

# Policy and Legislative Enabling Environment for Implementing Digital Technologies in the Local Government Sector: a Case Study of South Africa

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## 1 ABSTRACT

The Fourth Industrial Revolution has necessitated all organizations, private and public alike, to review their systems, processes, and frameworks to enable them to be agile, efficient, effective, etc in executing their core service delivery mandates. A key component of enablers for digital transformation is policy and legislation. Focussing on the municipal sector, this paper is an attempt to provide an overview of the policies, regulations, and legislation affecting municipalities in South Africa and to analyze the extent to which these policies and legislation enable or inhibit the rollout of digital technologies. The paper is based on a desktop literature review and a review of policies and laws having a direct bearing on the operations of municipalities in South Africa. The preliminary results lead the authors to conclude that South African municipalities do not have a deficit of policy and legislative frameworks to enable them to roll out digital technologies. So, what is needed more is the administrative and political will to execute. However, the authors assert that going forward, there are areas that need further attention. These include resolving the funding modalities, and developing supportive framework/s to guide municipalities so that as they roll out digital technologies, they don't risk sustainability imperatives.

Keywords: smart city, South African municipalities, fourth industrial revolution, policies, legislation

## 2 INTRODUCTION

The local government sector in South Africa is highly regulated, and some policies guide managers on how to run the affairs of a municipality. A key component of enablers is policy and legislation. In the context of the Fourth Industrial Revolution, it is necessary to understand the extent to which the policies, regulations, and legislation affecting municipalities in South Africa enable or inhibit the rollout of digital technologies. This is the quest of this paper. A systematic review of policies and laws having a bearing on the operations of municipalities in South Africa was done to achieve this purpose.

## 3 POLICY, REGULATION, AND LEGISLATION IMPACTING THE USE OF DIGITAL TECHNOLOGIES BY MUNICIPALITIES IN SOUTH AFRICA

The following section discusses policy and legislative issues affecting the deployment of digital technologies in South African municipalities.

### 3.1 Some critical policy issues related to digital technologies and municipalities in South Africa

Here are some of the critical policy issues related to the use of digital technologies by municipalities in South Africa.

#### 3.1.1 Access to the Internet

One of the critical policy issues in South Africa as far as digital technologies are concerned is that approximately 68% of the South African population nationally, or 41 million, have internet access (Statista, 2022). Through the S.A. Connect Initiative, the South African Government has set an ambitious target of achieving 100% broadband access to everyone by 2030. In this regard, cities can play a huge role in the fulfillment of this goal (Hypertext, 2018). In addition, President Cyril Ramaphosa has pronounced a vision of a Smart City in South Africa through his 2022 State of the Nation Address (SONA). The Smart City Vision aims to build post-apartheid cities that are based on principles of urban sustainability (Mzekandaba, 2021).

#### 3.1.2 ICT connectivity

The Table below shows the percentage of people per 100,000 who have access to ICT connection in the South African cities.

Name of city	Fixed landline telephone	Mobile telephone	Internet connection
City of Cape Town	18.5%	98.2%	78.7%
Johannesburg	9.1%	99.6%	76.8%
Tshwane	8.2%	99.6%	75.2%
eThekwini	12.5%	99.2%	75.0%
Nelson Mandela Bay (NMB)	8.3%	94.7%	84.2%
Ekurhuleni	10.0%	99.3%	83.2%
Mangaung	12.4%	95.9%	70.8%
Buffalo city	6.7%	94.9%	69.4%
TOTAL/AVERAGE	10.7%	97.6%	76.6%

Table 1: Percentage of people who have access to ICT connection in RSA cities. Source: Authors (2023), based on SACN, 2021 (+own calculations).

In terms of fixed landline access, the City of Cape Town is leading at 18%, followed by eThekwini (12.5%) and Mangaung (12.4%). The lowest is Buffalo City at 6.7%. In terms of access to mobile telephones, all South African cities are above 95%. However, in terms of internet connectivity, the highest is Nelson Mandela Bay (84.2%) followed by Ekurhuleni (83.2%). The City of Cape Town follows at 78.7%, followed by Johannesburg (76.8%), Tshwane (75.2%) and eThekwini (75%). The lowest is Buffalo City at 69.4% (Mathane, 2023), based on SACN, 2021). There is scope for South African cities to increase internet access to match and/or even surpass the current access level in terms of access to mobile telephones. Cities should strive to reach no less than 95% in this regard. More importantly, access to free Wi-Fi can assist cities to reach that end, thereby reducing the digital divide, and improving socio-economic justice and the right to information.

### 3.1.3 Data costs

Another policy issue is that there is unequal coverage, prohibitive data costs, and access to data remain a key challenge leading to low internet usage by poor communities (Lorini, et al., 2019; Muridzi, et al., 2021). In addition, municipalities do not set aside adequate funds (budgets) for smart technologies (Ncamphalala & Vyas-Doorgapersad, 2022). However, some of the metropolitan municipalities in South Africa have started to fund such initiatives (Manda & Backhouse, 2019). Sometimes, citizens are not aware of the digital platforms and tools created by municipalities; so they do not optimally use them. In most cases, municipalities do not reach out to communities and empower and teach them ICT skills so that they can use them. Citizens are also afraid of risks such as fraud, cyber-crime identity, theft, fraud, etc (Muridzi, 2018). Another issue relates to cybersecurity. Currently, South Africa has the third (3rd) highest number of cybercrime victims internationally (Duvenage, et al., 2022).

### 3.1.4 Digital divide

The National Development Plan (NDP) argues for the use of ICTs to transform South Africa (Manda & Backhouse, 2018). The NDP envisions that by 2030, South African society will be more dynamically connected through information technologies and that there shall be a vibrant economy built on knowledge (NDP, 2011: 190). The NDP further postulates that the “digital divide” must be undermined. There is the National Integrated ICT Policy Green Paper, 2014. The Green Paper appreciates that ICTs, if not properly managed, can cause further societal divisions. (National Integrated ICTs Policy Green Paper, 2014). Recently, the Department of Communications and Digital Technologies (DCDT), tabled the National Digital and Future Skills Strategy. This strategy aims to define the path for building a pool of digital skills for the economy, and to position and prepare South Africans to live in an era characterized by the pervasive and rapid adoption of digital technologies (National Digital and Future Skills Strategy in South Africa, 2020). Cities can play an important role in driving the vision of this strategy to reality.

### 3.1.5 Financing free municipal data (free Wi-Fi)

As indicated, in South Africa, unequal coverage, prohibitive costs, and access to data remain some of the key challenges leading to low internet usage by poor communities (Lorini, et al., 2019; Muridzi, et al., 2021).

Ramokgopa (2018:226) found that one of the major weaknesses related to the municipal free Wi-Fi in South Africa is that there is a lack of clarity on the funding model. This can create an impression that access to the Internet is a luxury. Consequently, municipalities do not set aside adequate funds (budgets) for smart technologies, staff training, etc (Ncamphalala & Vyas-Doorgapersad, 2022). This view is also shared by Matobako (2016), who found that the city of Mangaung needs to allocate sufficient funds to cater for free Wi-Fi, related ICTs training, and bandwidth so that there will be quick and effective service to meet the information needs of communities. However, some of the metropolitan municipalities in South Africa have started to fund free Wi-Fi initiatives to address the issue of access to data, especially by poorer community members, as part of their socio-economic transformation agenda (Manda & Backhouse, 2019).

So, there is currently no credible funding framework for municipal free Wi-Fi in South Africa. Even though some of the metropolitan municipalities in South Africa have started to fund the free Wi-Fi initiatives (Manda & Backhouse, 2019), other municipalities simply cannot afford it. The issue of the funding framework/model for municipal digital programmes in South Africa should be addressed as a matter of urgency. Key role players such as the National Treasury, Salga, Cogta, the FFC, and the DBSA should be tasked to develop an inclusive and comprehensive funding model for free municipal Wi-Fi in South Africa. Intergovernmental fiscal transfers and PPP funding models should be considered as part of the options. In some cases, municipalities may need to creatively use a combination of two or more approaches, depending on their realities and prevailing contexts.

### 3.1.6 The policy environment and digitalization of public services in South Africa

The following section discusses some of the policy instruments supporting digitalization of the public service operations in South Africa.

#### Public service transformation policy

Transformation of the public service has always been on the agenda in South Africa as early as the late 90's. Pursuant to this vision of a transformed Public Service, the White Paper on the Transformation of the Public Service (WPTPS) was promulgated in 1997. At the heart of this policy document are eight transformation priorities. These priorities are premised on a conviction that a transformed public service will lead to efficient service delivery for the citizens. The principle that is emphasized in this policy document is putting people first – Batho Pele (WPTPS, 1997).

#### Developmental local government policy

The Vision of the South African local government system as articulated by the White Paper on Local Government (1998) is one where municipalities play a central role in (re)building local communities so that they are part of a prosperous South Africa. This perspective resonates and finds expression with the values echoed by the concept of developmental local government. A critical part of the notion of the vision is municipalities working collaboratively with their local communities to find solutions to problems and improve the quality of life. Another critical thrust of the vision is ensuring inclusivity – making sure that no social groups are excluded and marginalized from the development process (White Paper on Local Government, 1998). This policy expression has implications for conceptualizing smart cities in South Africa. It implies that municipalities should intentionally endeavor to ensure that socio-economic justice is one of the key pillars of their digital strategies. Only then, can their smart cities be sustainable.

#### National Integrated ICT Policy

The National Integrated ICT Green Paper appreciates that ICT if not properly managed, can cause further societal divisions. So, it was predicated on the need to heed the imperatives of the Constitution, including that of constructing a society based on social justice. It promotes the idea of reducing the gap between those who have and those who do not have, the gap between those who are connected and those who are not disconnected. It affirms the role of ICTs in building inclusive societies and ensuring social justice. The Green Paper also sees ICTs as one of the ways to serve the needs of citizens, and by implication transform society, in particular for the needs of the poorest of the poor.

#### National Integrated ICT Policy White Paper, 2016

Anchored on 14 principles as foundational pillars, the National Integrated ICT Policy is framed from a rights-based perspective. Some of the values aspired by the policy include the right to access information,

freedom of expression, the right to benefit equitably from the ICTs, the right to affordable communications, and the right to content that celebrates heritage. An important right is the right to universal access to ICTs, as well as the right to privacy and protection of personal information (National Integrated ICTs Policy Green Paper, 2014). The implications of this policy paper are clear for municipalities – their smart city interventions must promote inclusivity and cohesion. The critical pillars of the policy are digital access, transformation, and digital inclusion.

#### Municipal Corporate Governance of ICT Policy Framework

The Western Cape Department of Local Government, working in tandem with other key stakeholders developed the Municipal Corporate Governance of ICT Policy. The purpose is to institutionalize the ICT governance systems and align them with the planning agenda for municipalities (Municipal Corporate Governance of Information and Communication Technology Policy Framework, 2018). This policy framework has important implications for the municipalities. For most municipalities, ICT is not part of long-term strategy, it is seen just as an inwardly focusing support function. With the advent of the 4IR, cities need to appoint ITOs, whose role is to develop, conceptualize, and coordinate the implementation of an enterprise-wide digital strategy for a municipality. The ITO must be a suitably qualified professional, appointed at a senior executive level, reporting directly to the City/Municipal Manager.

#### National Digital and Future Skills Strategy in South Africa (2020)

Recently, South Africa, through the Department of Communications and Digital Technologies (DCDT), tabled the National Digital and Future Skills Strategy. This strategy aims to define the path for building a pool of digital skills for the economy, and to position and prepare South Africans to live in an era characterized by the pervasive and rapid adoption of digital technologies. The strategy acknowledges the 4IR. In this regard, the use of automated vehicles, cloud technologies, artificial intelligence, the Internet of Things, big data; etc. is encouraged as part of the new normal and building a digitally relevant socio-economic fabric going forward in the 21st century. This strategy has eight elements for building digital skills. It considers basic and intermediary skills, advanced skills, and industry 4.0 skills. It then talks about new skills required for the new world of work; as well as creating 4.0. (National Digital and Future Skills Strategy in South Africa, 2020). Cities can play an important role in driving the vision of this strategy to reality. It means that cities need to have a proper appreciation of the digital skills possessed by the communities they serve. Following that, cities need to develop developmental and capacity-building programmes to up-skill the communities, especially those from poor and disadvantaged backgrounds.

#### National Development Plan (NDP)

The National Planning Commission (NDC) has developed the NDP for South Africa. Many people view the NDP as an overarching plan for South Africa. Interestingly, whereas it adopts a tone that positions the use of ICTs to transform South Africa (Manda & Backhouse, 2018), some scholars believe that the NDP does not go far enough to express how this should be done. However, the NDP envisions that by 2030, South African society will be more dynamically connected through information technologies and that there shall be a vibrant economy built on knowledge (NDP, 2011: 190). The NDP further postulates that the “digital divide” must be undermined. The implications of the NDP for municipalities is that they can be part of this vision of building “connected” communities that are inclusive and economically vibrant. Interventions such as free Wi-Fi can go a long way toward localizing the realization of this vision.

### 3.2 The legislative environment and digitalization of the public services in South Africa

From a legislative point of view, Mathane (2022) suggests that several laws support digitalization in the public service in the South African context.

#### 3.2.1 The Constitution

The Constitution, being the supreme law in the Republic of South Africa, defines the rights and duties of the citizens. It also commits South Africa to become a society based on social justice. When it comes to municipalities, the Constitution (specifically Chapter) 7 of the Constitution gives each municipality the right to govern the local affairs of its community (RSA Constitution, 1996). Among the objectives of municipalities accorded by the Constitution is to provide basic services, promote socio-economic development, accountability, etc. In this regard, it can be argued that the Constitution provides an important

legal framework for municipalities to design their digital smart city interventions that are grounded on principles of social justice.

### 3.2.2 The Municipal Finance Management Act

The Local Government: Municipal Finance Management Act, Act 56 of 2003, specifically provides rules, regulations, and procedures for handling the finances of municipalities in South Africa. Smart city programs can be very expensive, requiring more funding. In this regard, the Local Government: Municipal Finance Management Act (MFMA) advocates for sustainable management of the public funds at the municipal level. From a fiscal perspective, any municipality in South Africa that chooses to invest in smart digital platforms and/or technologies must ensure that they are affordable and budgeted for in terms of this Act as any spending that is not budgeted for and approved by Council is irregular and unauthorized.

### 3.2.3 The Municipal Structures Act and the Municipal Systems Act

The Local Government: Municipal Structures Act, 117 of 1998, is one of the most instrumental pieces of legislation in South Africa concerning municipalities. An important provision of this Act is all municipalities should include communities in their decision-making processes (RSA, Municipal Structures Act, 1998). So, in the spirit of this Act, municipalities can take advantage of using digital tools and platforms to engage their communities. However, whenever municipalities implement digital innovations, they need to make sure that communities are not left out owing to the digital divide caused by a lack of access to data, smartphones, computers, etc. Whereas the Municipal Structures Act focuses on the powers of municipalities, the Municipal Systems Act focuses on principles and processes for governing municipalities. So, the two pieces of legislation, in a sense, complement each other. Similarly, this Act also emphasizes the principle of community participation. The Act specifically requires municipalities to ensure that there are mechanisms to allow community participation. Another important principle of this Act is the principle of integrating planning.

### 3.2.4 The Spatial Planning and Land Use Management Act

The Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA) is also one of the important pieces of legislation for municipalities to drive spatial transformation. In this regard, some of the principles promoted by this Act are inclusivity, efficiency, equity, etc. Other principles are good administration, spatial justice, efficiency, sustainability, and resilience (RSA, SPLUMA, 2013). A key implication of this Act is that any municipality in South Africa that chooses to invest in smart digital platforms and/or technologies must ensure that such investments will have the effects and outcomes of building and constructing inclusive cities, and communities. In other words, municipalities must not use digital technologies and innovations to entrench and reinforce apartheid spatial injustice in South Africa.

### 3.2.5 The Protection of Personal Information Act and the Promotion of Access to Information Act

The Protection of Personal Information Act, 2000, is also an important piece of legislation as far as digitalization and access to data and information. The object of the Protection of Personal Information Act (POPI Act) is to ensure the protection of citizens against the abuse of unfair and/or unjustified access to personal information. The Promotion of Access to Information Act, Act 2 of 2000 is also another important piece of legislation as far as digitalisation and access to data and information. This Act reinforces the right of access to information, which is constitutionally entrenched in South Africa. Before democracy in South Africa, the government was secretive, abusing its powers, and violating the informational rights of citizens. Now things have changed – the Constitution (Section 8) protects the rights of citizens. Section 32 (1) (a) provides that everyone has the right of access to information (RSA, Promotion of Access to Information Act, 2000). So, in designing, conceptualizing, and implementing smart digital tools, avenues, platforms, etc. senior municipal managers should ensure that the citizens' rights to privacy and access to personal information are not violated. As Oliveira, et al., (2020) point out, often digital innovations fail because the privacy of citizens is not protected. Muridzi (2018) admonishes African municipalities to develop security protection measures such as those in countries like Korea. South African municipalities need to invest in cybersecurity to comply with the letter and the spirit of this Act.

### 3.2.6 The Promotion of Administrative Justice Act

Equally, the Promotion of Administrative Justice Act (PAJA), Act No 3 of 2000, outlines the principles that should undergird how administrative decisions and actions are taken by all state entities in South Africa. It says that all administrative actions and decisions must be procedurally fair, reasonable, and lawful. Importantly, other principles are accountability, transparency, openness, etc. This is about just administrative action. The Act stipulates that no administrative action or decision may adversely impact the rights of community members (RSA, PAJA Act, 2000). So, this Act also has significant implications for municipalities that may choose to use digital tools, platforms, and/or interventions. It simply means, among others, that municipalities should make sure that none of the smart digital interventions may have the effect of discriminating against some communities or prejudicing them in any way, manner, or form. The decisions about digital innovations should be done transparently, and the idea should be to promote administrative, and socio-economic justice for all residents.

## 4 CONCLUSION

Indeed, the Fourth Industrial Revolution has necessitated municipalities to review their systems, processes, and frameworks to enable them to be agile, and efficient, in responding to the needs and requirements of communities. Ordinarily, with the local government sector being regulated, municipalities need to be enabled by policy and legislation to execute their functions. This paper provided an overview of the policies, regulations, and legislation affecting municipalities in South Africa and analyzed the extent to which these policies and legislation enable or inhibit the rollout of digital technologies. On the policy side, the S.A. Connect Initiative is a good initiative to ensure that by 2030, South Africa will achieve 100% broadband access to everyone. The year 2030 is not far, and currently, approximately 68% of the South African population nationally, or 41 million, have internet access. There is a need to fast-track the progress in this regard. The issue of prohibitive data costs can be addressed through the provision of free municipal Wi-Fi programmes. This can also go a long way to reduce the digital divide as well.

On the legislative side, the Constitution commits South Africa to become a society based on social justice. From the perspective of the MFMA, municipalities just need to ensure that they budget adequately for investing in smart digital platforms and/or technologies; they must ensure that they are affordable and budgeted for; and avoid irregular and unauthorized expenditures. From the perspective of the Municipal Structures Act, public participation and active involvement of communities in planning for and rolling out digital innovations is very key. From the perspective of SPLUMA, the principles of spatial justice, good administration, and efficiency, are very vital to take care of when municipalities implement digital programmes. The rights of persons (e.g. privacy rights, dignity, etc) must be respected, in terms of the Protection of Personal Information Act, as well as the Promotion of Access to Information Act,

Finally, the authors conclude that South African municipalities do not have a deficit of policy and legislative frameworks to enable them to roll out digital technologies. This is to say, that the current policy and legislative framework is adequately sufficient to allow South African municipalities to roll out digital innovations. What municipalities need is the administrative and political will to execute. However, some areas need further attention. These include resolving the funding modalities, and developing supportive framework/s to guide municipalities so that as they roll out digital technologies, they don't risk sustainability imperatives.

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