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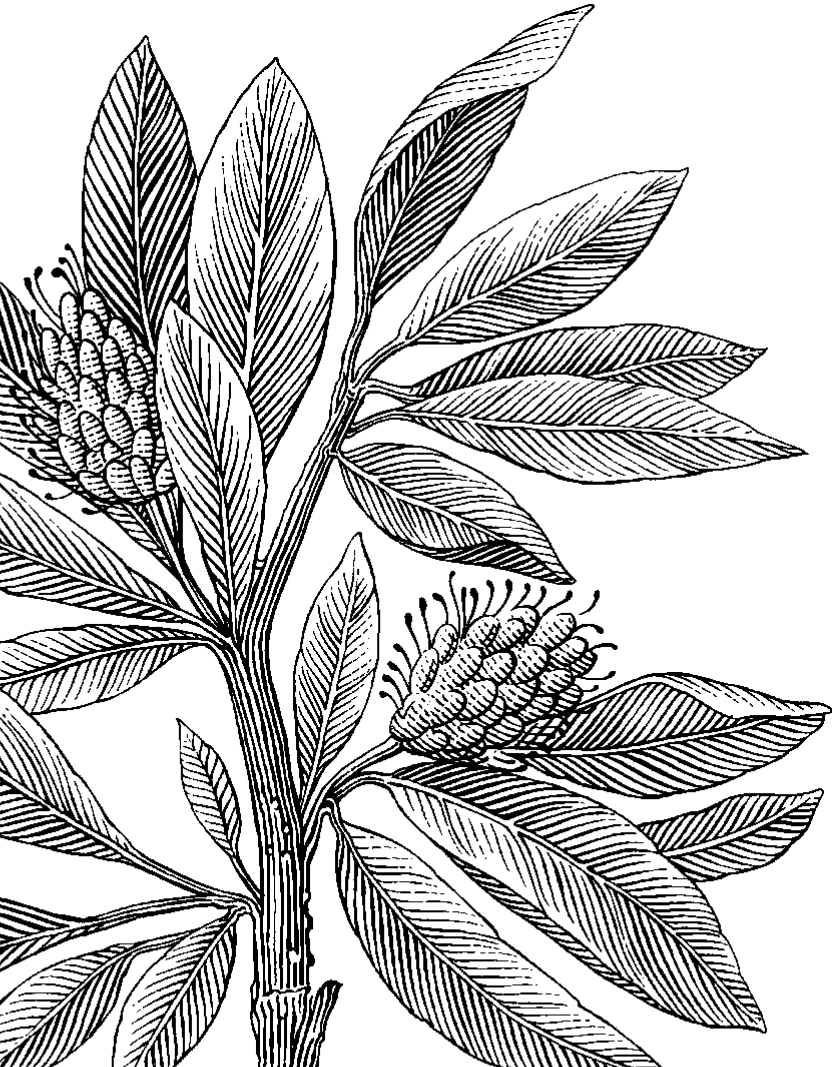
Master Thesis

Impact of Digitalization on the Public Sector Organizations' Business Model: A case study of Ljungby Municipality



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Abstract

Background: The public sector like all other sectors of the economy has been influenced by digitalization. Governments and policy makers are forced to rethink their operational models and business logics. Digitalization offers organizations new ways of creating, delivering and capturing values at the same time new relationships are ensured. However, to leverage these opportunities and to avoid being stagnant, organizations need to rethink their strategies and adapt their operations to suit the digital technologies.

Purpose: This paper aims to understand the digitalization impact on the public organizations' business models and managing the impact. The identified limited empirics in this context informed the purpose of this study.

Design/methodology/approach: This study was designed as exploratory with a case study carried out. In total four semi-structured interviews were conducted with representatives of a municipality. A combined data and concept driven strategies were used to analyse the data collected to identify how digitalization impact the way the municipality create, deliver and capture value and subsequently how they innovate their business model to adopt to digitalization

Findings: The findings revealed that digitalization is relevant to the municipality and impacts the majority of the business model components of the municipality. Thus, it was identified the municipality engaged in business model innovation to be able to adapt. The strategic agility meta-capabilities appeared to be relevant in managing the changes to the business model components.

Key words

Business Model, Business Model Innovation, Digitalization, Strategic Agility, Public Entrepreneurship, Public Sector

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1 INTRODUCTION

1.1 Background

The recent advancements in digital technologies like mobile computing artificial intelligence, cloud services, data analytics, 3D printing, and blockchain are revolutionizing how organizations create, deliver and capture values, not least in the public sector. Through the use of these digital technologies, lies the opportunity of flexibility, new product, and service development as well as challenges such as rapid customer preference changes, the pressure to attain sustainability in operations (Rachinger et al., 2019). The public sector like all the other sectors of the economy has not been immune to these waves of developments (Andersson & Mattsson, 2015; Kokkinakos et al., 2016; Larsson & Teigland, 2019). However, since the goals of each sector remain distinct, the opportunities and challenges may differ.

While the private sector organizations aim to increase profit and reduce cost, the public sector organizations even though sharing in the latter, have the ultimate aim to improve the quality and efficiency of welfare services to its citizenry (Christensen & Laegrid, 2006). The society continues to change; developments in digital technologies are shaping the attitude and outlook of the society, and it is incumbent on the public administration to make efforts to meet these new demands. There is an increased pressure on governments to

find improved ways of creating and delivering public services amidst socio-economic challenges such as growing and ageing population, population increase, and limited financial and human resources (Commission, 2013; Larsson & Teigland, 2019). A recommendation by the Organization for Economic Co-operation and Development (OECD) in 2016 outlined specific public-sector areas where new strategies are required to be abreast with the ongoing socio-economic development. Thus, the public sector organizations, through digitalization, could have the opportunities to be effective and efficient in the creation and delivery of public services to the citizens, increase collaboration with other government agencies and enhance public-private partnerships (Dilmegani et al., 2014).

However, digital technologies and business model innovation are complementary (Chesbrough, 2010). The business model concept is a strategy tool broadly applied in the private sector to define the business logic of an organization and describe how a business creates, deliver and capture values (Osterwalder & Pigneur, 2010). To be successful with changes in the environment, such as what the digitalization possesses, organizations must adapt their business models through the principle of business model innovation (Demil & Lecoq, 2010). These dynamics are valid for public sector organizations. To be successful with digitalization and be able to deliver improved services, the public sector organizations must innovate their

business models to suit the digital technologies being adopted is a necessity. Thus, the ability of public sector organizations to innovate their business models to adapt to digitalization will determine their survival (Schwab, 2017). Indeed, failure of the public sector organizations to innovate their business models to match the digital technologies may lead to inertia that could erode public and private confidence in these organizations (Schraeder et al., 2005).

"The benefits of using technology to digitize public sectors can be great. However, if municipalities are not able to radically change through successful transformation projects, they will not be able to handle challenges in the years to come and at the same time, keep the level of welfare on the same level or higher in the future" (Ruud, 2017).

Since both public management and private management encounter similar challenges such as digital technologies (Rainey,2014), the differences between the sectors are increasingly becoming blurry (Schraeder et al., 2005). Hence, the pressure for the public sector organizations to adopt private sector management principles that would allow the former to be as innovative and entrepreneurial in managing changes as the latter (Christensen et al., 2020). Innovation in the public sector contributes immensely to national growth and the welfare of the citizens (Windrum & Koch, 2008). As such, explains why governments over the past 30 years aimed to transform and modernize its

organizations on all levels, through adaptation to developments in the environments – technological, cultural, socio-economic (Bekkers et al., 2006).

These new government transformation movements emerged under the label of New Public Management (NPM). Central to the NPM phenomenon is the mimicry of private sector practices in the public sector by incorporating ideas of organizational rationality as in the private sector (Lapsley & Knutsson, 2016). Thanks to the perceived superior innovation prowess in the private sector, the NPM trend introduced the adoption of a combination of market and management theories by making the public sector more business-like contrary to the traditional public administration model (Christensen & Laegrid, 2010). In essence, many of these transformations and reorganizations in Europe and other countries were aimed to enhance the efficiency of the public services (Van Dooren et al., 2015). Furthermore, meant as a response to the perceived failings of the traditional public administration model and unforeseen changes in the external environmental factors (Dickinson, 2016).

The popularity of the NPM coincided with the period in which ICT and internet gained momentum in the population and the private sector, hence a belief in the potential of enhancing the public sector through these digital technologies (Feller et al., 2012). The digital technologies have been used by advanced governments to re-engineer public sector bureaucracies by

modernizing the sector through electronic service channels to deliver public services (Bekkers & Homburg, 2005). To be successful with the modernization agenda, governments implement digital projects to use digital technologies as a tool for strategy and at the same time, as a driver for strategy (OECD, 2016).

Incidentally, previous studies show, digitalizing the public sector can help assuage challenges in the public sector and ensure improved welfare services (Larsson & Teigland, 2019). In fact, in a policy window that gave all the stakeholders of the public sector a glimmer of hope of a new and improved government, digital technologies were identified to proffer relevant solutions towards this "new and improved government" (Bekkers & Homburg, 2005). To have a reduced cost structure and an increased efficiency of their services, several local administrations in Europe, have introduced programs to adopt the use of digital technologies (Sköldberg, 1994). For this purpose, the Swedish government have had strong policies with regards to eGovernment (European Commission, 2018) and as such is one of the leading countries to digitalizing its government organizations and its services (United Nations, 2012).

As noted earlier, the exploitation of opportunities assumed from the use of a combination of different digital technologies (Rachinger et al., 2019) can drive the public organization to modernize and improve its internal processes

(Mergel, 2018). The public sector organizations have the opportunity to redesign both their external and internal communication processes (Bekkers & Homburg, 2005), with cheap and improved methods to upgrade information reach and rich and to do things that they could not otherwise do (McGrath, 2010). Essentially, through digitalization, the longstanding goal of policymakers to establish enhanced information infrastructures and networks to reform the public sector could be realized (ibid).

On the other hand, however, digitalization has tremendously challenged decision making processes of the public sector (IBM, 2010). It has made society more transparent, and the population – citizens –demand more from the state than before (Hämäläinen et al., 2011). Furthermore, the implementation of digital technologies in the public sector has been difficult, partly due to the way it is structured, which causes hindrances in its implementation (OECD, 2016). Similarly, the rapid changes in the development of technology and subsequent changes in social trends create a gap in the existing resources and capabilities of the public sector organizations (Hämäläinen et al., 2011). Hence, indicating the need for new organizational solutions to make these public sector organizations robust, resilient and adaptive (EU, 2017).

Within this complex and changing environment, the public sector organizations continuously require to modify how they operate to new realities and concepts. Existing business and operating models of lots of organizations, including that of the public sector organizations are being disrupted by digital innovations (World Economic Forum, 2016). The public sector must make deliberate efforts to change their business models to suit the digital technologies being adopted to be successful with digitalization (Ruud, 2017). In essence, the public sector needs to innovate their business models to be able to digitalize the public service offered to the citizens successfully.

1.2 Problem Statement

The public sector is currently facing a historical adjustment challenge (Hämäläinen et al., 2011). Governments and their organisations are facing increasing expectations and greater demands from citizens about the range and quality of public services (OECD, 2016). These new anticipations on governments are influencing public sector modernisation, and therefore, requires the ability for public sector managers to adapt to these changes and developments deliberately, and to preempt the needs of citizens, companies, and other public agencies (Bekkers, 2007).

Contrary to the traditional Weberian bureaucracy of public administration model which constrains agents of the administration for the common good (EU, 2017), rapid innovation and integration of digital technologies are considered to lower costs and increased efficiency and improved quality of

public services (Ek, 2017). Hence, innovation became a dominant concept in the public sector transformation and modernisation rhetoric under the New Public Management (NPM) label (Bekkers, 2007). The emergence of the NPM private style organisation to the public sector, over the last 2 to 3 decades has brought about particular reforms to the sector (Hood, 1995). It has introduced new methods for the organisation of the public sector services. It has allowed public sector managers to be entrepreneurial and innovative (Haque, 2003) while focusing more on strategies (Christensen & Laegrid, 2010).

Nevertheless, the adoption of digital technologies in the creation and delivery of public services by the public sector organisations is a needed reaction towards the modernisation of the public sector organisations. Conversely, to explore and exploit the benefits of digital technologies, transforming critical business operations as well as structure, and the ability to change management concepts is a requirement (Matt et al., 2015). With regards to this, the public sector must consequently "reflect on their current strategy" (Arnold et al., 2016) and establish strategies to govern the multifaceted changes associated with digitalisation (Matt et al., 2015). Irrespective of the sector an organisation operates in, digitalisation challenges its existing business model, and hence management must innovate their business model to adapt to the digital technologies (Linz et al., 2017).

Meanwhile, the current business model literature with regards to digital technologies focuses almost exclusively on the private sector, with the study

of its application outside the sector also being limited (Abdelkafi et al., 2018). Business models are contextual; the level of impact varies depending on the sector, industry, organisation and (in)capability of the organisation (Teece, 2018). Previous research attempts to explore the concept in the public sector – particularly linking it to areas such as open innovation (Feller et al., 2011) and technology innovation (Micheli et al., 2015) – albeit the limited body of knowledge about the concept and its principle of business model innovation in the public sector, as compared to a large body of knowledge focused in large and technology-based firms in the private sector (Tongur & Engwall, 2014; Arnold et al., 2016; Bleicher & Stanley, 2016; Rachinger et al., 2019) as well as small and medium enterprises (Marolt et al., 2018; Arbussa et al., 2016).

Moreover, since digitalisation keeps evolving, constant improvement and development of digital technologies are imminent. The challenge for managers of the public sector and policymakers alike is to ensure proper management of the existing business models of their organisations, while at the same time ensuring a secured future through the adoption of new models and management concepts to suit the digital technologies (Tongur & Engwall, 2014). The need for simultaneous management skills would require additional resources and capabilities to manage if the public sector organisations are to survive and succeed with digitalisation. For instance, a 2015 Ramboll survey discovered that two out of three top managers in the public sector mentioned

the shortage of digital competence appears to hinder success with digitalisation. (Ramboll in Ruud, 2017).

In their paper, Hämäläinen et al. (2013) conceptualised how the public sector organisations can develop strategic agility in a constantly changing environment. The concept identifies the need for public organisations to get out of the organisational inertia and be proactive and adaptive to changes in the environment. Like many of the concepts used in the last couple of decades in public management, the strategic agility concept was initially developed in the private organisation before subsequently applying it in the public sector a unique way. The reason is that traditional private sector methodologies related to change management must be adapted for the use in the public sector (Ruud, 2017). By drawing from this concept, this current study addresses how the public sector organisations manage their business model innovation practices in the presence of digitalisation.

Recent research has studied the business model concept as a central part of business strategy (Mezger, 2014), that provides new ways by which "strategies are conceived, created and executed against" (McGrath, 2010). Also, studies on private sector firms have provided a better understanding of the impact digitalisation has on the business models of firms. Moreover, how they innovate the same to succeed with digitalisation. Previous studies in the public sector show that rather than developing their management concepts and

solutions, they have frequently adopted solutions developed by the private sector (e.g. Bozeman and Bretschneider; Dufner et al.; Cordella & Iannacci cited in Hofman & Ogonek, 2018). However, with evident differences in both sectors (Christensen & Laegrid, 2020), pick and drop might not be the best solution for the public sector. Hence, it has become imperative to understand the phenomenon in the public sector.

Besides, linking the business model concept with public sector management has not penetrated existing public entrepreneurship literature. Therefore, empirical research on the concept of business model from alternative perspectives like the public sector may reveal the linkage between public sector management and effectiveness in the public value creation and delivery. In this regard, the current study seeks to address a fundamental knowledge gap by building upon the existing business model literature in the private sector. The current research will add a new empirical context to understand the impact of digitalisation on the business model innovation practices in public sector organisations.

1.3 Research Purpose

The objective of this study is to understand the impact of digitalization on the business models of public sector organizations and how they (public sector) manage this impact by conducting a case study on a Swedish municipality.

1.4 Research Questions

- *How does digitalization impact the business model of public organizations?*
- *How does the public organizations manage the impact of digitalization on their business models?*

1.5 Chapter Outline

The remainder of the paper is structured as follows;

- *Chapter 2 – Methodology*

The methods adopted for this chapter will be critically described and justified in this chapter

- *Chapter 3 – Literature Review*

We will highlight the theories supporting this study in this chapter. Specifically, existing literature on business model, innovation and the strategic management.

- *Chapter 4 – Findings*

Collected data are presented following the concepts adopted in the studies.

- *Chapter 5 – Discussion*

This chapter contains the analysis of the empirical findings from the data collected to answer the research questions.

- *Chapter 6 – Conclusion*

This chapter will contain reflection of the study as well as theoretical and managerial implications. The research questions are subsequently answered from the analysis made.

2 METHODOLOGY

In this chapter, we discuss the research strategy and the research design that will be implemented in the study. The chosen method we will use for data collection as well as method which will be used in the analysis of the collected data.

2.1 Research Strategy

This study adopted the qualitative research strategy to provide the orientation of the study. A qualitative research design was chosen to enhance the understanding of business model in the public sector particularly with the aim at achieving a better understanding of an emerging contemporary phenomenon in its real-life setting (Bryman & Bell, 2015). Also, a qualitative strategy aims to generate comprehensive and illustrative information in order to understand the various dimensions of the problem being studied (Queiros et al., 2017), herein, the impact of digitalization on business models public sector organizations and how they (public organizations) manage these changes.

Zott et al. (2011) maintained that the business model concept has not well developed as an area of study, and the relationship between the different components are yet to be established. Also, the boundaries between the research object and its context are not apparent when studying the business model concept, and this hinders the analysis of the concept in the predefined

stages (Laudien & Daxböck, 2017). Subsequently, the fuzziness of the concept of the business model concept necessitated the choice of the qualitative research strategy.

Additionally, one of the reasons qualitative research was adopted, it helps provide a deeper understanding of complex phenomena (Bryman & Bell, 2015) such as this study where the business model of public organizations is not well-defined as in private organizations. Moreover, we argue this study has not received much attention in the literature, and the qualitative research strategy is the appropriate strategy where the objective is to study previously underexplored concepts, conditions and implications in a field of study (Yin, 2009).

The qualitative strategy is flexible enough to allow changing design and focuses during the research, which further increases the researcher's understanding of discoveries and relationships (Eisenhardt & Graebner, 2007). This flexibility made it appropriate to find the dimensions of business model in the specific public sector context and, to further develop research as well as managerial implications (Eisenhardt, 1989)

It allows for collecting rich data which would provide deep insight into relatively new and understudied research topics (Eisenhardt & Graebner,

2007). Despite the high validity of quantitative data, qualitative data will allow relevant insights into this study's objective (Bryman & Bell, 2015). Consequently, to achieve the aim of the study, data was collected and analyzed through qualitative research methods (as shown in subsequent sections below) in through interviews and relevant documents (Bryman & Bell, 2015).

2.2 Research Design

The strategy adopted by researchers in their study shapes or provides a focal point for the study. Bryman and Bell (2015) posit the research design provides the complete framework of the study, in data collection and analysis of same. The strategy will go a long way to assist the researcher(s) in answering the research questions of the study as it provides a "logical plan" or "blueprint" for the research study (Yin, 2018). It guides the researcher(s) towards achieving the aim of the study and ensures the researcher addresses the research questions.

With the scope of the research objective, the study adopted a case study design. According to Yin (2018), case studies are suitable to "explain contemporary circumstances" and mostly to answer a "how" or "why" events occur in a particular situation and when the study seeks an extensive and "in-depth" description of a phenomenon. Eisenhardt (1989) posited that this design is appropriate where new themes and patterns emerge.

Case studies can either be studied on multiple or individual cases (Bryman & Bell, 2015; Creswell, 1998). However, Yin (2018) further put these designs into subcategories - holistic and embedded. The holistic design type of case study according to Yin, is where the unit of analysis is single in a single context, whether in a single case or multiple cases (where there are multiple contexts).

On the other hand, the embedded design has multiple units of analysis in either a single context in the single case or multiple units of analysis in multiple contexts. This study will follow the holistic case design where Ljungby Kommun (public sector) is the single context. Even though data will be collected from different departments of the Kommun, e.g., "Support and Care" and "Traffic and City Planning" - they do not serve as multiple units of analysis. The embedded case design enhances the robustness of results in case studies (Herriott & Firestone, 1983). However, it is not possible in this study since there are no logical subunits of analysis (Yin, 2018) – only a single municipality exists in Ljungby – where this study was carried out.

2.3 Data Collection

- *Sampling Method*

Bryman and Bell (2015) argued that qualitative research revolves around purposive sampling. They stipulated that this sampling method has direct

reference to the questions to answer, and the question gives an indication of the unit of analysis. Unlike random sampling as in quantitative sampling, where the unit of analysis or research subject is randomly selected, purposive sampling aims at strategically selecting the research subject, the documents to study, the organization which is relevant to the study (ibid).

The research setting is a public organization which has digitalized parts or all of its activities. The sampling frame was established with the aim and the conceptual theory into consideration. Thus the organization must

- have digitalized parts or all of its business model
- have managed or implemented a new business model based on digitalization

In total, seven municipalities were identified within the Kronoberg Region that meets the above criteria. Location criterion later included despite spatial context not considered in the conceptual background, nevertheless, due to the Covid-19 pandemic which hit the world at the time of this research. The movement of personnel and people, in general, was hampered, and therefore, it was necessary to find a case organization located within reach of the researchers.

Subsequently, Ljungby Kommun was selected for this study, for it exemplifies the dimension of interest (Bryman & Bell, 2015). Again, due to the availability of resources and the given time to collect the data (Saunders et al., 2009).

After the first round of selection, the next step involved identifying relevant respondents in the organization whose role was relevant for this study. Here, another purposive sampling was involved, as by just being a member of the organization does not qualify one to be a relevant respondent. We contacted members of the organization who are working with digitalization and business model development—moreover, those who are working in top management level and have a strategic perspective on the topic. We established correspondence with the respondents through email and phone call to ascertain the respondents' availability. A piece of initial background information about the study was sent out to all who helped to ensure the respondents were able and willing to communicate about the study (Kumar et al., 1993 cited by Rachinger et al., 2019).

In the final step, the relevant respondents were identified by asking screening questions to the potential respondents. We subsequently identified the relevant respondents below;

- CEO

•Technology Manager

•Development Manager

•Business Manager

These interviewees were represented by alphabets to hide their identities (Bryman & Bell, 2015).

- *Data Collection Method*

Data triangulation (Bryman & Bell, 2015; Yin, 2018) was used in this study, where we relied on different sources of data from the case. By using the case study as a design, it allowed for the collection of data from different sources to enhance the quality of the data (Yin, 2018).

The primary data was collected through semi-structured interviews with the relevant respondents. We used semi-structured interviews, which according to Bryman & Bell (2015) is a type of interview where the researcher prepares an interview guideline relevant to the conceptual theory underpinnings but leaves room for further questions as they may arise. This is necessary as it will give us other perspectives to our research area that we may not have stipulated before. At the same time, ensure to keep us in check not to go out of the discussion to introduce irrelevant concepts (Gioia et al., 2013). Therefore, special attention was put in the development of the interview guideline to ensure the questions asked to lead to the answering of the research questions

at the end of the study while allowing modifications as we progressed through the data collection process. Thus, the questions allowed us to identify the components of the business model (Osterwalder & Pigneur, 2010) and when they evolved and how the evolution was handled using the strategic agility meta-capabilities (Hamalainen et al. 2011).

The interviews were conducted during the period from March to June 2020. Each interview was carried out in English over a phone call and lasted approximately 45-60 minutes. The pandemic necessitated the situation, hence meant limited human-to-human contact and correspondent. With the permission of the respondents, all except one interview were audio-recorded and then transcribed afterwards. With the exception, a carefully written record was taken as the interview was going on. Where one of the researchers was conducting the interview, and the other was transcribing the interview. Where there were interruptions, the interviewer requested for clarification from the interviewee to validate the answer.

The audio recorded interview data were transcribed and compared to the audio recording to ensure consistency and validity. Follow up questions were sent via email when necessary and needed, for clarification about a matter in the interview from respondents.

This study also relied on publicly available data from the case organization. Organization vision paper, press release, newsletter amongst others were carefully studied, and relevant data were included as secondary data. These data from the secondary source were translated from Swedish to English using Google Translator as there were no English versions readily available for use.

2.4 Data Analysis

A combined concept-driven and data-driven strategies of analysis was used in this study (Schreier, 2012). By using the concept-driven strategy, the analysis was done by creating provisional coding schemes which are in consideration with the concepts adopted in this study. Here, patterns that could explain the impact of digitalization on changing public sector business models - business model innovation - were looked for, and how these changes or evolution are coped with by the organization using the strategic agility meta-capabilities.

Subsequently, we used the data-driven strategy by adopting the grounded theory method. In grounded theory, which is widely inductive; analysis is done by working from the "ground up" (Yin, 2018). Here, the analysis started with identifying useful concepts through patterns at the beginning of the process. Glaser and Strauss who are the proponents of the Grounded Theory proposed this strategy helps to arrive at outcomes – concepts, category(ies), theory - (Bryman & Bell, 2015). We identified patterns that could explain the

changes in the business model of the case organization and how these changes were handled.

Moreover, the tools used in grounded theory (Bryman & Bell, 2015) helped us to avoid "getting lost in the data" (Schreier, 2012). Due to the nature of data collection, the tools ensured only relevant data were included in the analysis. The tools, as identified by Bryman and Bell, involve – coding and constant comparison through the iteration process. The iterative process of analyzing the data was carried out independently by the researchers to enhance rigidity and helped ensure consistency in our findings.

Following the methodology of Strauss and Corbin as identified in Bryman and Bell (2015), we conducted a coding process. This process uses three steps (ibid); Open, Axial and Selective coding, with the third step not used in this study as it is used to generate theories which is not the aim of this study.

In the first step, we engaged in open coding to structure and breakdown the collected data. This was done using the 3-step process of open coding (Strauss & Corbin as cited by Schreier, 2012);

- Conceptualizing; - We went through this first step by scanning through our data to identify relevant concepts. In this step, similarities and differences were identified in the concepts.
- Defining categories; - Those relevant concepts with similarities were then put together into individual categories.
- Developing categories; - In the final step, the varying categories were then put into main and subcategories which were developed from the interview guide.

Axial coding was used in the second step to connect the categories developed from the first step to contexts (Bryman & Bell, 2015). This further reduced the categories into smaller themes for ease of interpretation. The results of the analysis were presented in the Findings chapter with the categories and themes.

Finally, the two sets of categories and themes that were identified from the two strategies were synthesized. Where there was redundancy, they were merged and where there were differences, the relevant theme was used until there was no possible theme to be created (Bryman & Bell, 2015).

3 CONCEPTUAL FRAMEWORK

This chapter reviews the concepts adopted in this study. It starts with a review of the Business Model Concept; the differences and similarities of the concept and further discussed in detail the approach used in the study. It further looked at digitalization, how it impacts business models and its occurrences in the public sector. A brief discussion was made on the historical and different perspective of the public governance which led to a discussion of how changes are managed in the public sector.

3.1 Business Model Concept

The Business model concept became popular in literature at the end of the 90s, most significantly with the introduction of the Internet and the massive adoption for e-commerce (Ghaziani & Ventresca, 2005; McGrath, 2010). Organisations focused on adapting their internal structures to fit the new wave of information and communications technology and to be able to benefit from the opportunities it offered while navigating through the challenges and staying competitive in the markets in which they operate (Schiavi & Behr, 2018). The concept has ever since gained prominence in different perspectives, and thus, there are diverse definitions with commonalities.

According to Osterwalder and Pigneur (2010), the business model describes the rationale of how an organisation “creates, delivers and captures value”.

Teece (2010), also posited that the concept embodies the logic by which an organisation proposes customer value and a viable way by which revenue and cost structure to capture value. Anderson & Mattsson (2015) espoused this by describing the concept as the business logic of the firm and what value the company offers to customers. Tikkanen et al. (2005) describe it as the careful combination of components or "building blocks" to generate some form of value to customers and subsequently, the organisation. This definition was echoed by Demil & Lecoq (2010), who defined it as the articulation between different areas of an organisation's activity designed to produce a proposition of value to customers. Inconsistently, Zott et al.'s (2011) definition of the concept emphasised value creation rather than just the economic value capture. For this study, the concept is defined to mean how an organisation creates, delivers and captures value from deploying a new digital technology (Chesbrough & Rosenbloom, 2002; Osterwalder & Pigneur, 2010).

Nonetheless, the inconsistencies in the definitions are naturally based on the distinct motivations of the concept (Spieth et al., 2014). For instance, the business model concept applied to analysing and communicating strategies (McGrath, 2010; Osterwalder & Pigneur, 2010; Lambert & Davidson, 2013; Mezger, 2014), connecting technical capability with economic value (Chesbrough & Rosenbloom, 2002), and to link strategy, technology and business organisation (Osterwalder et al., 2005). It also serves as a sort of

blueprint for how organisations propose value and how revenues should be realised (Andersson & Mattsson, 2015). McGrath (2010) postulated that the concept had been suggested to offer a way of analysing organisations' superiority in an industry.

Demil and Lecoq (2010), proposed a two broad approach to describe the uses of the concept; static and transformation. The former approach -static- is concerned with the coherence between the components of the model. It describes the use of the concept as a "recipe" or blueprint, which helps in description and classification. It enables a business model to be documented and referred to when needed as the activities can be documented and described using this approach. It provides a way by which decision-makers can conceptualise organisational activities to create and capture value. The descriptive and classification features communicate different activities of the organisation at a glance and the arrangements of the components of the business model. However, it does not provide the means when the components need to be changed to adapt to a changing environment.

Contrary to the static, transformation approach focuses on changing and innovating either in the organisation or in the business model (Demil & Lecoq, 2010). This approach appears to be very useful for this study. It stressed that business models need to change over time (Doz and Kosonen, 2010), due to

the instability of the environment. Here, the business model concept is used to continuously refine to ensure adaptation to changes in the environment in order for the organisation to meet the pressures from the market and benefit from the opportunities that the rapid changes in the environment offer. This enables decision-makers to change components of or the entire business model to fit within the context of the change happening in the environment. However, this approach, according to Demil & Lecoq (2010), overlooks the interaction between the individual components of the business model as seen in the static approach.

3.1.1 Business Model Building Blocks

As mentioned in the introduction chapter, this study adopts the work of Osterwalder and Pigneur (2010) to study the business model of the public sector. They proposed nine components or "building blocks" of the business model. The nine-building blocks are thus; Value Proposition, Customer Segments, Channels, Customer Relations, Key Activities, Key Resources, Key Partners, Cost Structure and Revenue Streams. These nine building blocks cover the four pillars (Feller et al., 2011) or central areas of an organization's business; offer, customer, infrastructure and financial viability (Osterwalder & Pigneur, 2010). See Table 1

These building blocks form a framework "business model canvas" which helps visualize, describe, assess and change a business model using the proposed nine building blocks (Osterwalder & Pigneur, 2010). See Figure 1

Organization's Business Area	**Building Blocks**
Offer	Value Proposition
Customer	Customer Segments
	Channels
	Customer Relations
Infrastructure	Key Activities
	Key Resources
	Key Partnerships
Financial Viability	Cost Structure
	Revenue Streams

Table 1 (Own illustration adapted from Osterwalder & Pigneur, 2010)

- *Customer Segmentation*

This building block describes the customer segments an organization wants to offer value to (Feller et al., 2011). Osterwalder and Pigneur (2010) described customers as the "heart" of any business model. This building block allows the organization to better serve their customers by grouping them into distinct

segments with mutual needs, behaviours or other attributes (ibid). It further aids organizations to understand each customer segment and hence know which of the segments to serve and which not to. It is at this point that an organization can carefully design the business model.

- *Value Proposition*

This building block describes the overall products and services an organization offers to customers. These products and services are tailored to solve the problems of the customer and satisfy customer needs (Osterwalder & Pigneur, 2010). Here the organization creates value to a specifically selected group of customers with similar identified needs and problems. It gives an overall view of an organization's bundle of products and services (Feller et al., 2011). Osterwalder and Pigneur (2010) posited that organizations might offer products similar to what their competitors offer or be innovative, through a unique offering that would disrupt the market.

- *Channels*

The channel building block defines the various ways by which the organization can reach its selected customer segment. Through this block, the organization identifies the different means to communicate the value proposition to the customer segment (Osterwalder & Pigneur, 2010). It provides the organization with a way to design or choose the right avenues to contact the selected customer segment before, during and after the delivery of the proposed value.

- *Customer Relations*

With this block, the organization describes the type of relationship it will establish with specific customer segments (Osterwalder & Pigneur, 2010). It explains the link between the organization and its various customer segments. There are various types of customer relationship an organization may adopt for a specific customer segment. An organization may opt for a blend of several categories of relationship for a single customer segment (ibid).

- *Key Activities*

This building block explains the entire vital activities an organization would need to execute to ensure its success (Osterwalder & Pigneur, 2010). The operations required to create, deliver and capture value are described in this block. Those vital competencies that would ensure the organization offer the value proposition to the selected customer segments through the identification of the channels, maintenance of the customer relations and earnings are described here.

- *Key Resources*

The key resources block identifies the critical resources required to create and offer the value proposition (Osterwalder & Pigneur, 2010). Similar to key activities, this block outlines those resources which are critical to the successful creation of the value, reaching the intended customers, maintaining the relationship with the customers and capturing value from the proposition.

Osterwalder and Pigneur (2010) identified the resources to include physical, intellectual, human or financial.

- *Key Partnerships*

Here, the organization's cooperative agreements with other organizations to efficiently create and offer the value proposition is described (Feller et al., 2011). Also, the partnerships help the organization optimize their business model, reduce risk and uncertainty or to acquire key resources to be able to offer their value proposition to their customers (Osterwalder & Pigneur, 2010). They further identified four different types of partnerships which organization may be involved; strategic partnership with non-competitors; where the organization partner with other organizations who do not operate in the same market, "coopetition"; this involves the organization partnering with a competitor in the same market, joint ventures to develop new businesses, and buyer-supplier relations, where the organization intend to ensure secure supplies of resources (Osterwalder & Pigneur, 2010).

- *Cost Structure*

This building block brings financial incurrence in the business model. It sums up only the most critical financial expenditure that was incurred while creating and delivering the proposed value, maintenance of the customer relationship and the cost involved in earning from the value proposed (Osterwalder & Pigneur, 2010).

- *Revenue Streams*

The revenue streams building block is what describes the ways by which the organization captures values. It describes the financial earnings generated from each customer segment through the value proposed (Osterwalder & Pigeneur, 2010).

THE BUSINESS MODEL CANVAS

<table>
<tr><td rowspan="2">Key Partnerships</td><td>Key Activities</td><td rowspan="2">Value Proposition</td><td>Customer Relationships</td><td rowspan="2">Customer Segments</td></tr>
<tr><td>Key Resources</td><td>Channels</td></tr>
<tr><td colspan="2">Cost Structure</td><td colspan="3">Revenue Streams</td></tr>
</table>

Figure 1 The business model canvas (Own illustration adapted from Osterwalder & Pigneur, 2010)

3.1.2 Business Model Innovation

An essential feature of the business model is how the concept interacts with its environment – technology among other factors - and also, how it is changed or is replaced to interact with the environment (Doz & Kosonen, 2010; Arnold et al., 2016). Richter (2013) defines it as "the development of new organizational forms for the creation, delivery and capture of value". Zott et al. (2011) suggest that business model innovation can be the adoption of new activities that describe the business model of an organization. The inconsistencies in what a business model is and what it is made up of, as discussed in the previous section, have a bearing on defining the business model innovation (Bouwman et al., 2017). Even though the aim of this study is not to develop a framework of business model innovation, it is essential to look at how previous studies viewed it and how it will be approached in this study.

The approach in this study is in line with Osterwalder & Pigneur (2010), who views business model innovation as replacing outdated business models by rearranging the business model components. Other researchers have had different views. For example, Marolt et al. (2018) in their study of the small and medium enterprises perspective on business model innovation perceived four levels of business model innovation; business model new to the industry, a business model never previously implemented by competitors, a business

model which is not a dominant business model in industry and business model not invented by other enterprises. Likewise, Foss and Saebi (2016) argued that in literature, business model innovation had been studied based on two perspectives – architectural change of the business model and changes in at least one component of the business model. Whilst focusing on the value delivery function of the business model, Lindgardt et al. (2009) suggested business model innovation occurs when some components of the business model are reinvented to provide new ways of delivering values.

The business model innovation has been understood to be a strategic renewal tool for organizations faced with changes in their external environment (Sosna et al., 2010). Organizations, due to development in technology and other factors in the environment, are often faced with outmoded business models, and therefore, are required to replace those outdated business models (Osterwalder & Pigneur, 2010). Despite providing organizations with stable activities, the business model ought to be flexible enough to adapt to changes occurring in the organization's environment (Cavalcante et al. 2011).

To this extent, existing business models need to be continuously innovated or changed to a new business model (Troels & Korsgaard, 2019) to adapt and respond to critical changes in the environment and to be able to leverage on the new opportunities those changes present (Morris et al., 2005) or to avoid being out of business – thus, business model innovation. Demil & Lecoq

(2010) posited that management not only has to monitor and act on uncertainties but to ensure their business model is adapted to fit the changes. Moreover, when organizations understand their existing business models, they can identify new business opportunities and avoid challenges derived from digitalization (Bleicher & Stanley, 2016). This shapes the strategy of the organization and provides grounds for planning and guidelines to follow for the implementation of the right actions during the changing process (Bouwman et al., 2017).

According to Giesen et al. (2010), decision-makers must know when to adapt their business models and how to execute the changes. They stressed that organizations need to cautiously review their existing business models to ascertain whether to leverage new opportunities or respond to challenges posed by new digital technologies or other external factors to the existing business model. It is therefore not sufficient to only change the business model, but by continually scanning the environment to realize the need to, and the right time to innovate the business model. However, these fundamental changes are challenges already established organizations face when it comes to innovating their business model given that the decision-makers know their business model too well that it becomes difficult to change it (Arnold et al., 2016).

3.1.3 Digitalization and Business Model Innovation

Randall and Berlina (2019) defined digitalization as "the transformation of all sectors of our economy, government and society based on the large-scale adoption of existing and emerging digital technologies". This transformation that occurs due to digitalization usually disrupts and changes existing branches and operations of the organization (Matzler et al., 2013). According to Rachinger et al., digitalization changes the organization and the way it creates, delivers and captures value through an increased use of digital technologies to improve both performance and the scope of business. Technology changes or adoption of new digital technologies often lead to changes in business model (Teece, 2010; Bouwman et al., 2018). The development in digital technologies such as the internet provides organizations with the ability to offer same products and services in new and somewhat improved ways, and also with innovative ways to capture value from these products and services such as sales, advertising and 'freemium model' (Nowiński & Kozma, 2017). Instances of such changes have occurred in how the newspaper, music, movie, manufacturing industries have revolutionized over the years through the adoption of digital technologies and hence innovated business models.

Extant studies show how digitalization influence and change organizations' business model. For example, Rachinger et al. (2019) reviewed existing literature and identified three ways in which digitalization influence

organizations and their business models. They posited digitalization optimizes existing business model, transforms the existing business model and develops new business models. Teece (2010) postulated that changes in digital technology affects both the value delivery and cost aspects of the business model. The channels, customer relations and key activities the organization use in the delivery of the value created to the customer is affected by the adoption of new digital technology (Osterwalder & Pigneur, 2010). Also, this goes on to affect the cost structure and the revenue stream of the organization by increasing or decreasing the costs of operating the business model and introducing new revenue models for the organization (Matt et al., 2015).

Similarly, Baden-Fuller and Haefliger (2013) studied the relationship between technology innovation and business model innovation on four constructs; customer identification, customer engagement, value delivery and monetization. The study found that adoption of digital technology affects all the mentioned constructs by changing them, which causes organizations to innovate their business models in line with the technology. Arnold et al., (2016) also, found that digitalization influenced mainly the value proposition, customer relationships and infrastructure components of the business model components. In Bouwman et al., (2018) study of small and medium enterprises, it was shown that technology turbulence has a direct impact on the business model experimentation of the organization through innovating their

business models in an experimentation mode. Contrarily, Marolt et al., (2018) study on small and medium enterprises found a negative influence of technology on business model innovation.

The above review gives an indication of the extant literature on the influence of digitalization on business model innovation from the private sector both in large corporations and small and medium enterprises. With this study, we seek to complement the existing literature with a case study of a public sector with a focus on digitalization in a municipality and its influence on the business model innovation.

3.2 Distinctive Characteristics of Public Organizations

The organizational theory literature's attempts to blur the boundaries between different sectors of the economy has been contradicted by a long tradition of research within public administration that argues that the sector of an organization is an integral part of organizational research. (Frumkin & Galaskiewicz, 2004). Although many researchers have suggested similarities in both the public and private sector organizations, others argued there are basic differences in the way these organizations are organized (Christensen et al., 2020). The public sector organizations are 'wired' differently (Bejerot & Hasselbladh, 2013).

Public sector organizations are political in nature, in the sense that they are politically motivated (Fredriksson & Pallas, 2016) and are major political actors (Christensen et al., 2020). As Aberbach and Rockman (2000) put it, these organizations and their managers operate in a "web of politics". Their operations are dependent on the happenings in the political and governmental contexts in which they exist, thereby subject to intensive external political influences (Hofmann & Ogonek, 2018). The dependency on the political and governmental influences means, any changes in these contexts would affect the goals of the organization and how they operate. For instance, changes in political leaders may lead to changes in political appointments of leaders of the public organizations thus a stall in the implementation of plans and hinder innovation.

The political nature of public sector organizations means they are mostly set up to handle problems (Fredriksson & Pallas, 2016) instead of exploration and exploitation of opportunities. This further restrains the public managers' entrepreneurial and innovation abilities (Rainey, 2014). In contrast to this, recent studies concerning public sector posit the sector is an important user of new innovations or an innovator in its own right (Windrum & Koch, 2008; Micheli et al., 2015) as well as managers of the public organizations have exhibited entrepreneurial behaviors and managerial excellence (Windrum & Koch, 2008).

In addition, public sector organizations operate within a context of constitutional provisions, laws, and political authorities and processes (Rainey, 2014). These heavily influence how the organizations are organized and managed. With their operations enshrined in the laws, there are stipulated principles which are required to be used by these organizations for instance budgeting, performance management amongst others, and these are binding on these organizations to follow the set principles with no room for modification (Bejerot & Hasselbladh, 2013). Specifically, the operations associated to what and how to create and deliver the public services are regulated by the laws of the jurisdiction. These constraints on operations and procedures make the public organizations less autonomous in setting their own goals or scope of their activities. The public organizations are subject to legal constrictions by the legislative, executive branch hierarchies and other legal frameworks, thus a greater inclination towards formal administrative controls.

Moreover, the public sector organizations' political authorities are however established by other sections of the political system mostly elected by citizens. In exchange, these organizations create and deliver essential services and perform key functions to the citizens. These activities have a wider impact and great significance for public interest (Rainey, 2014). There is therefore a broader scope of concern and greater scrutiny of the activities of the public organizations and their managers by the general public who elected the

leaders. The democratic concern of the public organizations is not thus not limited to only selection of members for participation and representation but also, as Christensen & Laegrid (2020) put it, linked to the output side. They posited that organizational capacity of the public administration should be taken into consideration, thus how the public organization operate (Christensen & Laegrid, 2020).

Given the above demands and scrutiny, transparency becomes significant in public sector organizations (Hood & Heald, 2006). Openness and transparency are usually legal binding on the public organizations, and it ensures their activities are accountable to the relevant stakeholders especially the citizens and interest groups (Fredriksson & Pallas, 2016). This means the public organizations must give public access to specific records and other stakeholder meetings within the public organizations. Hence, this principle may lead to participation and consultation of certain stakeholders in some decision-making process of the public organizations.

3.2.1 Public Sector Organizations' Management: From Public Administration to New Public Management (NPM)

The conventional model of public administration developed out of the early years of the public sector from the late nineteenth century through the late seventies or early eighties (Osborne, 2010). The post-war era has been critical to the development of robust centralized administrations and diverse public

services across European countries (Thenint, 2010). This mode of public sector organization was based on a legislative, bureaucratic and rule-based approach to the creation and delivery of public services (Hartley, 2005). The conventional public administration was characterized by a stable, vertical top-down organizational structure, predictable and routine decision making that follows through the hierarchical authority and is based on procedural rationality and fairness (Crosby et al., 2017).

Under the "old public administration", power and authority lie with the government (Hartley, 2005) who are focused on managing political and reputational risks (Crosby, et al., 2017). The public administrators ensure this by serving the interests of the political leaders. The elected representatives have the responsibility of delivering standardized public services to the citizens who are considered as "fairly homogenous" (Hartley, 2005). Nonetheless, since societal needs are complex rather than homogenous as assumed, coupled with political and cognitive constraints, not much solutions were realized from this system (Crosby et al., 2017). The restrain in both political and cognitive resources, and the rigidity of the system towards changes highlighted the limits of the system (Thenint, 2010). Over time, academics and political elites critiqued the public administration for its weaknesses and failures, particularly in terms of inefficiencies, resistance to change, slowness, "red tape" with organizational rigidity, concern for public

service professionals instead of the citizens receiving the service (Hartley, 2005; Dickinson, 2016; Lapsley & Knutsson, 2016).

The criticisms amid the failures and weaknesses of the conventional public administration, during the early 1980s provided the impetus for many countries to shift state ideology, thereby call for change in the governance model (Thenint, 2010). The mode of reorganization and reform generated a movement in these countries either to inhibit the government authority in the public administration model, and replace it with private sector activities or to make government operations more like those of private organizations (Christensen & Laegreid, 2007). This new ideology emerged under the rubric of New Public Management (Hood, 1995).

Proponents of NPM argue that the public sector organizations should be designed, organized, managed and should function in a quasi-business manner (Diefenbach, 2009). Proponents identified a less attention given to management in the public sector organizations in the Weberian public administration (Guy Peters, 2002). The fundamental logic of NPM is that management in the public sector is not in any meaningful way different from management in the private sector (ibid). It stresses that ‘management is management’ and the public sector is as the private sector, in terms of organizing and managing (Lapsley & Knutsson, 2016). The NPM movement ascribes to the generic principle that the formal organization of the public and

the private sector should be similar in spite of their differences. This is particularly due to similarities in the environments of both the public and private sectors (Valle, 1999).

The NPM reforms promote the integration of the concepts from the private sector in the public sector (Almquist et al., 2013). Through private sector principles such as decentralization, competition, performance management, outsourcing of functions (Dickinson, 2016; Hartley, 2005), governments of the adopting countries have followed a continuing pattern of organizing, reorganizing, modernizing, and attempting to improve management and organizing in public sector organizations (Rainey, 2014). Advocates of NPM assumed that through these private sector, public services can be improved and greater efficiency will be achieved (Bekkers, 2007; Thenint, 2010). They argued that since the private sector has superior and better management and organizing principles to public sector, adopting these principles would improve management in the public sector organizations (Christensen & Laegrid, 2007).

As noted above, a predominant feature in the old public administration is hierarchical structure political leaders at the tip of the hierarchy. However, NPM as a reform wave focused on the autonomy argument, stressing structural devolution and ensured a gap between the executive politicians and the public

managers (Guy Peters, 2002). This structural reform split up organizations towards a more horizontal and vertical specialization (Osborne, 2006). Thus, this transformation brought about more autonomy in public organizations. Intriguingly, the reform focused on entrepreneurial and innovativeness of public managers. Particularly, public managers should have the flexibility and discretion to make decisions and to be able to efficiently use resources. The impact of NPM reduced the influence of politics and focused more on the administration (Christensen et al., 2020).

Despite the seemingly upgrade of this approach on the traditional public administration, it has been criticized to strictly adhere to outdated private sector principles which may sometimes not be applicable in the public sector (Osborne, 2007). The application of the NPM has not always yielded the reformed structures and outcomes as expected neither (Thenint, 2010) partly because the adopted principles were not analysed to ensure fit with the objectives of the public sector (Almquist, et al., 2013).

In literature, NPM is represented as a neo-liberal policy (Lipsky in Lapsley & Knutsson, 2016). The reforms and reorganizations in the NPM originated in Anglo-Saxon countries like UK, US, New Zealand and later adopted by other continental European countries and developing countries alike. The degree of implementation however, has not followed the same pattern everywhere. The

principles of NPM are adopted by different countries in varying degrees (Haque, 2003). For example, in the Scandinavian public administration, especially in Sweden, it demonstrates, as Lapsley and Knutsson (2016) put it "deep-seated" reform process and a careful attempt to "pigeonhole" dissemination of the reform ideas from NPM. Lapsely and Knutsson (2016) argued that, while other adopting countries go for a full-blown adoption of private principles, the Scandinavian model of reform cherry-picks principles from the public administration and principles of the NPM. This maintains NPM is not designed to be a unified and consistent set of reforms with a specific starting point through a specific path towards the same destination for all countries (Christensen & Laegrid, 2006).

3.2.2 Digitalization in the Public Sector

Rachinger et al. (2019) described digitalization as changes in the organization and the way the organization create, deliver and capture value due to the organizations increase in use of digital technologies to improve both performance and scope of business. For the purposes of this study, the definition of digitalization by Randall and Berlina was adopted, who defined it as "the transformation of all sectors of our economy, government and society based on the large-scale adoption of existing and emerging digital technologies" (Randall & Berlina, 2019). The latter definition did not limit the concept to only the private sector, as digitalization is evident in other sectors

of the economy. It also, includes adoption of both existing and emerging digital technologies, and not necessarily a novel technology.

Digitalization in the public sector provides numerous opportunities to the sector in order to be innovative (Thenint, 2010), especially when it is adopted in the fundamental processes of public administration; from the formulation and implementation of public policy processes to delivery of public services (Bekkers et al., 2006). It shows to have a significant role to improve efficiency and effectiveness of the public services (Albury; Kohli & Mulgan as cited in Micheli et al., 2012). Several measures have been taken in line with digitalization to pursue reforms – both structural and functional – in public organizations and agencies with the notion that digital technologies have the tendencies to streamline value creation and delivery (Hinnant & O'looney, 2003). Generally, the use of digital technologies is being applied to the daily operations of the organizations, and administrative processes are being progressively applied to direct service delivery and citizen engagement (OECD, 2016). Some of such measures saw government organizations and agencies deploy extensive use of Web 2.0 technologies to transform citizens engagement through the internet (Varney, 2006). Customers – citizens – can receive persistent access to information through the internet and have various channels to choose from (Linz et al., 2017) which would lead to a growing

level of satisfaction with of services, and increase the openness of trust in and engagement with governments (OECD, 2016).

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Extant literature describes this phenomenon as e-government by researchers. It involves a set of technological processes by which both the delivery of public services and the interactions between citizens and governments is changed (Torres et al., 2005). As noted by Feller et al. (2011), it is made up of four key areas as identified below. They stressed that government organizations utilize adopt modern technologies with the belief that they (government organization) will become more innovative in creating, delivering and capturing public services.

- e-administration involves the use of new technologies to improve governing processes
- e-citizens is concerned with identifying the connections with citizens to engage them in democracy and improve public services
- e-services describes the use of technology in providing online services to citizens
- e-society involves developing interactions with citizens, companies and other organizations to improve collaboration with businesses, communities, create partnerships and build the society.

Modern technologies drive new organizational models, inter and intra sectoral cooperation and knowledge exchange. The development of e-government

significantly enabled empowerment and bottom-up innovation in the public sector (Thenint 2010).

It is noteworthy however, digitalization in the public sector, in spite of its recent successes, has faced some difficulties (Micheli et al., 2012; Randall & Berlina, 2019). Micheli et al. (2012) asserted that these difficulties are not as a result of a specific technology adopted by the organization, but due to challenges of innovation diffusion (ibid). The processes in the public sector are often complex characterized by regular changes in politicking, tight budgets and inadequate human resources (Thenint, 2010; Feller et al., 2011). Also, digital technologies in the public sector are usually large and expensive, and as such difficult to manage due to lack of adequate strong skills and capabilities which makes such innovations unsuccessful (Thenint, 2010).

3.3 Managing Change in Business Model: The role of Strategic Agility

In seeking to understand how the public organizations cope with the impact of digitalization on their business model, we adopt the theory of strategic agility (Doz & Kosonen, 2010). Recent papers by Doz & Kosonen (2008; 2010) described the concept of strategic agility with its relation to changing and adapting organizations business model with respect to developments in the environment. They noted that successful business model innovation is one of the main outcomes of strategic agility. The theory initially focused in the

private sector, but was subsequently applied to the public sector (Hamalainen et al. 2011) and sought to bring awareness of it in public administration field.

The strategic agility was shown to have relevance in the public management and administration, as governments are equally facing challenges in the turbulent environments (Hamalainen et al. 2011). Continuous calls for governments to develop the ability to adapt to these changing circumstances as well as anticipate and the needs for citizens and other organizations (Bekkers, 2007). For these calls to yield positive results, governments need to adapt to their environment. The strategic agility is an appropriate perspective that explains this phenomenon, and is a necessary in turbulent environments. To successfully change their business models, organizations must establish a means to become flexible and agile enough to allow for adaptation of the changes (Lewis et al., 2014). They must develop a set of abilities that enable them to

According to Doz and Kosonen (2008), the strategic agility refers to "how to prevent stagnation and painful transformation so that companies do not become elephants that need to learn to dance." The strategic agility concept in public sector has three underlying meta-capabilities; strategic sensitivity, collective commitment and resource fluidity (Hamalainen et al. 2011). When an organization develop core competence to these set of abilities, it enables

them to quickly reconfigure its structure and routines when presented by new opportunities (Schilling, 2013).

Doz and Kosonen (2010) defined strategic sensitivity as "the sharpness of perception, and the intensity of awareness and attention to strategic developments". It requires timely recognition of emerging environmental and social trends, ensure a rich dialogue with internal and external key stakeholders, and the ability to frame strategic issues in a renewed and discerning way (Hamalainen et al. 2011). To ensure strategic sensitivity, public managers must avoid being complacent, routine processes and hierarchies (ibid). Open dialogue with internal and external stakeholders provides for divergent knowledge and resources from which the public management can tap to address changes and realize opportunities or challenges before they occur.

Secondly, the collective commitment involves system-wide coordination with a common agenda in the organization (Hamalainen et al. 2011). And by this, the organization's common challenges are focused on instead of individual units. This capability provides a shared understanding between the functional units who work towards achieving common goals and targets. Key decision makers must understand each other's view point and develop trust for cooperation and coordination to be effective (ibid).

Finally, resource fluidity is a key capability in strategic agility, as without it, the other two would not mean much (Hamalainen et al. 2011). It refers to "the internal capability to reconfigure capabilities and redeploy resources rapidly" (Doz & Kosonen, 2010). Organizations need to be able to effectively and efficiently allocate financial and human resources to be able to leverage on opportunities or mitigate challenges and change their business model when the need arise.

3.4 Summary of Conceptual Framework

This study does not fit neatly into a single literature body as it draws on theories in Entrepreneurship specifically Business Model and also, public administration as well as strategic management.

In the first section of the conceptual framework, the study identified the nuances in the concept of business model as defined by different studies. This is a necessary awareness, as it gave different perspectives to the concept and how this study sought to approach it. Subsequently, we drawn on the underpinnings of Osterwalder and Pigneur's (2010) Business Model Canvas. They identified nine building components which can be grouped into four main thematic business areas. In the following two sub-sections, we focused on how these components evolve and how they are deliberatively changed due to adoption of digitalization, thus business model innovation.

The following section covered the public governance paradigm. A little historical perspective of each of the paradigm was given as well their characteristics and what they entail. The study looked at how public governance transformed from what it was in the post-war era to what it is now in the western countries. The public administration was identified to be the more traditional system, but its downfall due to lapses in the system brought about the new public management. This new public management inculcated concepts from the private sector into the public sector. This also was outlived due to apparent impediments, and made way for the new public governance. The sub-section covered digitalization in the public sector and its impact. The different ways digitalization was used in the public sector was identified and how the public seek to make their processes efficient and effective.

Finally, drawing from strategic management theory of strategic agility, we focused on how external forces specifically digitalization affects the public sector and in what ways the sector manage such changes using the three strategic agility meta-capabilities

4 FINDINGS

In this chapter the findings from the empirical investigation is presented. The findings were presented consistent with the adopted the concepts. It started with an overview of the context being studied, thus Swedish Public Sector and narrowed in to the present the description of the case study – Ljungby Kommun. Further, the impact of digitalization was presented and subsequently how the impact is managed by the municipality.

4.1 Introduction to The Swedish Public Sector

The Swedish public sector which is the largest public administration in the Western World (Sköldberg, 1994) accounts for more than 30 per cent of the total employment and constitutes around 20 per cent of the gross domestic product (Ek, 2017). During the late eighties, the Swedish public sector like major Western countries transformed from hitherto, a centralized system of governance to a more decentralized one (Sköldberg, 1994). This transformation presented the local government with the decision-making responsibilities and to create and deliver services specific to the citizens within the locality (Feller et al., 2011; Ek, 2017). The public sector was built on the principle of Folkhemmet - The People's Home – a principle where the State provides for the welfare services to the citizens (Feller et al., 2011). Characterized by high taxes and income redistribution, the State is responsible for providing welfare services to the citizens and thus has monopolized welfare

service provision to the citizens, private entities do not necessarily participate in the provision of these services (ibid).

The municipality is one of the two tiers of the local government in Sweden and one of the largest public administration. A municipality typically consists of a town with surrounding rural area (Sköldberg, 1994). Its administration represents around 70% of all public administration in the country (Feller et al., 2011). All of the 290 Swedish municipalities have the same organizational structure (Government Offices of Sweden in Feller et al., 2011). The politicians control the municipality and in essence outline the goals and visions of the municipality. The Municipality Council is the top-level body in the organizational structure, its representatives are elected every four years in the general election. The Municipality Council has among other responsibilities, appointing members of various boards who take on various roles, as well as the Municipal Executive Board (Association of Swedish Municipalities, 2020).

In the year 2000, a new legislation sought to make Sweden "the first information society for all" (Feller et al., 2011) where the public authorities are required to have an all-day operation all year round. In order to achieve this objective, subsequent projects were introduced. For example, in 2009 the e-Government delegation was introduced by the Swedish government to boost the development of digitalized public services (Ek, 2017).

4.1.1 Ljungby Municipality

Ljungby Municipality is one of the eight municipalities in the southern Kronoberg County. It is a "Small town municipality" according to Associations for Swedish Municipalities (2016), who classified Swedish municipalities based on combination of size, the population density and the employment structure. Published on the Ljungby Municipality website, the municipality has just above 28,000 residents as at December, 2019 (Ljungby Municipality, 2020), and as interviewee A explained, the municipality is the municipality's largest employer with around 10% of the total population employed by the population in different jobs like care assistants, pre-school teachers, nurse assistants as well as administrative staff in the municipality offices.

> *"It is common in Sweden for municipalities to employ 10% of their population. But this can vary in large municipalities but that is the practice. Here in Ljungby, we have around 30,000 inhabitants and employ around 3000 who work in different roles"*

In consistence with the national agenda of public sector digitalization, the municipality has made strides and continue to make effort to achieve optimum digitalization. It has currently digitalized some of its processes and introduced new services through digitalized platforms. For example, the municipality has an e-service website where citizens can access or apply for a wide range of the municipality's services. These services include but not limited to living,

building and environment where citizens are able to apply for among other services building permits, waste and recycling, access to vacant properties for rent. Also, parents use the e-services to enrol their children in pre-school and school on this e-service page.

Moreover, to enhance its communication with its citizens, different departments and service providers of the municipality have active presence on all the major social media outlets. The municipality council broadcasts its public meetings live both on webTV and the local radio as well as access to the recorded meetings are available for example on a YouTube channel of the municipality. This ensures transparency of the business of the municipality and allows for the citizens to influence the activities of the municipality through feedback systems on the municipality's website and e-service webpage. Individual citizens through the "Citizens' initiative" on the e-service portal are able to submit initiatives that may be adopted and be part of the business of the municipality.

The municipality also utilizes mobile applications for some of its services. By using a mobile application, citizens are able to locate recycling stations, report errors within the municipality to the technical administration. Similarly, school children and parents get to see the menu of the schools on a mobile application.

4.2 Digitalization impact in the Municipality

4.2.1 Strategic Impact

All the interviewees opined that, with the adoption of digitalization, it has provided the municipality with immense opportunities to achieve their strategic goals through innovating their business model to adapt to the digital technologies. Through digitalization, the municipality is able to complement its limited resources; for example, through automation of certain activities to efficiently deliver its services to the citizens. As interviewee (A) said:

> *"due to the fact that we are not able to hire more people because of limited finances, we use digitalization to achieve efficiency in our offers"*

Another interviewee (D) said:

> *"We try to use new technology all the time. It is present 24/7. Because it is quite a small municipality with less budget to employ more personnel, we try to use more technology"*

Also, it was revealed that, through digitalization, the municipality is able to adapt to changes in its environments by developing new services or improvements on existing services. Due to rapid changes happening in the environment, pressures to achieve sustainability and adopt sustainable ways of operating, the municipality fall back on digitalization to achieve these goals.

For instance, the municipality's 2014 vision statement "*Ljungby kommun formar vi framtiden tillsammans, 35 000 invånare år 2035"* vision targeting to increase its inhabitants to 35,000 by the year 2035 through three specific target goals. These goals were developed with linkage to the 17 UN Sustainable Development Goals. To achieve some of the objectives of the goals, require digitalization of certain aspects.

> *"…the UN Sustainable Development Goals require us to be mindful of a lot of things and be strategic in social development, we are doing this through digitalizing the values we propose to our citizens"* Interview (B)

Interviewee A echoed this, by stating:

> *"The elder care has received massive digitalization, and also, school children are given laptops to enhance studies, all these are global agenda for municipalities to digitalize the welfare services"*

Relatedly, digitalization fosters new collaborations with external organizations both in the public and private sectors have been developed. By which, the municipality leverage on the strength of these organizations in the enhancement of their business logics.

As pointed out by Interviewee C:

> *"We also, collaborate with other municipalities in terms of digitalization strategy and we support each other"*

Interviewee D added:

> *"... but we only outsource for example, hardware replacement."*

Also, interviewee A noted an enhancement of interdepartmental collaborations within the municipality, through which the municipality work towards setting and achieving a common agenda.

> *"Before most of the department were focused on their own departmental goals but in past 3 years inter department communication is being done. Now we have a kommun target."*

In spite of the above, some of the representatives identified strategic difficulties in terms of digitalizing their business models and innovating their business models to leverage on the opportunities it offers. It was revealed the need for enhanced capabilities to be able to innovate the business model with regards to the digital technologies. This was captured in the interview with interviewee A who stated:

> *"The municipality needs to study more about digitalization to be able to make it efficient"*

Most importantly, as a public service, whose activities are monitored by and reported to political heads, there is the difficulty of political stagnation and inactions from the politicians which stalls timely adoption of the right digital technologies. Due to the bureaucracy involved in political decision making, a digital technology may be outdated by the time the politicians may approve its use in the municipality, hence would not be able to strategically innovate their business model in line with the current trend.

Interviewee D explains:

> *"Municipalities are headed by politicians who are usually elderly. The elderlies are usually scared of digitalization and that can be a problem to the municipality in adopting digitalization. They have to be driven to make it happen"*

4.2.2 Impact on Offer

It is clear from the data that digitalization has a huge impact on the value proposition of the municipality. This is due to an improvement in the quality of services provided to the citizens and business through digitalized platforms. The municipality leverage on the enormous opportunities available in digitalization to create value to the citizens and businesses within the municipality. Both new services and improved already running services have been enabled by digitalization. There has been transformation process in the municipality due to digitalization, and already existing services have been

improved through digitalization and are now efficient with addition of new services which seek to provide better conditions to the inhabitants in the municipality.

Interviewee C noted:

> *"citizens can now follow own processes at home or wherever they are for their building permits and track the processes anytime and anywhere without any long processes. Also, prescription can now be signed for digitally"*

Interviewee B emphasized:

> *"Same services are going online. For example: business with municipality, pick up garbage by municipality, build something, register in kommun for courses can be done in internet in application and websites rather than paper."*

In addition, digitalization complemented the staff of the municipality in creating value to the citizens. With limited personnel and high demands, the municipality tend to be innovated in creating values by adopting digitalization, thus through automation, digital analysis and other digitalized solutions to create values. The municipality think along digitalization line to be able to create values which would not demand human resources that are above what they currently have. This was noted by interviewee B by stating;

> *"A lot of people are going to retirement and need help of kommun to take care. Need to use new technology for caring the old people. Set of cameras and computers rather than people going out into woods to help old people."*

Moreover, the municipality has become customer centric in creating values. The municipality views the citizens and business that operate within their geographic location as customers and more focus is on them during improvements and creation of services. An interviewee reveals that, this has led an increased involvement with the citizens during value creation. The value proposition of the municipality is co-created together with the citizens, businesses and other relevant stakeholders of the municipality. Digitalization provides easy access to communicate with the citizens and relay the demands to the politicians in creating public values. By this, the municipality is able to democratically create values that meet the demands of the citizens and businesses, therefore avoids "dumping" values they - the municipality - think is better for the citizens. Through the municipality's social media pages, electronic suggestion box through email or on their websites, the municipality has increased its communication with the citizens. This has led to improvements in the services provided by the municipality.

> *"we listen and dialogue with our citizens more now than before. Our presence on social media and live chat on our website help us get*

feedback and that helps to know what our citizens want and together we build a better living condition" Interviewee C

Interviewee D stressed on this:

"together with the citizen we create better services by engaging them through surveys both digitally and paper. We do not want to dump just anything on the citizens, we want them to be part of everything we do. They are our customers."

4.2.3 Impact on Customer

Given that the municipality is customer centric, more attention is given to the citizen to ensure customer satisfaction and retention within the municipality. They municipality is focused on not losing its current inhabitants. And therefore, improving services would retain citizens not to move out. Citizens currently residing in the municipality are the main target and digitalization should be focused on improving the services offered to them.

Interviewee A stressed:

"...for example, our aim is to make sure we keep our customers happy, if we are bringing in new people, those living here must be happy with what we offer"

Equally, respondents mention that the municipality engages in activities to target "customers" outside their geographic area. They could attract outsiders

and tourists, and subsequently attract the establishment of new businesses through improved digitalized services. The municipality engages marketing principles to market the municipality for attraction.

Interviewee D noted:

> *"on our website, you can find all the events and attractions in the municipality to help you plan your trip and activities in the area. If we get a lot of people to visit, …"*

Interviewee B added:

> *"if we are able to attract more people to move in, we will be able to get more businesses to set up or the other way around. Where there are more businesses, more people will move in because these businesses will employ more people who would in turn become members of the municipality"*

Interviewee C explained:

> *"We are working to have by 2035, 35,000 inhabitants in our municipality, we cannot achieve this without enhancing our services and through digitalization, we can develop better and improved services"*

There was consensus amongst the interviewees on the impact of digitalization on the channel component of the business model. Here the interviewees agree that the impact is partial, that not all of the delivery channels are and can be digitalized. This is due to the nature of the services provided by the municipality. Some of the services, still require human presence and that cannot be taken away. For example, in the elder care services, elder care service personnel are required at all times to deliver these services albeit digitalization helping to make efficient these services. Similar with education and other social services.

Interviewee A claimed:

> *"even though I mentioned the elder care has been better off with digitalization, the service personnel are still required. We are not using robots to deliver elder care"*

In spite of this, the interviewees opined that digitalization is aiding in the delivery of services effectively by digitalizing parts where possible.

Interviewee B noted:

> *"In the schools, the children are given computers and have access to internet, the teachers are there to teach. These digital technologies facilitate teaching and learning in schools"*

The most impacted component in this business area has to do with the customer relationship. This is due to the importance the municipality place on this component. The interviewees identified influence of digitalization on the way citizens and businesses are contacted. Digital technologies provided enhancements in the way the municipality interact with their customers and receive feedback and assessments on the activities and services provided by the municipality.

Furthermore, new and efficient ways of communicating with the citizens and businesses have been ensured through the use of digital technologies. The municipality through its social media pages, website, corporate emails, have intensified their communication with the citizens. They also use these platforms to update the citizens and businesses of new services they intend to roll out and new developments on existing services. The customer relationship of the municipality has been strengthened with digitalization due to improved engagement with the citizens in creating of value and its delivery. The data revealed this aspect is critical to the municipality as it aids in the development of better services to the inhabitants.

4.2.4 Impact on Infrastructure

The interviewees revealed an obvious change in the municipality's infrastructure area. This, they noted is as a result of the digital offers and efforts in enhancing their existing offer by digitalizing aspects of it. All the

components - key activities, key resources and key partnerships - in this business area have been impacted by digitalization to some extent.

The internal processes of the municipality have been impacted by digitalization as through it, the municipality has been enhanced to become efficient. Those activities of the municipality have been supplemented by the adoption of the digitalization. Citizens get information through emails instead of mails to their physical mailboxes or both. An interviewee revealed that

> *"because citizens go through their building permit requests online, the waiting period is quite short and we are able to go through all the necessary requirements as soon as we receive them on our servers and approve or advise where necessary"* Interviewee B

Besides, the data revealed an augmented collaboration between all units of the municipality and their activities towards achieving a common goal as a municipality. This improvement came as a result of heightened use of digital technologies which offers the municipality internal collaborative platform. Interviewee C mentioned;

> *"Before, most of the departments were focused on their own departmental goals but in past 3 years inter department communication is being done. Now we have a kommun (municipality) target…so now we all units are working together and all are represented to have a higher value. We call it "Forum for analysis"*

Further, the municipality identified the need for added competence in digitalization to be able to leverage more from it. Even though, the municipality has some competence to manage their digital security and data, as interviewee A noted;

> *"…we handle all digital security issues in-house. But, we need to learn more about digitalization to be efficient"*

Thus, where the municipality lacks competence, for example in the handling of technology hardware repairs and services, and payment solutions, the municipality outsource for external competence. Moreover, being a small municipality, it will be costly to handle all services and tasks in-house therefore, the municipality opted to outsource such competence externally.

All interviewees noted the effect digitalization has on their partner network as it has enabled new collaborations with, and intensified existing collaboration with other municipalities, government organizations and private sector. This partnership allows the municipality to improve on their service offering even without necessarily the need for those competencies internally. The municipality engages with other municipalities as partners rather than competitors, through knowledge sharing to leverage on digitalization. This was noted by Interviewee C;

> *"We collaborate with other municipalities in terms of digitalization strategy and we support each other for example, through the use of "e-guide". We don't consider each other as competitors."*

Interviewee D also explained about the outsourcing all their hardware and software maintenance services to a private organization.

> *"We do not outsource a lot…we only outsource for example hardware replacement."*

This is partly due to the size of the municipality and its limited resources. They do not employ in-house technicians for such purposes but rather outsource these activities to other business partners. This way, the municipality strengthens its focus on and develop its core competencies of social welfare and the most needed competences with regards to digitalization.

Relatedly, as captured by interviewees the impact of digitalization in the value creation of services by supplementing staff through automation services, data analysis amongst other digital services, the need for digital know-how is imperative for all staff members of the municipality. Due to adoption of digitalization, members of the organization who will work with these digital services are required to have the technical knowledge on the use of these services. This however has proven a little challenge to the community as some members prefer to opt for the non-digital processes. Despite being a way to

simplify the municipality's processes, there still exists gap in its adoption by the members. Interviewee respondent C noted this

> *"…also, not all the people in kommun (municipality) want to use these technologies but want to visit and work in person."*

Also, interviewee A noted to be able to leverage on digitalization, more people need to be employed with digital competence to join the municipality and help carve a niche in digital services. However, interviewee C related the reason for which this component has been impacted by digitalization to be the size of the municipality being a small one. With limited intellectual and financial resources, the municipality is not putting digitalization to its optimal usage and has to rely on the analogue processes.

> *"As a small kommun, technology is not always used..."*

Nevertheless, interviewee B pointed that it is important not to only bring in new employees but adapt the existing competence with the new requirements. Until this is done, the municipality may not be able to leverage on the digital opportunities available. This is because the social welfare sector requires human workforce in the field who otherwise are technology savvy to be able to match their expertise with the digital world.

> *"we need our employees to be up to date with technology so they can put their knowledge in welfare to better use with the technology"* Interviewee B

4.2.5 Impact on Finance

The interviewees did not identify any key impacts of digitalization on the revenues of the municipality other than provision of diverse revenue collection methods. This is because the revenue of the municipality is usually fixed on the taxes generated from the population and businesses.

> *"As a municipality, the capacity to generate new income models is quite limited"* Interviewee D

However, the data posited that, with digitalization, the municipality can improve on its proposed values which will go a long way to attract more people and businesses to move to the geographical location, thereby expanding their tax net. The municipality rather envisage using digitalization as a means to the end, that is to provide attractive services and be able to "sell" the municipality through tourism, improve living conditions amongst other services to generate to expand its revenue base.

On the other hand, however, with digitalization comes extra expenditure. Digitalization requires heavy investments to be able to succeed and take full benefits of. There is the dilemma of "make or buy" to make. The municipality in outsourcing and buying competence which they otherwise lack from

external organization, incur extra financial responsibilities. This is evident in the data when the interviewees mentioned on a number of times about budget, lack of money when mentioning about adopting digitalization, for example as interviewee C pointed out;

"...we don't have the knowledge and money to use more technology."

4.3 Strategic Agility in the Municipality

To successfully engage in business model innovation, the data showed the municipality continuously scan the environment to notice technological trends that may offer opportunities or be a hindrance to the activities of the municipality. The municipality ensures strategic awareness of happenings in the area of digitalization and its impact on their activities by partnering with researchers in the related field. In addition, the municipality benefits from the network and collaboration with other municipalities. Through a common platform like the e-guide, the municipality get to access digitalization strategies from other municipalities in the network who may experiment with same or similar technologies. With such network, the municipality is able to capitalize on the awareness of the other municipalities in the network to leverage on the business opportunities and also avoid the challenges in a particular digital technology.

The data also reveals that, strategic discussions such as digitalization are made at the national level. The municipality, in accordance to the recommendations

by the political leaders, developed policies and action plans to implement digitalization at the organizational level. For example, implementation of the strategies contained in the policy report by the e-Government Delegation on "e-gov" strategies for all municipalities. Subsequently, the municipality designed the digitalization in line with the demands of the citizens, employees and elected representatives. Examples of this were captured in the documents "*Policy för IT i Ljungby kommun, 2019"* and *"Verksamhetsplan för IT, 2014"*.

The results further revealed that, to assist on the effective and efficient management of strategic/operational activities, assets, and transactions, the Municipality is directed by established policies stipulated in law. Hence, there was emphasis on public managers wary of losing function and status in the eyes of their appointers. Therefore, public managers appointed by the politicians to the municipal board ensure political decisions are implemented and followed up. As captured by Interviewee C

> *"We have a predefined set of activities or responsibility to provide services, and we, basically, to ensure that those political decisions are executed at the municipal level. It is ultimately the politicians call the shots."*

Similarly, regarding financial resources, interviewees gave contradicting remarks. An interviewee explained that,

> *"As an organization, we usually have adequate financial budget. When there is the need for more, we go to the politicians and convince them to do it"*

This implies that, albeit their strict budget, they are able to get extra funding to ensure successful execution of their digitalization targets. The municipality make their case for when the need arises for additional funding support. Thus, releasing funds to implement the needed changes was not a hurdle for the municipality when engaging in digitalization and restructuring. In spite of this, another interviewee posited that lack of funding has hindered their efforts in digitalization and thus as an organization, the municipality could be better with their digitalization efforts to improve its value creation services.

Moreover, respondents discussed on the absence of digital competence in the organization. Majority of the interviewees emphasized on the need to have digital competence to complement the welfare competence of the municipality. The lack of competence is not apparent not only in the operational staff but also, the managers. Thus, the public managers therefore could not provide the role model function in terms of competence. This has been identified to hamper implementation of digitalization, or where digitalization is implemented to a certain extent, strategies to innovating the business model becomes a challenge.

> *"Some of the managers are themselves not IT savvy and not able to influence their subordinates to use the technologies."*

Finally, the data revealed the municipality collectively work towards digitalization and ensure its impact on the business logics of the municipality has been widely discussed and agreed upon as a unit instead of as individual units. The respondents reveal that IT responsibilities are decentralized to the IT council for example. This council is made up of only managers or representatives of the various units of the organization with no politicians represented.

> *"We have the IT Council which is made up of representatives from the different units to drive digitalization efforts and how to get the best out of it"*

The council steers forward the digitalization agenda of the municipality. It discusses all issues regarding digitalization and how it would impact each department in order to delineate any maladies, so as to ensure full conformity in innovating the business model of the municipality as a unit. This guarantees a unison wavelength for all departments and units of the organization whereby any changes to the business model of the municipality does not interrupt the activities of a particular unit. And because digitalization itself provides access to teamwork and collaborative tools, internal coordination has been intensified. The council is also responsible for managing and measuring

performance against set standards of all the units with regards to digitalization to ensure successful implementation.

5 DISCUSSION

This chapter discussed the findings from a more general perspective. The findings were integrated and connected to the literature and seek to achieve the aim of the study. The research questions of the study were answered in this chapter.

The aim of this current study is to understand the impact digitalization has on the business model of public sectors and how the impact in essence, requires the sector to innovate their business model to successfully accommodate the digital technologies to make the best of it. In all these, the study all sought to understand how the public sector in the presence of these changes, ensures successful implementation of the change. To achieve the aim of the study, a case study of Ljungby Municipality was carried out which provided insights in line with the discussed theories.

Initially, analysis of the empirical data focused on the impact digitalization has on the business model of the Municipality. It sought to answer the research question "*How does digitalization impact the business model of public sector?"*. This current study accentuated the uncertainties which governments are faced with in recent times especially with the influx of digital technologies. And therefore, policy makers are challenged to continuously assess their current business models and adjust them.

Secondly, the other part of the analysis was based on how the studied municipality in light of the impact which changes their business model, manage these changes to ensure smooth and successful change. By answering the question "*How does the public sector cope with the impact of digitalization on its business model?".*

5.1 Impact of digitalization on the public sector business model

The results in this study indicated digitalization has strategic impact on the business model of public sector organizations. The findings in Saker et al. (2018) support this; they found that public organizations could achieve strategic goals such as sustainable economic activity by relying on digital technologies. The logic of using the business model to analyse and develop strategic goals - through business model innovation to be consistent with adopted digital technologies - appeared to be a relevant phenomenon in public organizations. The findings in this study support what is prevalent in the strategic management theory (Chesbrough, 2010; Teece, 2010) which posits that firms innovate their business models for the purpose of strategic goals. Also, Osterwalder and Pigneur (2010) stipulated the concept of business model as a central part of strategy. They stated that firms use the principle of business model innovation as a tool to develop and subsequently achieve new strategic goals. This study confirms that this is also predominant in the public sector

organizations, who use digitalization to their operations and business model to achieve their strategic goals and objectives.

However, other than achievement of strategic goals, strategic challenge is an issue that is evident with impact of digitalization on the business model innovation of public organizations. The challenge of recruiting skilled and competent employees to provide the expertise needed to capitalize on digitalization in the creation of value is evident in the public organizations. Also, with usually not enough or limited budgets, the public sector organizations fall short in recruiting the employees with the right competence to manage their digitalization, which therefore, impact on their ability to innovate their business model to fit the digital technologies. This is consistent with the studies of both Thenint, (2010) and Feller et al., (2011) who identified these strings of challenges in their respective studies to be present in public organizations. Interestingly, the challenges identified in the current study resonates with the findings in Rachinger et al. (2019) whose study was carried out in private sector organizations. This further points to the fact that the external environments of organizations in both the private and public sectors are continuously becoming similar (Hofmann & Ogonek, 2018).

It was further revealed that, even when employees are trained to handle digitalization, there has been the challenge where they stressed on using old

procedures and processes instead of the digitalized. This is in line with the finding of Micheli et al. (2012) who identified, the challenge of digitalization in the public sector is not always about the type of technology being introduced in the organization, but difficulty in diffusing the technology, which subsequently affects the successful implementation of digitalization. Arnold et al. (2016) also stipulated that familiarity with existing business model makes innovating and implementing new business model a challenge in established organizations. The findings in this paper confirms the characteristics of public organization such as following standardized processes and procedures could prove to be hindrance to business model innovation with regards to adopted digital technologies.

Again, private sector principles such as competitive advantage and marketing appears to be a prevalent strategic goal for implementing digitalization, even though public organizations do not operate in a competitive market. In Pateli and Giaglis (2005) for example, the study found that private sector organizations obtain and sustain competitive advantage by frequently changing their business model with the introduction of advanced digital technology. However, since NPM philosophies allow public sector organizations to implement these private sector principles in the public sector organizations (Haque, 2003), this finding was not surprising. By continuously innovating of their services and the way in which they deliver them to the

citizens, public organizations like municipalities would be positioned well to be able to attract more inhabitants and entice businesses to establish within their geographic area. Additionally, through implementing new digital technologies, they would be able to achieve edge by discovering new and better ways of creating and delivering public services which would place them above other "competitors". This is In line with Osterwalder and Pigneur (2010) who posited in their business model framework that the logic of value creation and delivery is renewed when it is linked with digital technologies. This is an intriguing revelation as Badden-Fuller and Haefliger (2013) viewed that there is a neglect in literature about the role of business model in connecting digital technologies and competitive advantage.

The demand from citizens for improved conditions of welfare services plays an important role as the determinant for digitalization in the public sector organizations. This finding is in consistent with the study of Rachinger et al. (2019), albeit being studied in the private sector; their finding revealed the degree of digitalization in the studied firms were as a result of customer demand, and customers are the main drivers of digitalization in organization. Likewise, for public sector organizations, the core of its activities is centred around delivery of welfare services to the citizens (Thenint, 2010; Larsson & Teigland, 2019). In addition, as a public organization, when creating public services, there is the need to interact with the public and factor in public norms

and beliefs. Besides, the reforms in the public organizations under the NPM assumptions cast citizens as customers which gives them a voice as users of the value offered (Hartley, 2005).

Moreover, whiles analysing the individual components of the business model in the customer business area, this research found the impact appears to be specific and major on the customer relationship and channel components. Given that one of the central features of digitalization is enhancements on communication and networks, these two components allow the public sector organizations to communicate and deliver their offering and to subsequently receive feedback from the public. Transparency and openness are key in the operations of public organizations (Hood & Heald, 2006). These could explain why the impact of digitalization is high on the customer relationship and channel components of the business model.

No clear answer can be given on the impact of digitalization on the customer segment component of the business model on public organizations. Public organizations operate to serve the citizens in their geographical context as mandated by the law, digitalization plays little role in defining new customer segmentation for the organizations since the focus is on the citizens within their jurisdiction. Since public organizations operate with the context of laws and their operations and rules to operation are guided by stipulated principles,

the “customer” is already identified and does not need any new customer segmentation without modification to the legal instruments. However, with reforms that allow public organizations to operate more like a private organization, and ‘market’ itself (Niedomysl, 2007), digitalization could open up new customer segment to public organizations like municipalities by targeting new potential citizens, tourists and businesses from other geographic locations.

In the same vein, it was identified during analysis that a major impact was on the value proposition component of the municipality. As with the customer interface, since the public sector organizations’ activities concern better living conditions to its citizens, they focus their digitalization efforts towards enhancing those services. As in Micheli (2012), this study identified digitalization has the potential of making the public sector organization efficient in the creation and delivery of its services to the citizens. More so, improvement in the public services to the citizenry and introduction of completely new services were considered to be drivers of digitalization in the public sector organizations. The results in this study supports the findings in Matzler et al. (2013) who posited that for an organization to digitalize their business models, the initial steps taken are towards improvement of the offers to customers.

The public organizations seek to find avenues to merge their traditional key activities and resources with the digitalized capabilities, partnerships and structure to create and deliver value to the citizens. To this extent, the results revealed enhanced collaboration between the public and private sector organizations to supplement the needed competencies. This is consistent with the study in Michel et al. (2012) who demonstrated that models for public/private collaboration models may bring new thinking to public organizations implementing digital technologies. And also, the need for more partnerships to offset further competencies beyond the reach of the public organizations. As suggested in previous studies, in order to integrate resources and implement new value offerings, the number of key partners needs to be expanded (Mattsson & Andersson, 2018).

The impact of digitalization on the revenue stream of firms is prevalent in the private sector literature (Arnold et al., 2016; Mattsson & Andersson, 2018; McGrath 2010; Rachinger, et al., 2019). Yet these previous studies address different research contexts and do not explicitly focus on public sectors. The revenue model of the municipality is quite different to that found in the private firms who seek to increase profit, hence the impact is varied. More important is the expansion of the revenue streams of public organizations through collection of taxes and other legal payments when the citizens and business in the geographical location increase due to improved conditions of service

which are as a result of digitalization. In addition, digitalization offers new and improved revenue collection options through digital platforms which could increase the revenues for the organisations remarkably and ensure sustainable economic activity. This was also identified in the study of Sarker et al. (2018) where public organizations in collaboration with financial institutions collected taxes and other payments online.

Furthermore, digitalization in the public sector has been studied to be usually capital intensive (Thenint 2010). This current study supports this assertion as the study found the need for increased investments and allocation of chunk of the public organizations' budgets towards digitalization and restructuring of the organizations. This have been one of the challenges for adopting the right digital technologies for public organizations as these organizations are not profit-making ventures and hence political reluctance towards adoption of the technologies. However, digitalization would a means to reduce existing cost by digitalizing much of the services public organizations offer.

In sum, this current study contributes to the dominant perspective in digitalization and business model literature, where the former has been posited to influence the latter (DaSilva et al., 2013; Matt et al., 2015; Arnold et al., 2016; Bouwman et al., 2017; Heikkilä et al., 2018; Rachinger et al., 2019). However, the finding in this study contrast sharply to the study of Marolt et al.

(2018) whose survey on small and medium enterprises found no correlation between digital technology and business model innovation.

Furthermore, the findings in this study show the impact on the individual business model components varies; while components such as value proposition, customer relationship and channels were directly impacted, other components like customer segment and revenue streams had little or indirect impact, as such changes in these components varies. The value proposition component's direct impact by digitalization could be explained by the fact that public organizations exist primarily to create and deliver values which are crucial to citizens and therefore public managers would seek for modes of improving this component. Similarly, due to the importance of the services provided by public organizations, and the need to stay open and transparent, public organizations find the customer relationship and channels components essential to achieve these legal responsibilities.

In spite of this variation, the logic of value creation and delivery in the public organizations as whole has seen major changes due to implementation of digital technologies. Those business model components with direct impact as noted earlier, could be the motivators for adopting a new digital technology and hence become central starting points when engaging in business model innovation in the public sector organizations. To a certain extent, this finding

contradicts with the findings in Cortimiglia et al. (2016) where most companies start improving the key resources and key activities of their business model components.

Further contributions in addition to answering the research questions are confirmations to extant research in the context of public sector organizations on the impact of digitalization. The findings in this study is consistent and support the idea of Demil & Lecoq (2010) who stipulated that the business model permanently evolves. The study confirms the public sector is in an ongoing process of business model transformation, due to the impact of digitalization. This incessant transformation process also confirms that the public sector organizations' vision for the future necessitates a new business model than the incumbent one. Previous research maintains the business model innovation of firms usually is not a planned activity (Laudien & Daxböck, 2016), that is organizations evolve their business model according to demands. The results in this study also indicate that public sector organizations like their sister organizations in private sector approach business model innovation not as a systematic process but rather as a necessity prompted by inherent or anticipated changes in the external environment such as digitalization. The current findings further show digitalization impacts on public services, public organizations then implement changes to the different components of the business model and subsequently transform it. This process leads to

innovation, which is a necessary feature for reforming and modernizing the public sector.

5.2 Managing the impact of digitalization on the public sector organizations' business model

The findings on how the public sector organizations manage the impact digitalization indicated the ability to build and create the know-how required to leverage on the opportunities of digitalization as essential. This is in consistent with the findings in Arnold et al. (2016) who emphasised that the importance of organizations to develop additional competences to offer new services.

The strategic sensitivity capability as identified by Hamalainen et al. (2011) appears conspicuous in this study with regards to awareness to changes to their business models. Yet, decisions such as digitalization are usually taken by the political authorities and it is up to the political organizations to develop awareness to the impact such decisions would proffer. To do this, public organizations create partnerships with other organizations both in the public and private sectors. To this effect, it promotes knowledge sharing and management between the public organizations especially.

As suggested in some previous studies (Sarker, et al., 2018), resource allocation in the public sector is based on priority need and ensures the achieving the objectives of the politicians. The results in this study show that the public organizations although may have annual budget, they are able to have politicians release additional funding when prompted, like for the implementation of changes in the business model to adopt digitalization which is a national policy since public organizations are there to implement the objectives of the politicians. Moreover, the results in this study maintains human resource remains a menace to successful business model innovation in the public organizations. With the absence of the expertise required in human resource, digitalization itself is threatened and hence, business models could not be innovated.

Finally, the results indicate that, regardless of the differences in units and departments in the municipality studied, they work collectively on a mutual goal towards digitalization. The results further show to work as one body to ensure successful transformation of the business model, public organizations measure their performance against set objectives. This is due to having different units and department working on the same goal, and without performance management, deviation is imminent. This breeds cohesion and ensure the business model is innovated as a single model.

6 CONCLUSION

The final chapter draws conclusion on the basis of the analysis of the results. Limitations of the study was outlined and avenues for future research were discussed. Both theoretical and managerial implications of the study were also noted.

Inevitably, digitalization is changing the operations of the public sector organizations. Understanding these dynamics in the public sector, could be the first step towards finding the suitable solutions. An efficient and effective approach towards business model innovation could provide the solutions to these changes. It is therefore incumbent on public managers and decision makers alike to be understand this to be able to manage them. A general openness to innovation and management becomes increasingly significant for these public managers. Public organizations need to innovate their business model to ensure their significance in the economy.

Again, given that digitalization is useful and fundamental in the public organizations, therefore the changes it comes with is managed by the organizations through exploration and experimentation with potential solutions. These exploration and experimentation promote digitalization within the organization which provides that the current business model continuously transforms and innovated. Furthermore, the challenges and opportunities from digital technologies to the business model of the public

organizations help the organizations to understand how to leverage on digitalization and subsequently transform the business model to achieve the benefits inherent in digitalizing. The main aim of public organizations for digitalization are to improve on the welfare services for the citizenry and to ensure openness and transparency due to the scrutiny of the populace. Whiles aiming to reform the public sector, digitalization appears to be a relevant tool.

The findings in this paper provides understanding the concept of business model in a context with limited literature. The findings revealed digitalization impact on the way public organizations create and deliver essential services to the citizens. The impact varies on the different components, which is due to those components that are deemed important to the logic of value creation and delivery in the public organizations. Drawing from similar studies in the private sector, this study shows a nonconformity to business model components that are impacted in the private sector organizations. Public organizations are gradually showing strong similarities to their sister organizations in the private sector due to similarities in the external environment, yet inherent differences in the way they are affected cannot be overlooked. This further informs that even though management remains management, attention to details in adopting solutions from the private sector to the public sector cannot be overemphasized.

6.1 Theoretical/ Managerial Implications

The current study gives insight to further the empirical and theoretical views of the business model concept alongside digitalization and strategic agility. Inherent to these contributions, the current study has multiple implications. The analysis and application of the business model concept to these transformative public sector organizations is viewed as both appropriate and timely to academics and practitioners, particularly public managers and consultants, seeking for new and improved approaches to organizational learning that supports strategic decision making.

For the theoretical contribution, the study offers further understanding of the concept of business model in a context which lacks theoretical underpinnings due to insufficient empirical studies. The field of Public Entrepreneurship is gaining awareness amongst researchers and thus, this study will contribute to the ongoing discussions. The business model concept being a broad field of study with boundaries spanning in different field of study, this study's combination of the concept with the other areas - public administration, digitalization and strategic management - provides insights of further combining the concept with other fields.

For the managerial implications, this study provided insights of the impact digitalization would have on the business models of the public sector

organizations. Thus, in spite of the large investments required to implement digitalization in the sector, policy makers should be encouraged to look at the bright side of digitalization and not to hold back investment. Likewise, policy makers and managers of the public sector should endeavour to take advantage of digitalization to co-create with citizens in the value creation process. By doing this, a population with technocrats could help enhance the services of the public service. Also, to compensate for needed competence, the public sector should strengthen their partnership network with other government agencies and the private sector. Since public organizations' core competence is in the delivery of welfare services, and with digital technologies, there appears to be changing of roles of the staff the need for added competence in digital technologies, management and policy makers alike should ensure enhance multidisciplinary training for the employees.

6.2 Limitations and Future Research

These findings, represent a valuable and relevant contribution to a field of study which lacks adequate empirical studies. The contributions in this study is however, a minute part of a complex area. Business model as a field of study is rapidly changing at fast pace and seems academia is just about to catch up with the latest.

Like any research, this study has its own limitations. Firstly, this study did not explore the business model innovation process activities of the public sector organizations. Research in areas that would explore the processes of how public sector organizations experiment, explore and learn when improving their business models require further attention. For example, from the perspective of managing the business model innovation process, better understanding of how business model innovation teams within the public sector organizations operate, manage and communicate their practices, and how business model innovations are implemented would provide a better and wholistic understanding to the phenomenon outside of the traditional context of private sector.

Secondly, the methodology used in this study. A qualitative approach based on a single case study was adopted. This means this study cannot be generalized to the context, though the aim of this study is not for generalization purpose but to achieve an in-depth understanding of the phenomenon studied. Nonetheless, further studies would help confirm this study. Hence, replicating this research in other municipalities and other regions as well as countries would provide further insight to understanding the phenomena. More so, respondents in this study are only a handful when it is compared to how vast the public sector is. In this respect, more insights could be gained by including more respondents in future studies and diversifying the sample.

Furthermore, this study showed awareness of the different approaches of the business model concept, even though relied on the Business Model Canvas of Osterwalder and Pigneur (2010). Therefore, to better understand this phenomenon, this study recommends future research to draw from different frameworks of the business model concept and whether this could lead to the identification of impacts on different components.

The complexity of business model and its connections with other fields of studies, like marketing, organizational development, strategy amongst other fields, makes it possible to for future studies to base their study in the public sector context from these perspectives. Future studies may focus on how these impacts influence the performance of the public sector given that business model innovation is related to performance (Zott and Amit, 2007) given that performance management is a central feature in NPM (Christensen & Laegrid, 2006).

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