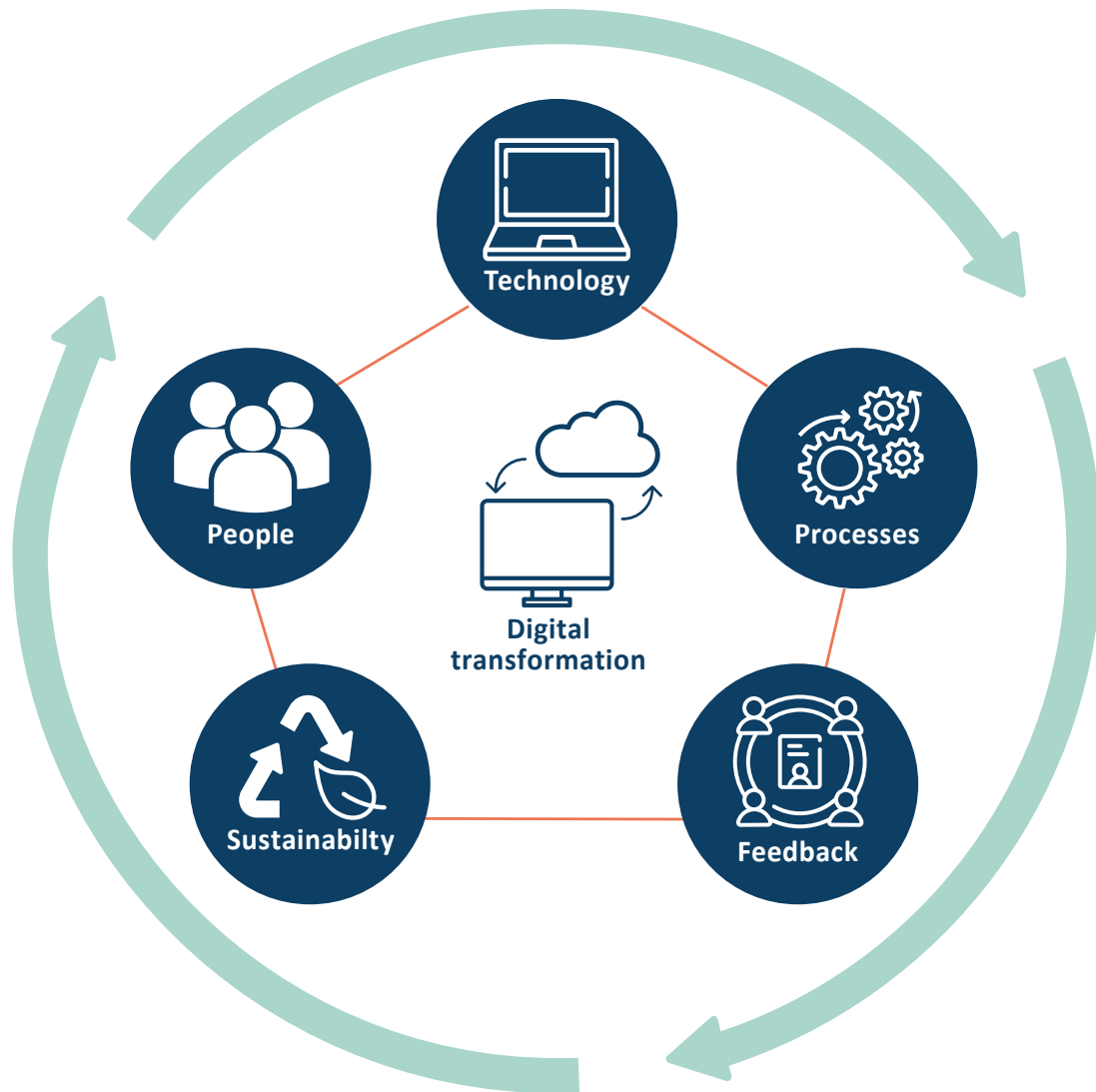
To begin with, the research helped to inform the development of a digital strategy that helps the Council contextualise the actual problem and plan on how to go about it. The importance of strategy in digital transformation is crucial but the implementation is just as important, and the digital strategy highlights this. Feller et al. (2011) note that the benefits from information technology investments are not automatically as a result of introducing new technologies, rather from coordinated efforts that align with the main strategy of the organisation, such as process improvements, staff training, and setting better organisational standards.

The digital strategy is thus based on alignment with four overriding principles namely People, Technology, Processes and Sustainability (Hartley and Sey-

mour, 2011) and adapted to suit Pemba’s unique position, and the country’s overall development goals. People refers to continued engagement with staff, citizens, local leaders, and all other stakeholders to support the transformation process; Technology includes infrastructure such software, hardware, and e-centres; Processes to ensure data and information sharing, and to receive feedback from stakeholders; Sustainability enhanced partnerships to mobilise financial resources, build capacity and develop environmentally sound technologies. In the image below, a fifth principle is added in order to reinforce

the importance of having constant monitoring and evaluation of the digital strategy and the innovations implemented.

Based on this framework, the research group developed a Digital Strategy report, containing a detailed description of the main pillars, stakeholders, challenges and possible solutions, as well as a timeline and useful resources that can be used when implementing this strategy. Below, you’ll find the timeline proposed to the municipality.



Elements of the digital strategy framework

Digital Strategy Timeline

This Strategy identifies, defines, and addresses the planned outcomes, metrics, and key activities within the period of implementation (2023-2026).

Short-Term

- Creation of data consolidation tools and conversion of existing data from hard copy to soft copy through various methods, including scanning and data entry by 31st January 2023.
- Pilot the Pemba Town Council CDF Web based portal management system by 1st January 2023.
- Procurement, installation, orientation and launch of the Palm soft financial management system by 31st January 2023.
- Establishment of local area network 1st January 2023.

Medium-Term

- Launch of the Pemba Town Council Website Integrated with the CDF Web-based portal by the 30th June 2023.
- Development and launch of Human Resource Management tool by 30th June 2023.
- Development and launch of the Land development management software by 31st December, 2023.
- Procurement and Installation of the data servers by 30th June 2023.
- Establishment of information hubs in all wards by December, 2024.
- Conduct Sensitisation and orientation meetings with newly elected Ward Development Committee's on the usage of the Constituency Development Fund Portal by December, 2024.

Long-Term

- The district having an integrated payment system, that is, USSD and online payments, which enables citizens to pay for services via the digital platform by 2026.
- Pemba Town Council's usage of paper reduced from 100% to 25% by December, 2026.

How was the Digital Strategy received?

As mentioned, the Digital Strategy was delivered to Pemba Council team in January 2023. Based on the researchers' recommendations, the council shared reflections on how they received the strategy and also committed to implementing some of the suggestions. The Council is confident that the digital strategy developed by the research team will not only be useful for planning purposes, but also to help to solicit for partnerships to enable it to actualize its digital transformation plans.

Secondly, as already alluded to, the research contributed to creating awareness and changing perceptions around digital tools in general. The fears around evolving roles of community leaders, and how people would actually go about engaging the council were addressed. Of course, this is not something to be done once, but has to be continued as the processes evolve. Pemba Council also noted that the research helped them to understand their issue better than they had before. The research thus contributed to preparing the people to better cope with changes that might otherwise have a negative impact.

Thirdly, as a result of the research, the council has decided to make use of social media as a platform to share useful information while the development of a website is yet to be finalised. This is in addition to the usual ways that it shares information. The Council Facebook page has since been reactivated and has a dedicated team to manage the content.

Fourthly, as a recommendation from the engagements, the Council has committed to, and will include in their 2023 budget the construction of 6 centres in the community which will double as e-centres and community hubs. As community hubs, they will be useful for the community leaders who currently do not have any physical offices where people can easily access them. The centres will therefore be helpful with information dissemination, and provide internet access for the community.

It is also worth noting that the period of this initial research was only three months and most of the real impact of the research will come from continued stakeholder engagement and communication by the Council throughout the digital transformation process as it rolls out various services. For instance, given that one of the problems identified that inspired the adoption of digital tools to streamline service delivery is the loss of revenue, analysing the digital transformation return on investment would give pointers to the impact of the use of digital tools. And since this quantitative data on financial management and consolidation is an indicator of the impact, this data from financial reports can only be obtained once implementation has begun.

Lessons for local government officials on the digital transformation

Local governments can have a variety of disruptive reasons for implementing digital transformation but every local government has a common goal to meet citizens' needs efficiently. Therefore, for every local government that is embarking on a digital transformation journey, an important clue or a chapter can be found in the case of Pemba's digital transformation. In addition, digital transformation is a necessity for the modern enterprise, whether public or private, due to the strength and vertiginous speed with which digitalisation has entered and has taken over our lives, which has meant that many organisations have not been able to adapt to it yet (Alvarenga et al., 2020).

It is also worth mentioning that not every local government has the opportunity to conduct research about digital transformation or to work on digital strategy with the help of researchers from different backgrounds. The research itself represents a tool for building knowledge and it can help us find new ways of understanding and solving issues.

It is recommended that this potential success story of Pemba be followed for as long as possible. It is suggested that the next cycle be around between September-November 2023, after the initial roll out of the

first digital services, in order to also get views and feedback that will be helpful for the next stages. This case can serve as a good case for other councils in similar circumstances wishing to embark on a digital transformation exercise.

Since one of the prerequisites for digital transformation is transformation of the mind, it is important that it is impressed upon the people to help them to trust the digitalisation drive. The suggestions made by participants during the discussions must be taken into consideration in order for the process to succeed.

Conclusion

From the engagement with stakeholders, the researchers realised that there are a number of factors that need to be considered for the process of digital transformation to be successful. These include participants being aware of what the process of digital transformation entails, having a good understanding of the services that the council offers, and the challenges that have to be overcome. The research showed that participants had a good grasp of what needs to be done, as well as possessed good knowledge of the services that the Council provides.

Some services appeared to be more popular and widely used, than others. While most of them expressed the desire to have almost all the services digitalised, services such as CDF applications and revenue collections generated the most interest for participants. With the increased allocation of CDF by the government, many were looking to see how the digital transformation process would make access to information easier and the application process seamless.

The research also noted that digitalisation for Pemba Town Council may be hampered by some challenges such as the digital divide, digital literacy, infrastructure challenges, lack of human resources, among others. However, these should not deter the process, rather serve to motivate the Council to find ways to work around the hindrances. Some of the solutions to help mitigate these such as a gradual transition to digital systems were suggested by participants.

In a nutshell, by digitalising most of its services, Pemba Town Council is able to improve the service that it offers to citizens to be more efficient and relevant. And the development of a digital strategy that outlines the process of doing so will help the Council to achieve this. The research demonstrated the key role that citizens play in decision making, and must be engaged in processes such as these that affect the way that they engage with the local authority. It is also important to state that support from the Council for this research was evident, and enabled the process to proceed smoothly.

Mertler and Charles (2011) state that depending on the nature of the action research project, there may never be a clear end to the study. There may be a need to continue going through subsequent cycles of planning, acting, observing and developing a new course of action which can go into the following year. The researchers think of this project in a similar manner in that while it has been completed for now, the planning, acting, reflecting etc will continue throughout the digital transformation process and Pemba Council will continue to pick lessons in each action or implementation phase, to be applied in the next.

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APPENDIX A

INTERVIEW GUIDE

Topic: Using digital tools to improve service delivery in Pemba Town Council.

Main Research Question: How can digital tools be used to improve service delivery for Pemba Town Council?

Questions for the Pemba authorities

1. Have you ever tried to implement a digital strategy, or digital activities in the municipality?
2. What are the main challenges that hold back Digital transformation?
 - a. Legacy systems and IT infrastructure
 - b. Lack of development funds
 - c. Culturally uncomfortable for organisations
 - d. Unwillingness to change / non-cooperation of colleagues if this is the case can you provide your employees with in-depth training about digital services? Or offer your employees continuous support during the transition to new tools and processes and ensure that they understand the value of these new tools and processes.
 - e. Lack of leadership (senior management / elected councillors)
 - f. Inflexible procurement processes
 - g. Lack of in-house digital skills
 - h. Increased security risks
 - i. Other (please describe)
3. What services do you think are the most urgent to be digitalised?
4. What are the risks of the digitalisation of services?
5. In your opinion, is there political support within the government to work on Digital transformation?
 - i. If yes, who are the stakeholders that can engage with this process?
 - ii. If not, who are the stakeholders that should be convinced? And can you think of strategies to convince them?
6. How can we engage citizens in the Digital transformation process?

If the interviewee doesn't answer, present some suggestions:

- Making public consultations for them to prioritise services to be digitalised;
- Making diagnose research to understand what are the services they must use and want to be digital.

Key research questions to guide Focus Group Discussions:

- What are the main issues digital challenges/inefficiencies facing Pemba Council in service provision?
- What challenges do community members face in accessing various services offered by the council?
- What improvements can be made and what does it take to make these improvements?

Questions to guide us in interviews with citizens to examine citizens' needs:

1. How often do you use municipal services offered by Pemba Council?
2. Where do you usually get information about services offered by Pemba Council?
3. Do you prefer in-person or online communication to access desired information from Pemba Council?
4. Are you interested in local politics (organising petitions or other civic participation) or some topic that affects you personally, to engage in local politics?

Questions that guided engagement with the Pemba Town Council officials:

1. Why is digital transformation important to the local authority?
 - Doing it because everyone else is doing it is not enough.
 - The local authority must have clear reasons and objectives they wish to achieve through digital transformation.
 - There is a need to think deeply about the value that the digital transformation initiative/exercise will bring to the local authority: This might be in terms of the internal processes, citizen experience etc.
 - There will be a need to work backwards to determine the outcomes of the transformation exercise/initiative.
2. How would you measure the success/impact of the initiative, justifying the investment associated?
 - Basically, what parameters/elements have been established to monitor/measure the success of the implementation of the digital initiative?
 - Indicators must be in place to determine how the process will be evaluated during implementation and beyond. The local authority must consider all this, in depth.
 - The indicators will determine and justify technology and other resources investment - ensuring that the resources are channeled where they are required.
3. How do you ensure that the key stakeholders are onboard?
 - Since the transformation project is broad, and will affect many stakeholders in different ways, it is necessary to establish how stakeholder buy-in will be solicited and that everyone shares the same understanding and the vision. It is critical to have all stakeholders, including leaders and citizens onboard.
 - The role of citizens must be clearly defined, not only during the inception, but also going forward.
4. Have you found the right people to drive the digital transformation processes?
 - Whatever needs to be done as part of the digital transformation, there is a need to have the right people in place.
 - There is a need for the authorities to think deeply about who the right people are who will drive and support the initiative from its inception going forward.
 - There is also a need to talk about the required people who will support the local authority's key performance indicators (KPIs).

5. How prepared are the local authority's employees to facilitate the change and help the local authority grow the initiative?
- With a lot of operational aspects bound to change, employees play a critical role in the implementation and success of the initiative.
 - Employees must be in a capacity to adjust to the requirements of the digital transformation. This involves upgrading their skills.
 - Questions such as “what plans does the local authority have in place to ensure that employees are ready for the transformation” must be considered.
 - This is because digital transformation will only happen in the true sense when a strategy is put in place to educate and help employees cope with the change.



THE GLOBAL GOALS

For Sustainable Development