

Opportunities and challenges of e-government tools in the digitalisation agenda

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Introduction

Digitalisation is rapidly becoming an important focus of many donors' development cooperation. A recent UN report indeed emphasizes that digitalisation can help to improve policy integration, enhance transparency, promote citizens participation and bridge current divides. Nevertheless, the World Bank, in its latest World Development Report, also highlights that the "digital dividends" are not automatic and may themselves increase inequalities but that building skills and strong institutions is essential to enhance and structure the development of new technologies in developing countries. The Belgian cooperation engages with these developments and has just adopted a strategic policy note on "Digital for Development" (D4D) which aims to "achieve better results and reach out to larger numbers of beneficiaries and to those most in need" for its cooperation through the use of data and digital technologies.

Among these technologies, mobile phones and Internet are most prominent, both witnessing an incredible growth, reaching more and more populations everyday. The number of mobile phone subscriptions now nearly equals the total world population. There are more mobile phone users in the world than people having a bank account⁴ or having access to clean water or secondary school.⁵ Mobile

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¹ UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016, e-Government in Support of Sustainable Development.* New York, United Nations, 2016, p.94.?

² World Bank, World Development Report 2016, Digital Dividends. Washington, D.C., 2016, p.101.

³ DGD, "Strategic Policy Note on 'Digital for Development' (D4D) for the Belgian development cooperation"

⁴ Rotberg, R., Aker, J., "Mobile Phones: Uplifting Weak and Failed States", *The Washington Quarterly*, 36/1 (2013): 112. Accessed July 22, 2016. doi: 10.1080/0163660X.2013.751651.

⁵ World Bank, World Development Report 2016, Digital Dividends. Washington, D.C., 2016, p.101.

technologies are even available in areas where poverty prevails and infrastructure remains underdeveloped. In Africa for instance, the number of subscriptions per 100 inhabitants rose from 71.41 in 2014 to 83.99 in 2016. Some of the reasons explaining this rapid and high adoption rate are the poor quality of the land-line services, the sinking price of mobile phones, the growing quality of networks or the availability of prepaid tariffs.

Likewise, the Internet adoption rate remains lower in developing countries but it also keeps increasing rapidly, especially through the expansion of 3G, cable, satellite or fibre-optic coverage. Two thirds of the population originating from developing countries are however still offline. Its price, uneven accessibility or a limited skilled workforce prevent the Internet from catching up with mobile phones. The need for greater Internet adoption is reflected in the Sustainable Development Goals (SDGs) with its objective of significantly increasing "access to Information and Communications Technology (ICT) and strive to provide universal and affordable access to Internet in Least Developed Countries (LDCs) by 2020."

How can donors or development agencies support partner countries in the digitalisation agenda? To approach this question, different angles can be taken: digitalisation can be regarded as an objective where the intent of the intervention is the development or adoption of digital technologies; or digitalisation as a tool where digital technologies are used to deliver better interventions (through the collection and use of data for instance) and by doing so achieve better governance. This policy brief focuses on the second angle and more specifically on the opportunities and limits of e-government service delivery tools.

On the opportunities side, important improvements can come from the suppression of bottlenecks to the rationalization of the service delivery, enhancing citizen participation, increasing access to information or better addressing needs of the population by becoming more citizen centric. Nevertheless, challenges and limits are inherent to the adoption of e-government tools. These may be technological or logistical and linked to the updating process from the former (paper) system (lack of interoperability, separation of the administration into silos and into different administrative level) or to the unequal real access to technologies and the lack of required skills among the population. Beyond these problems, motivational,

⁶ UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016, e-Government in Support of Sustainable Development.* New York, United Nations, 2016, p.94.
⁷ Ibid., p.112.

⁸ Deloitte, eTransform Africa: Modernising Government through ICTs, Transformation-Ready: The strategic application of ICTs in Africa, 2012, p.18.

⁹ UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016, e-Government in Support of Sustainable Development.* New York, United Nations, 2016, p.96.

¹⁰ Rotberg, R., Aker, J., *op cit.*, p.113.

United Nations Special Session of the UN Broadband Commission for Sustainable Development, Davos, Switzerland, 21 January 2016. *Working together to connect the next 1.5 billion by 2020, Davos, 21 January 2016.* Davos, 2016, p.5.

ethical and cognitive difficulties remain among which the lack of political will to change the system or the malevolent use of technology by the government to control its population. Finally, some regulatory barriers may still prevent the willing governments to grasp the development opportunities that technology represents.

E-government service delivery: defining the terms

E-government (electronic government) is simply the use of ICTs in order to improve the government's service delivery. 12 It aims at simplifying the relationship between the government and the citizens and firms under its responsibility. 13 While e-government is a general innovative trend and its reach is global, a country's level of appropriation varies according to its demography, political and economic development.

E-government encompasses G2G (government-to-government), G2C (government-to-citizen) and G2B (government-to-business) connections. 14

G2G is the "communication and transactions among different public administration organisations". 15 It links all administrative levels within governments and is an indispensable part of e-government implementation. The G2G is invisible to citizens and as such often difficult for researchers to observe. 16 In South Africa, G2G initiatives in the justice sector have consisted in the automation of processes for state attorneys, automated interaction between courts, attorneys and the sheriff or computer centres in informal settlements to provide training". 17

G2B are the relations between the government and the firms based within its territory. Contrary to G2G, G2B is visible to the public. 18 It can include for instance "the online information availability of regulations for agencies, the online electronic tax services for businesses, and consolidated trade information for export/import data to form a "business compliance" information centre". 19 These services aim at helping

¹² Nven-akeng Nkohkwo, Q., Islam, S., "Challenges to the Successful Implementation of e-Government Initiatives in Sub-Saharan Africa: A Literature Review", Electronic Journal of e-Government, 11/2 (2013): 253. Accessed July 29, 2016. Available online at: www.ejeg.com, p.253.

13 Mutula, S., Mostert, J., "Challenges and opportunities of e-government in South Africa", *The Electronic Library*,

^{28/1 (2010): 39.} Accessed July 29, 2016. doi: 10.1108/02640471011023360, p.39. ¹⁴ lbid., p.40.

¹⁵ Zheng, D. et al., "E-government adoption in public administration organizations: integrating institutional theory perspective and resource-based view", European Journal of Information Systems, 22 (2013): 222. Accessed Augustus 10, 2016. doi: 10.1057/ejis.2012.28, p.223. bid. p.222.

Mutula, S., Mostert, J., op cit., p.40.

Zheng, D. et al., *op cit.*, p.222.

Shambour, Q., Lu, J., "A Hybrid Trust-Enhanced Collaborative Filtering Recommendation Approach for Contractional Journal of Intelligent Systems. 26 (2011): 815. Perzonalized Government-to-Business e-Services", International Journal of Intelligent Systems, 26 (2011): 815. Accessed Augustus 10, 2016. doi: 10.1002/int.20495.

businesses to know and observe the rules set by the government.²⁰

Finally, G2C links together the government and its citizens, allowing them to benefit of a higher quality service delivery. One-stop-shops are an example of the government willingness to interact with the citizens in order to provide better suited and accessible services.²¹

Opportunities of e-government service delivery tools

These technologies are progressively adopted in order to grasp all the potential benefits they represent such as combatting poverty or boosting socio-economic standards.²² E-government can also be an opportunity to break away from former inefficient paper-based systems.²³ Thanks to new technologies, governments can get rid of (or at least diminish) bottlenecks and red tape and simplify the procedures.²⁴ The "enormous movements of correspondence, duplication of files, wastage of paper, difficulty in accessing information in files, loss of data and general inefficiency of operations" can highly be reduced, raising efficiency, and allowing for huge gains in time.²⁵

Another important potential opportunity of e-government service delivery is its rationalization as it is often cheaper, necessitates fewer workers²⁶ and interoperability ("digital plumbing") is facilitated.²⁷ Egovernment can eventually lead to greater transparency and accountability, also diminishing trust obstacles by enhancing bilateral communication.²⁸

On the citizens' side, e-government tools can allow governments to become more citizen-centric, especially if they increase the focus on the needs of citizens and firms.²⁹ A greater attention on the needs and expectations of each segment of the population "enables public agencies to deliver services to citizens over channels and devices that are most appropriate for them. Portals, information kiosks, call centres, mobile devices, conventional telephone and personal visits are common options available to

²² Mutula, S., Mostert, J., op cit., p.39.

²⁴ Nven-akeng Nkohkwo, Q., Islam, S., *op cit.*, p.253.

²⁰ Shambour, Q., Lu, J., op cit., p.815.

²¹ World Bank, *op cit.*, p.166.

N Kalu, K., "Capacity Building and IT Diffusion, A Comparative Assessment of e-Government Environment in Africa", Social Science Computer Review, 25/3 (2007): 359. Accessed July 28, 2016. doi: 10.1177/0894439307296917, p.360.

²⁵ Mutula, S., "Comparison of sub-Saharan Africa's e-government status with developed and transitional nations", Information Management & Computer Security, 16/3 (2008): 236. Accessed July 28, 2016. doi: 10.1108/09685220810893199, p.235.

²⁶, Ibid., p.236. ²⁷ N Kalu, K., *op cit.*, p.359. ²⁸ Deloitte, *op cit.*, pp.10-11.

²⁹ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the* People. New York, United Nations, 2012, p.65.

citizens today"³⁰ and specific attention can be given to vulnerable groups such as youth populations, women, immigrants, elders or disabled people.³¹

For instance, the number of countries delivering specific services for women has increased from 36 in 2014 to 61 in 2016. Women can be empowered through e-voting, e-learning and e-participation forums. The use of ICT can also enable them to participate to surveys and to give their feedbacks and complaints.

E-government users can also be included in the decision making³² and have an easier access to information.³³ Governments can indeed release information about their different policies and legislations so that the citizens are more able to understand the system in which they are living.³⁴ The citizens can also interact directly with the government and give their feedback on the services delivered.³⁵ Through new channels of technology, government can now offer the possibility to have access to services which already existed in the past but necessitated long processes. Examples of such services are online tax systems (see box n°1), obtaining documents among which their personal identity card, driving license or marriage certificate,³⁶ or the possibility to register a new-born in order for him/her to be recognised by the government, to have access to welfare facilities and later access to vote.³⁷

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³⁷ World Bank, *op cit*., p.152-153.

³⁰ Deloitte, *op cit.*, p.15.

UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016, e-Government in Support of Sustainable Development*. New York, United Nations, 2016, pp.97-123.

³² Ibid., p.10.

³³ N Kalu, K., *op cit.*, p.359.

Mutula, S., Mostert, J., op cit., p.40.

³⁵ World Bank, op cit., p.17.

UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016, e-Government in Support of Sustainable Development.* New York, United Nations, 2016, p.87.

Box 1: e-Filling in Kenya: A G2C and G2B example

In many countries, it is now possible to pay taxes online, even in the developing world. Globally, the number of countries providing online tax services grew from 73 countries in 2014 to 114 in 2016. For instance, the Kenya Revenue Authority (KRA) has launched an "iTax system" in October 2011. The citizens can register, download forms and make payments online. The system has mostly brought positive results, helping the country reach a higher level of tax compliance.

Several positive aspects emerge from online tax systems in many developing countries: the citizen/firm wastes less time to pay the tax, the transaction includes less intermediaries, and the tax payers' pressure to pay a bribe to government's officials is reduced.

Sources: Gutayu Barako, G., "Efficacy of iTax System on Tax Administration in Kenya" (University of Nairobi, 2015), p.3; UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016*, e-Government in Support of Sustainable Development. New York, United Nations, 2016, p.88; World Bank, *World Development Report 2016*, Digital Dividends. Washington, D.C., 2016, p. 161

E-service delivery can also be approached through a whole-of-government lens as to provide a single entry point to government services, even if these services are delivered by different public agencies (see box n°2). Begin Given the fact that a large part of the population may not be informed about the different parts of the administration and their qualifications or competencies, it can represent a great improvement for the government to be able to make the portal intuitive and easy to use through digitalisation. A widespread way to make the website user-friendly is to organise it in categories such as life events (birth, marriage, etc.) or populations (young, job seeker, foreigner, firm, etc.). Another approach is to include an efficient search feature which aggregates the information of all the government websites. When none of these two approaches is applied, it is frequent to find websites integrating links to the different branches of the government, integrated 'portlets', to ease as much as possible the process.

³⁹ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People*. New York, United Nations, 2012, p.64.

³⁸ UN Department of Economic and Social Affairs, *United Nation e-Government Survey 2016*, e-Government in Support of Sustainable Development. New York, United Nations, 2016, p.8.

⁴⁰ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People*. New York, United Nations, 2012, pp.58-62.

Box 2: One-stop portal in Botswana

Large e-service reforms have been recently undertaken by the government of Botswana in order to improve the delivery of public services. It has developed a portal which aims at being transparent and citizen-centric. On the portal, citizens can easily download forms such as applications for industrial license, import permits, or work permits. Citizens as well as firms can pay their taxes online and information on health (nutrition, AIDS, etc) and other fields are delivered. Moreover, the government of Botswana embraced the one-stop-shop system, which strongly facilitates researches. The website also includes a searching tool and is divided into categories (citizens, business, visitors, etc), knocking down the last access difficulties.

Source: Deloitte, eTransform Africa: Modernising Government through ICTs, Transformation-Ready: The strategic application of ICTs in Africa, 2012, p.58.

Challenges

Recent experiences of e-government service delivery have however not all succeeded and a lot of projects failed to reach their objectives, consequently wasting public funds. 41 "About 30 percent of these projects are total failures, with the project abandoned before completion. Another 50 to 60 percent are partial failures, with significant budget and time overruns and only a limited number of the project objectives achieved. Fewer than 20 percent are successes". 42

Among the major challenges, especially impeding the one-stop-shop approach to service delivery, is the division of the administration into different 'silos', worsened by the separation in different levels such as regions, localities, etc. The separation and the lack of interoperability – "the ability of government organisations to share and integrate information by using common standards" – is not evident either because of cost, political will or even organisational culture as it requires overriding the limitations of the former system, defining a joint framework, creating new platforms and training officials, among other tasks.⁴⁴

Another important challenge or dilemma is the government's control over its population through the use of technologies. Indeed, as the World Bank explains, technologies can help well-meaning leaders to

⁴¹ World Bank, op cit., p.152.

⁴² World Bank, *op cit.*, p.165.

⁴³ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People*. New York, United Nations, 2012, p.58.

⁴⁴ Ibidem.

better deliver services to their citizens but have not helped the citizens to compel ill-disposed governments to foster legitimacy. For the technological evolution to lead to the improvement of service delivery, a capable government and an empowered citizenry are required. Service delivery issues are hard to denounce and it is difficult to hold one precise entity responsible for a certain failure. That explains the need for a strong, constant citizens' mobilisation to enhance any improvement of the situation, and reliable institutions to associate with.⁴⁵

Box 3: The censorship dilemma

In autocratic countries, leaders face a "dictator's dilemma". Indeed, increasing the level of censorship can be harmful for the economic development but enabling citizens to access all the information Internet provides can be risky because it may lead to collective action, challenging the governments' authority. However, autocracies found ways to overcome the challenge and calibrate their control. They started, for instance, to censor information encouraging collective action without prohibiting individual criticism.

Autocracies can impede the diffusion of some information, either by shutting down the whole Internet access, like in Egypt in 2011, or by blocking the access to some websites or individual posts. For example, according to the World Bank, in 2013 alone, 6,951 governments' requests to erase content from search results have been sent to Google.

"The relationship between online services and government type is U-shaped, with both more democratic and more autocratic governments scoring high on the United Nations' online service index". Indeed, beyond its risks, the Internet brings significant benefits for autocracies. For instance, it allows them to better understand the citizens discontent in order to control it.

Source: World Bank, World Development Report 2016, Digital Dividends. Washington, D.C., 2016, pp.26-27; p.178.

The World Bank also claims that, in Africa (where mobile phones are still the main Internet access), only five percent of the population used the Internet to obtain information about the government or to have any contact with it, while 63 percent used it to communicate with health workers. Even if many countries have a mobile e-government website, real access to Internet services is limited and causes e-government projects to often favour the richer fringes of the population over poorer ones, increasing the already existing digital divide. 46

Moreover, "to have impact, e-government systems need to be accompanied by regulatory and administrative reforms—changing laws and management practices, simplifying tax procedures, and

⁴⁵ World Bank, *op cit.*, p.152.

⁴⁶ World Bank, *op cit.*, p.155.

increasing the ability of taxpayers and tax officials to use these systems."⁴⁷ However, these legal changes are often impeded by a lack of political will.⁴⁸ It is the reason why building trust among the various departments is crucial to the good implementation of one-stop government initiatives⁴⁹. To reach this goal, the UN advises to strengthen already existing collaborations and to work progressively, by consolidating current basis.⁵⁰

Furthermore, the challenges also have a technological side. An integrated approach of public service delivery means linking together information originating from a wide range of different websites which do not use the same tools, have not been created during the same period of time, and, as a consequence, are not compatible, security wise. Authentication systems and ensuring a fool proof security system (concerning private information as well as payment) can be a technological as well as financial challenge in sometimes fragile political environment.⁵¹

In parallel, the lack of technological skills is a considerable obstacle to the good implementation of the e-government service delivery initiatives. Most of the developing countries do not have the staff required to manage the implementation of an e-service delivery project or a population able to use it. Here appears what is called a "design-actuality gap". ⁵² Beyond the staff, e-service delivery indeed requires an educated population, capable of reading and using mobile phones and/or computers which can be lengthy process and challenge in many countries. ⁵³

As a consequence of all these challenges, according to some authors, "developing country government now have a digital veneer over a largely unchanged structure, culture, and performance orientation"⁵⁴. Nevertheless, keeping these elements in mind when identifying and programming digitalisation interventions can foster higher chances of success.

48 Nven-akeng Nkohkwo, Q., Islam, S., *op cit.*, p.259.

World Bank, op cit., p.162.

⁴⁹ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People*. New York, United Nations, 2012, p.63.

UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People*. New York, United Nations, 2012, p.64.

⁵¹ UN Department of Economic and Social Affairs, *United Nations e-Government Survey 2012, e-Government for the People.* New York, United Nations, 2012, p.62.

⁵² Nven-akeng Nkohkwo, Q., Islam, S., op cit., p.259.

Mutula, S., op cit., p.247.
 World Bank, op cit., p.170.

Box 4: Mobile phone applications overcoming illiteracy issues in e-health field

ICT technology development is said to be impeded by the lack of needed skills in developing countries. However, in Ghana for instance, solutions have been found to overcome the illiteracy problem. Indeed, the Mobile Technology for Community Health (MOTECH) launched a mobile phone project to reduce maternal and neonatal deaths. It created two applications delivering informations to pregnant women and mothers. The project innovates by sending *voice messages* in new parents' local languages. It sends reminders for health appointment and alerts the nurses and mothers when an appointment has been missed and cares are overdue, in order to find another arrangement and maximise the coverage.

Source: African Development Bank Group, Innovative e-Health Solutions in Africa Award, Investing in smart human capital innovations: Spreading inclusive growth capacities in Africa. 2014, pp.13-14.

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