COVID-19 and E-Governance: Lessons from South Africa

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Executive summary

The COVID-19 pandemic has underscored global dependence on the Internet. In the face of travel restrictions and lockdowns, social media has emerged as a crucial factor in the maintenance of personal relationships, working environments and day-to-day activities. Governments and public health authorities have used these platforms advantageously to keep the public informed of the latest developments in the fight against the pandemic. Even in Africa, despite the existing digital divide, social media and mobile Internet networks have proven their usefulness. Digital innovation in South Africa during this time serves as a positive example to other African countries of the future of e-government on the continent.

Introduction

COVID-19 has unsettled the conventional functioning of society and the economy. The everyday activities of many businesses and institutions, especially in the education sector, have had to shift online in part or entirely. There has been considerable dependence on the Internet, social media and a myriad of virtual platforms to sustain communication and productivity. COVID-19 has exposed deep social and economic divides in many countries, as well as national healthcare systems’ different levels of preparedness and capacity. It has also shown the ability of governments to adapt to the unknown, and to respond effectively and sensibly to mounting concerns while still fulfilling everyday functions of government.

Governments have for decades been aware of the importance of a strong online presence through the conventional format of websites, while expanding this presence to include social media. Social media and smartphone penetration has enabled governments to enhance their COVID-19 responses. Social media applications on smartphones are key
mediums via which governments can share information about the pandemic with citizens. Smartphones themselves are also becoming tools for digital contact tracing.

While it has been possible to restrict and prohibit certain activities during COVID-19 lockdowns, government institutions – especially those overseeing public service delivery, public healthcare and economic activity – have been expected to fire on all cylinders. This, according to some, has led to an electronic government (e-government) revival, whereby governments have reached for ‘the most common tool in the public communication and editorial ownership armoury: social media’.1 Termed a ‘COVID-19-induced digital acceleration’, it was necessitated by the simple fact that ‘public service delivery cannot be suspended’ because of the pandemic.2

Accelerated use of digital technologies and specifically social media is not confined to any one region. Globally, there has been a significant growth in the number of active Internet and social media users since 2019. Hootsuite and We Are Social reported that Internet and social media users increased by 8.2% and 10.5% respectively from July 2019 to July 2020.3 The number of people relying on mobile phones to access the Internet stood at 4.17 billion.4 It was estimated that users accessing the Internet from mobile phones made up 91% of total global Internet users, 90% of whom did so via smartphones.5 Furthermore, 43% of people surveyed in 18 countries reported spending more time on social media during COVID-19.6 However, these figures do not paint an accurate picture, since large parts of the world, especially in Africa, are unevenly connected. Data from January 2020 showed that an estimated 3.2 billion people across the globe, and 870 million in Africa, were still unable to access the Internet.7

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5 Hootsuite and We Are Social, Digital 2020. July.
Africa is overwhelmingly associated with the ‘digital divide’, a concept that refers to ‘an emergent asymmetry in which Africa is in the margins of this “empowering technology”’. Yet the continent is no stranger to social media or the Internet. The political power of social media has been well documented in Africa, with terms like the ‘Jasmine Revolution’ or ‘Arab Spring’ evoking the popular protests in North Africa that formed part of a wider democratic uprising in the region.

The increasing relevance of social media on the continent can be linked directly to the rapidly expanding mobile phone market. Africa is home to one of the largest and fastest growing mobile phone markets in the world. According to the Global System for Mobile Communications Association (GSMA), subscribers to mobile services in sub-Saharan Africa numbers 477 million people, according to 2019 data. This figure is expected to increase to 500 million by 2021, reaching 1 billion by 2024. Importantly, smartphone penetration is also increasing, constituting half of all mobile connections in the region. The GSMA predicts that this figure will increase to 65% by 2025.

Increasing mobile phone penetration on the continent not only enables Africans to access social media but is also useful for maintaining networks of family and friends, for mobile banking, for comparing market prices, for collecting health data, for advertising and for finding jobs. Some governments have been using these technologies in innovative ways in their pandemic responses. South Africa in particular stands out. Its existing platforms of e-government, as well as new ways of relying on social media and smartphones in its pandemic response, could hold valuable lessons for future e-government strategies in the rest of Africa.

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12 GSMA, The Mobile Economy.
13 Cox et al., Social Media in Africa. 8.
Government use of social media

Government use of social media – described as ‘a group of Web 2.0 technologies that facilitate interactions between users’ – forms part of a range of e-government practices defined most simply as ‘the use of the Internet and other digital media to deliver government information and services to citizens’. E-government most commonly refers to the ability to access government websites and the services they provide. As digital technologies have been evolving, e-government platforms have gradually expanded to include social media, a ‘major trend in e-government’. Motivation for its use by governments typically includes the provision of ‘complementary information dissemination, communication, and participation channels’ that essentially bridge the divide between governments and citizens.

Governments can use social media as a tool in two ways: indirectly or directly. Drawing on ‘crowd-based efforts … on government actions’, governments rely on social media in an indirect manner when they respond positively to the pressure placed on them by citizens through social media channels. Indeed, social media can act as ‘a channel [to] diffuse opinions and create a critical mass to place issues on the agendas of decision-makers’. Governments use social media in a direct manner when they operate institutional accounts, using these to share information with citizens or by allowing for interactive communication, possibly leading to the broader inclusion of citizens in government. Furthermore, governments are also able to use data gathered from social media during health crises and other disasters.

14 Web 2.0 technologies refer to second-generation Internet tools identifiable through their enabling of ‘social networking, content generated by users, and cloud computing’, although there is some debate in technology circles about the exact definition of this concept. See William L Hosch, ‘Web 2.0’, Encyclopædia Britannica, September 7, 2017, https://www.britannica.com/topic/Web-20.
16 Song and Lee, “Citizens’ Use of Social Media”, 431.
17 Song and Lee, “Citizens’ Use of Social Media”, 433.
18 Song and Lee, “Citizens’ Use of Social Media”, 430.
20 Mickoleit, “Social Media Use by Governments”, 64.
Governments most significantly benefit from interactions with citizens via social media in the areas of trust and transparency. This happens when the technologies are used to ‘actually transform policy-making, decision-making or service delivery processes’ – a feat few governments have achieved in practice. A study of the use of social media by governments in Organisation for Economic Cooperation and Development countries notes that while social media use by governments has become more common, its use has not been particularly innovative. Government institutions largely use social media ‘in a rather traditional communications sense’, not taking full advantage of some of its benefits. Aside from enhancing government transparency and citizens’ trust, social media also allows governments to reach out to citizens across demographic divides, thereby boosting inclusion and participation.

While social media use by governments has become more common, its use has not been particularly innovative

Governments, health authorities and international bodies such as the UN and World Health Organization (WHO) are increasingly relying on these ‘traditional’ modes of using social media to distribute credible and up-to-date information on the pandemic to the general public. The availability of such information has been of vital importance in the current situation, as there had been no prior knowledge of the disease. Yet while social media has been a useful tool to distribute information, messaging has often been inconsistent. For instance, communication about wearing masks has been contradictory. In South Africa, for example, Minister of Health Zweli Mkhize advocated the wearing of masks quite early in the COVID-19 timeline, but was undermined by local authorities claiming that it was not a necessary protective measure.

Social media is useful for more than just sharing information. It can also be used as a tool in disaster and crisis management, especially in the event of a public health crisis. On 21 November 2016 hospitals in Melbourne, Australia were overwhelmed by an influx of thousands of individuals in need of treatment for ‘thunderstorm asthma’ resulting from a spike in ‘the level of pollen and a certain kind of thunderstorm’. In the aftermath of this event, the authors of a study on the use of Twitter during this event concluded that their ‘methods … could be used to detect early signals for other health events such as epidemics.

21 See, for example, Mickoleit, “Social Media Use by Governments”; Song and Lee, “Citizens’ Use of Social Media”.
22 Mickoleit, “Social Media Use by Governments”, 64.
23 Mickoleit, “Social Media Use by Governments”, 27.
24 Mickoleit, “Social Media Use by Governments”.
which have [a] longer lead time’. In addition, ‘open-source data such as social media can be automated to alert health authorities to a potential event before official notification’. Indeed, the study claims that social media can be a vital tool in the fight against disease outbreaks. This has been evident during the current pandemic and would suggest that a change is underway in terms of the role social media can play in e-governance.

Social media as e-governance tool during COVID-19

Before the relevant government branches can formulate responses to public health crises, it is necessary to gather as much data as fast as possible on a particular disease outbreak. Commonly referred to as ‘epidemic intelligence’, this data gathering relates to ‘the systematic detection of disease outbreaks from formal and informal sources’. ‘Formal sources (such as hospital records) can provide incidence counts, but informal sources (such as social media) can be used to detect these outbreaks before they are apparent in the formal sources.’

Building on the case of Australia, there are examples of social media being monitored for posts relating to COVID-19 in order to track and predict disease outbreak patterns. In the US, data research company Dataminr has turned its focus to social media in harvesting posts relating to ‘firsthand accounts of [COVID-19] symptoms’ in order to create predictive maps showing where disease outbreaks are likely to increase in severity. Dataminr research found that ‘prior flare-ups of COVID-19 were preceded by a spike in social posts in the affected areas’, making social media a useful tool in predicting the trajectory of the disease outbreak. Based on its findings, Dataminr can provide much-needed information on potential ‘virus hot spots’ one to two weeks before any ‘exponential growth in official COVID-19 case counts’ is experienced.

29 Joshi et al., “Harnessing Tweets for Early”, 90.
30 Joshi et al., “Harnessing Tweets for Early”, 90.
32 Elder, “Social Media May Show”. 
South Korea and Taiwan are touted as prime examples of how governments can use digital communications technologies in their responses to COVID-19 and future health crises. These countries effectively relied on communications technologies to ‘understand what their citizens were thinking and to prevent the health disinformation spreading’. South Korea relied extensively on its pre-existing ‘secure emergency text message system’, while in Taiwan, the Central Epidemics Command Control communicated with citizens via ‘broadcast media, YouTube, memes, and even downloadable cartoon stickers of the health minister’. The Taiwan Centres for Disease Control also relied on Facebook, a messaging service called Line, and a telephone hotline to directly address questions from concerned citizens.

When asked whether monitoring social media during a public health crisis could be a useful tool for African governments in managing such a crisis, a public policy expert noted that it could be helpful. This expert cited the particular benefits of social media in ‘bring[ing] the world closer together’ and enabling faster, virtually instantaneous communication. The expert also noted that a number of useful tools created by social media developers were at the disposal of governments precisely for disaster and other crisis management responses.

In particular, the expert noted the Data for Good Network, a Facebook programme aimed at collecting data from publicly available sources in order to create, among others, accurate ‘movement maps, population density maps, [and] disease prevention maps’.

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34 Tworek, “Lessons Learned from Taiwan”.
35 Tworek, “Lessons Learned from Taiwan”.
36 Tworek, “Lessons Learned from Taiwan”.
37 Public policy expert at social media company, interview by Isabel Bosman, August 21, 2020.
38 Public policy expert, interview.
The programme partners with various humanitarian, research and academic organisations. Data sets are publicly available and can also be useful to governments. The expert noted that this programme could assist researchers and government in the ‘managing of COVID-19, tracking everything from sentiment, trends, hotspots, as well as managing misinformation and fake news’. This service has already been taken up by some African governments.

Furthermore, Facebook has created an in-app service called Crisis Response, a helpful tool in the event of natural and or man-made disasters. This service enables survivors of such crises to ‘mark themselves “safe” and also allows users to seek help, transfer funds and access information. Tailor-made solutions adapted to each specific context are especially important. The expert added that this was a factor that was often overlooked, emphasising that governments and citizens needed to be properly informed of the services and products available to them.

### Country spotlight: Social media and digital innovation in South Africa during COVID-19

South Africa has for some time relied on traditional modes of e-governance such as websites and email to interact with citizens. A number of services are also provided through these platforms, generally aimed at ensuring ease of access for citizens. In some parts of the country, people can log appointments for vehicle licence renewals through official departmental websites. The Department of Home Affairs embarked on the digital route in 2016 through its e-Home Affairs platform, which allows citizens to apply for official identity documents and passports and enables payment for these services. Most recently, the department expanded its collection sites for these documents to include selected bank branches. These additional collection sites are largely clustered in Gauteng.

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39 Public policy expert, interview.
40 Public policy expert, interview.
41 Public policy expert, interview.
43 My Broadband, “19 New Bank Branches”. 
In addition to these traditional e-governance platforms, social media accounts allow individual branches of government to communicate important details regarding public service delivery. One example relates to electricity supply. The country often suffers prolonged periods of power outages resulting from an insufficient and unstable electricity supply. The City of Johannesburg operates a popular Twitter account, @CityPowerJhb, with more than 800 000 followers, where people receive updates on scheduled power outages and report faults and unscheduled power outages, with real-time responses to their queries. The follower count of this Twitter account represents only a fraction of the country’s total population and is limited to those in the Johannesburg municipality. Residents can also receive their municipal accounts via email. During the COVID-19 lockdown this service was expanded to include SMS notifications with a link to the relevant municipal statement.\textsuperscript{44}

These e-government services, while useful, are not accessible to all South Africans, largely owing to the digital divide. In January 2020 Internet penetration in South Africa stood at 62%, with mobile Internet users making up 96% of the total.\textsuperscript{45} The overwhelming majority (95%) of mobile Internet users access the Internet through a smartphone. This is largely attributable to the relatively wide spread of 3G and 4G/LTE and the recent rollout of 5G across the country, with 70% of all mobile connections relying on these networks.\textsuperscript{46} While Internet use in South Africa is fairly high, social media penetration in the country was only 37% in January 2020.\textsuperscript{47}

This relatively low Internet penetration, combined with low social media penetration, means that e-government services offered via social media do not reach a wide proportion of the population. South Africa has the second largest smartphone market on the continent after Nigeria, and so the number of connected people in the country is set to increase.\textsuperscript{48} In terms of infrastructure, South Africa is the only African country with functioning 5G mobile networks while the technology is still in the testing phase in Nigeria, Gabon, Uganda and Kenya.\textsuperscript{49} The challenge is therefore to increase access to affordable smartphones and advanced mobile networks in order to ensure that e-government facilities are more equally spread across the country.

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\textsuperscript{44} Marleny Arnoldi, “City of Johannesburg to Provide Access to Municipal Statements by SMS”, \textit{Engineering News}. April 16, 2020, \url{https://www.engineeringnews.co.za/article/city-of-johannesburg-to-provide-access-to-municipal-statements-by-sms-2020-04-16}.


\textsuperscript{46} Hootsuite and We Are Social, \textit{Digital 2020: South Africa}.

\textsuperscript{47} Hootsuite and We Are Social, \textit{Digital 2020: South Africa}.

\textsuperscript{48} GSMA, \textit{The Mobile Economy}.

\textsuperscript{49} GSMA, \textit{The Mobile Economy}. 
While social media penetration still has to improve, citizens’ current engagement with the South African government through social media shows how these technologies can enhance governance. Since the start of the pandemic, the Department of Health has played an active role in disseminating information, providing COVID-19 statistics and safety tips on different social media platforms. Infographics on lockdown rules and legislation were also shared on social media through the official accounts of the South African government. The government has worked closely with social media companies and software developers to create an effective digital response to the pandemic.

WhatsApp has been identified as the most popular social media platform in South Africa.\(^5^0\) It is therefore no coincidence that WhatsApp was one of the first platforms used by the South African government in its COVID-19 response. South African non-profit organisation Praekelt.org has been instrumental in the development of a COVID-19 WhatsApp ‘chatbot’ or Application Programming Interface (API) based on a similar service it had been running with the Department of Health on ‘maternal well-being’ prior to the pandemic.\(^5^1\) The service is available to all WhatsApp users in South Africa and has significantly enhanced the country’s COVID-19 response by providing up-to-date information on the disease. The API has also been incorporated into the global pandemic response of the WHO, with a designated WHO WhatsApp chatbot service developed by Praekelt.org.\(^5^2\) The API, a free service, relies on ‘machine learning technology’ and offers ‘information on coronavirus including travel advice, latest numbers, symptoms’.\(^5^3\) Importantly, it also debunks myths surrounding the disease. Other African countries, including Angola, Malawi and Mozambique, also make use of COVID-19 APIs, while Lesotho is busy developing such a service.\(^5^4\)

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50 Hootsuite and We Are Social, Digital 2020: South Africa.
52 Matishe, ‘WHO Is Raising Coronavirus’.
53 Matishe, ‘WHO Is Raising Coronavirus’.
54 Public policy expert, interview.
users to register using their names. Instead, it designates a specific code to each individual device registering with the app.55

The app also does not track the user’s location, but instead relies on the built-in Bluetooth connectivity function of smartphones to register other devices nearby connected through the app, and maintains a record of any such contact. If someone tests positive for COVID-19, they are given a unique PIN number by the Department of Health to input on the app, following which all those devices known to have been in close proximity to the user receive a notification of the possibility of exposure to COVID-19.56 Towards the end of September 2020, downloads of the application numbered just more than half a million. The goal is to have 10 million South Africans using the application.57 Similar applications have been used with varying levels of success in South Korea, India and Germany. The overall feeling is that contact tracing apps are a meaningful supplement to manual modes of contact tracing.58

Privacy in contact tracing has been highly prioritised in the South African government’s response to COVID-19, especially where smartphones are concerned

Privacy in contact tracing has been highly prioritised in the South African government’s response to COVID-19, especially where smartphones are concerned. The country’s earliest contact tracing methods involved monitoring location and movement data tracked by smartphones. COVID-19 response regulations enable the director-general of health to obtain this data on persons who have tested positive for COVID-19, as well as those they

56 “SA Now Has an Official”.
have come into contact with, from mobile network service providers. This is a temporary measure put in place from 5 March 2020 ‘until the national disaster lapses’.\(^{59}\)

While this measure is temporary and in immediate response to a national disaster, it raises a number of questions around future privacy and protection from government surveillance. In order to ensure that this surveillance power is not abused, Justice and Correctional Services Minister Ronald Lamola appointed former Constitutional Court judge Kate O’Regan to monitor this operation and ensure the protection of privacy and personal information.\(^{60}\)

Another noteworthy example of South Africa’s embracing digital acceleration relates to the national census scheduled for 2021. In a first for the country, Statistics South Africa (SSA) has opted for digital data collection methods, enabling the census to be conducted both online and telephonically, taking advantage of mobile phone penetration.\(^{61}\) By relying on computer-assisted personal interview technology, SSA staff will be able to digitally capture census data while in the field, while individual respondents will have the option of completing the census questionnaire via computer-assisted web interview technology online.\(^{62}\)

**African governments and social media: It’s complicated**

While global examples and the specific case study of South Africa indicate that it is indeed possible for social media and smartphones to play a positive role as a governance tool, there are still a number of challenges. The digital divide, discussed earlier, is one of the biggest obstacles to implementing e-government as a regular feature on the continent. Other challenges include scepticism about social media and fake news.

**Scepticism about social media**

It is unlikely that social media can be used as an effective governance tool in situations where it is viewed in a negative light by governments and where access to these technologies is restricted or prohibited. The #KeepItOn Report on global Internet shutdowns in 2019 indicated an increase of 47% in the number of Internet shutdowns on the continent between 2018 and 2019. The report also found that of the total Internet


\(^{60}\) Mkhentane, “Covid-19 Judge Kate.”


shutdowns (14) in Africa, half were experienced in African countries that had not previously cut off Internet access.63

One country in particular, Chad, stands out has having one of the longest recorded global social media-targeted Internet shutdowns for the period 2018/2019, spanning 472 days.64

Citizens might also be concerned about a government’s online presence for fear of surveillance. This fear is not ‘unreasonable’, but in cases such as the COVID-19 Alert SA app, is ‘largely misplaced’.65 An article in the Daily Maverick notes that efforts to fight this pandemic should not be compromised by ‘allow[ing] paranoia over an illusory threat to deprive us of a tool that could be usefully employed against the genuine threat of Covid-19’.66

Fake news

The circulation of fake news and misinformation on social media platforms presents governments with a significant challenge. A public policy expert says that ‘the spread of misinformation and fake news is not only an annoyance – it can have [a] very grave impact’ in the real world and therefore is taken seriously by social media companies.67 She notes that the management of fake news is not primarily a government responsibility. However, social media companies can help governments to fight fake news by regularly updating content policies and community standards. Furthermore, while she emphasises the role of third-party fact-checkers in these efforts, she acknowledges that they currently ‘do not have

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66 Caromba, “Covid-19 Exposure Notification”.
67 Public policy expert, interview.
Third-party fact-checking organisations are an asset in combatting the spread of fake news and misinformation, but at present there are not enough of these organisations that are ‘vetted’ with the International Fact-Checking Network (IFCN). Social media companies can only work with fact-checking organisations that are affiliated with the IFCN.  

Conclusion

In a world that was already going digital, COVID-19 has highlighted dependence on the Internet and social media technologies. It has shown that the future could hold an even more prominent role for social media and mobile technologies in e-government. South Africa is one African country that has adapted quickly and innovatively to this digital acceleration, and the technologies currently in use could be a model for other African governments to replicate. While there are significant challenges in terms of the implementation and widespread adoption of social media technologies, their global prevalence and versatility would suggest that these are advances to be embraced rather than shied away from.

Recommendations

- African governments should forge strong partnerships with social media companies in order to benefit from the interactive communication tools available via social media platforms. Such established partnerships could be particularly useful in crisis situations.
- Partnerships between governments and social media companies should be based on principles of best practice. These should be enshrined in law.
- The privacy and anonymity of social media users should be prioritised by governments and social media companies at all times and should follow legal guidelines.
- E-government in Africa can be enhanced by relying on existing tools such as social media and the Internet, as well as electronic communication methods such as SMSs.
- Internet infrastructure expansion should be accompanied by plans to increase access to networks and the tools, such as smartphones, needed to use them. This should go hand in hand with socio-economic development plans.

68 Public policy expert, interview
69 Public policy expert, interview
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