E/C.16/2022/8

Economic and Social Council

Committee of Experts on Public Administration
Twenty-first session
4–8 April 2022
Item 9 of the provisional agenda*
Issues in digital government

Digital governance challenges and prospects for building forward better

Note by the Secretariat

The Secretariat has the honour to transmit to the Committee of Experts on Public Administration the paper prepared by Committee members Henry Sardaryan and Carlos Santiso, in collaboration with fellow Committee members Yamini Aiyar, Lamia Moubayed Bissat, Aigul Kosherbayeva, Devon Rowe and Najat Zarrouk.

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* E/C.16/2022/1.

Digital governance challenges and prospects for building forward better

Summary

    Refitting governments for purpose in the digital era has gained prominence in the global agenda. The coronavirus disease (COVID-19) crisis represented a "stress test" for governments around the world, promoting a rethinking of the role of the State. It has tested the digital resilience of governments and accelerated their digital transformation. It has also exposed an important digital divide between and within countries.

    It is suggested in the present report that there is a contradiction between information exchange as a global phenomenon and physical infrastructure that is geographically linked and therefore under a specific sovereignty, especially regarding the storage, processing and movement of information through Internet channels. In the absence of borders in the digital space and generally recognized rules of conduct in it, leading digitalized States and organizations under their control can sometimes distribute biased and misleading content to promote their own interests and values. There is also substantial harmful and misleading content from non-State organizations, including technology platforms in the private sector that need effective regulation. This leads to a desire for sovereign control over the Internet on the part of an increasing number of States, which is reflected in their attitude towards the storage of personal data.

    Central to the global debate on the future of government in the digital era is also the broader challenge of ensuring a just and inclusive digital transformation, with the goal of leaving no one behind. The United Nations could become a critical platform for promoting a people-centred and rights-based approach to such digital transformation, highlighting the importance of strengthening international cooperation to close the digital divide.

    Building forward better will require strengthening trust, integrity and inclusion in government, in the broader context of opportunities and challenges that digital governance represents for achieving the Sustainable Development Goals. This is particularly important, given that the COVID-19 pandemic has attributed a greater role to the State in ensuring such principles and ensuring that emergency and recovery funds are used for the purposes intended. Digital and data solutions have tremendous potential to detect and deter corruption, one of the world's greatest policy challenges, and anti-corruption strategies should be at the heart of government digitalization going forward.

I. Introduction

1.   Refitting governments for purpose in the digital era has gained prominence in the global agenda. The 2021 report of the Secretary-General, "Our Common Agenda" (A/75/982), underscores that trust is critical for a human-centred, rights-based digital transition. In turn, this requires leveraging digital innovations to further trust in government, ensure inclusion and strengthen public integrity. The 2020 report of the Secretary-General, "Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation" (A/74/821), highlights the importance of building capacities to leverage digital technologies to improve public policies and combat corruption.

2.   The global digital revolution, which accelerated in the context of the coronavirus disease (COVID-19) pandemic, contributes to a noticeable transformation of technological and economic structures and social relations and affects the development of public administration systems around the world.

3.   The rapid development of science and technology has created preconditions for potentially reducing socioeconomic inequalities at the national and global levels. While new channels and methods of communication have multiplied the informational connectivity of the world, they also contributed to the growth of misinformation and threats to the security of States that seek to protect such channels from foreign interference.

4.   In many aspects of the global digital economy, it is evident that there is a contradiction between information exchange as a global phenomenon and physical infrastructure that is geographically linked and therefore under a specific sovereignty. This contradiction is evident in the storage, processing and movement of information through Internet channels.

5.   The pandemic, for its part, gave technologies more importance, compared with the role and influence that society used to attribute to them. Before States and people had to reorganize their daily lives literally within a few days owing to the pandemic's onset, technologies were identified as means to support continued economic growth and make one's life more comfortable and basically created additional possibilities for the functioning of economic and social systems. Now, technologies appear to be the only way to save society's institutions from complete collapse in times of obligatory lockdowns and isolation.

6.   Having assumed a central role in organizing the efforts to combat the pandemic, the authorities in many countries of the world became extremely dependent on information and communications technology and the Internet industry, with its relevant companies. Online services, such as the ordering and the delivery of food through Internet platforms, videoconferencing services, cloud file-sharing services and e-mail newsletters, made remote working and the successful mass self-isolation of citizens possible.

II. Critical issues in digital development

A. Reconciling global digitalization and national interests

7.   Historically, there has been a serious imbalance in the geographical distribution of basic Internet infrastructure and the nationality of its main players, the overwhelming majority of which are under the jurisdiction of the United States of America. Given the practice of introducing unilateral sanctions against various

countries, some are striving to create an alternative protected circuit of so-called "national, sovereign Internet", and the number of such countries is growing.

8.   Currently, the leading countries in digitalization offer other countries favourable conditions only for creating the infrastructure necessary for the transition to the digital future. They are therefore ensuring connection to their own solutions, such as payment systems, data storage systems and electronic document management. Moreover, they provide themselves with an unlimited and practically free access to big data, receiving from this a direct economic effect, an additional advantage in the development of artificial intelligence tools and neural networks, and effective control tools.

9.   Taking advantage of the absence of borders in the digital space and generally recognized rules of conduct in it, States and organizations under their control can sometimes distribute biased and misleading content to promote their own interests and values.

10.   The COVID-19 pandemic revealed an enormous risk of monopolization of access to crucial technologies, such as remote working platforms, in education and public services. This suggests the need for global regulation to ensure equal access and prevent a situation whereby one State, where the corporations are situated, could limit the functioning of these technologies in other countries through its national regulation. Aside from motivating States to develop their own digital infrastructure, it is also important to create transparent rules for global access to these important globally used services, and help (developing) countries to overcome access difficulties, caused not only by the pandemic, but also by the transformation of the modern economy.

B. Question of leaving no one behind

11.   Humanity has already entered the digital era but, owing to the digital divide and the absence of access to Internet resources for some States and populations groups, gaps in the development of States themselves and of population groups within States may arise, which will be no less difficult to overcome than in the period of industrial societies. Access to the Internet today should be seen as being as significant as any other human right, such as the right to free movement or to work.

12.   The simplest solution for organizing distance learning was to conduct face-to-face classes through videoconferences. However, it is obvious that, in families with two or three children, one personal computer and a small living space, the simultaneous training of several schoolchildren or students became almost impossible. In those regions where the quality of the Internet connection left much to be desired, children were, in fact, deprived of normal access to or entirely excluded from the educational process.

13.   This can be attributed in part to the crisis nature of the pandemic, the inability to prepare for it in advance and its unexpected scale. However, there are increasing voices in support of the idea that education could be transferred to remote formats on a systematic basis, especially owing to the fact that the pandemic is ongoing. For example, a few universities could record materials in video format, prepare methodological programmes and send it to less renowned universities, where the task of the teaching staff would consist only of exposing their students to the recordings and materials sent. On the other hand, digitalization of education, carried out in a format to reduce or eliminate direct contact with students, might be the first step towards a significant decrease in learning outcomes of future graduates.

14.   The importance of digitalization in the sphere of providing public services appears obvious for modern public administration and implies the use of online technologies for gaining access to a vast number of its functions and services. On the one hand, it reduces time and cost for citizens to gain access to services; on the other, it creates an even higher demand for equal access to the Internet and online platforms. It should also be noted that States, which have chosen outsourcing of online services to private corporations, need to provide strong regulations to protect the personal data of citizens at the national level, to ensure that their rights are not violated for commercial or any other reasons.

C.   Policies on the use of new technologies in digital government development

15.   The desire for sovereign control over the Internet on the part of an increasing number of States is reflected in their attitude towards the storage of personal data. Various national laws regulate the need to store personal data by all operators of the Internet on servers located in the national jurisdiction (e.g., European General Data Protection Regulation). A crucial question going forward is ensuring that governments understand the principles and ways of ensuring the security of personal data and how big data is going to be regulated.

16.   One of the main forms of digitalization of public administration and services is the development of artificial intelligence. Its regulation should not hinder technological progress but rather facilitate it. In particular, the introduction of complete and irreversible bans on the use of some artificial intelligence technologies in the civil sphere should be avoided. Instead, measures that can prevent potential negative consequences of using artificial intelligence are required. Applying a regular assessment of the entire life cycle of artificial intelligence makes it possible to find solutions aimed at reducing the risks associated with these technologies.

17.   The United Nations could become a vital platform for resolving issues and risks associated not only with artificial intelligence development, but also with digital governance and the digital economy in general. It should continue to promote active cooperation between States, in collaboration with other partners, such as the Group of 20[1] and the Organisation for Economic Co-operation and Development,[2] in order to create opportunities for expanding the protection of consumer rights. In the future, an international agreement could be considered to introduce a single international tax on multinational corporations operating in a digital environment and set a minimum income tax rate of 15 per cent within the framework of the Action Plan on Base Erosion and Profit Shifting.

III.   Embedding concerns for trust and integrity in digital governance

18.   Building forward better will require strengthening trust, integrity and inclusion in government, in the broader context of the opportunities and challenges that digital governance represents. Critical for the digital transition is ensuring that no one is left behind and that people and their rights are at the centre of the transformation driven

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[1] Group of 20 ministers and its digital economy task force adopted a series of guidelines on the digital economy and digital government, with specific reference to artificial intelligence, during the Italian presidency in 2021.

[2] The Organisation for Economic Co-operation and Development (OECD) adopted guiding principles for artificial intelligence in 2019.

by disruptive technologies and the exponential growth of data. People, not technology, should drive change.

19. The COVID-19 crisis has accelerated the digital transformation of governments around the world, providing a renewed impetus to reinvent them, build their resilience and increase trust in them. This requires leveraging digital innovations and building the capacities to leverage digital technologies to improve public policies, government delivery and combat corruption.

20. The digital transition that the crisis has accelerated has brought to the fore three critical challenges in rethinking the role of government in the digital age, in a context that has seen a dramatic expansion of the role of the State in the economy:

(a) Trust. Generating or reinstalling trust in government will be central and feasible by designing adequate public policies and delivering better services for all through trustworthy and trust-enhancing government technologies. This is a critical juncture in time when the way in which governments manage and regulate technologies and the data of people will enhance or further undermine trust in government;

(b) Inclusion. Trust in government in the digital age also means that no one should be left behind or excluded from the digital transition by applying processes that are human-centred and representative of the realities of societies, especially in developing countries. It is critical to avoid digital exclusion and the widening of the digital divide, especially by supporting the data poor;[3]

(c) Integrity. Trust in government also requires strengthening public integrity, especially because the pandemic has also implied a greater role of the State, so that emergency and recovery funds are used for the purposes intended. Digital and data solutions have tremendous potential to detect and deter corruption, one of the world's greatest policy challenges, and anti-corruption strategies should be at the heart of government digitalization.

IV. Digitalization as an anti-corruption strategy

21. Digitalization can enhance integrity and boost the global efforts to combat corruption, propelled by smarter use of data and the rise of integrity analytics. For policy reformers in emerging economies, digital technologies are rapidly becoming their strongest ally in the efforts to combat corruption and in improving government set-up and services.

A. Preventive measures and side effects of digitalization

22. The rapid emergence of technological innovations in the integrity space has captured the spotlight. The most significant integrity benefits may nevertheless come in a subtler form and are often derived from advances in the digitalization of public administrations that reduce opportunities for corruption in the first place. In emerging economies, the expansion of government digital services and the digitalization of social transfers have had a significant impact on bureaucratic corruption.

23. In developing countries, petty bribery in everyday government services has the greatest impact on quality of life and trust in institutions. For individuals and small businesses, the costs of bureaucratic red tape can be significant. According to

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[3] See OECD, *Development Co-operation Report 2021: Shaping a Just Digital Transformation* (2021).

Transparency International, in 2017 one third of Latin Americans had paid a bribe to gain access to a public service to which they were entitled.[4] In Mexico in 2019 and 2020, the costs of red tape and regulatory burdens at the federal level represented 3.4 per cent of gross domestic product, according to estimates of the World Bank.[5]

24.   A valuable side effect of digitalization is the reduction in opportunities for arbitrary interference by corrupt public officials through automating internal bureaucratic processes and reducing the reliance on paper-based processes and in-person interaction. It also includes the streamlining of bureaucratic processes through administrative simplification and process re-engineering. The combination of digitalization and simplification of bureaucratic procedures improves both transparency and reliability. Governments are also deploying digital payment solutions to pay for public service fees, which further reduce in-person interaction. In 2015, Argentina decided to go paperless, with the digitalization of administrative procedures, the introduction of digital authentication and the expansion of digital services. Its simplification programme targeted the productive sector to cut red tape faced by the private sector. It generated savings to the productive sector estimated at $2.1 billion.[6]

25.   Another effect of government digitalization is the expansion of digital public services that are directly accessible online and end to end, which means putting the entire administrative procedure online, thereby allowing for it to be completed and monitored remotely. By digitalizing public services, governments aim to improve the effectiveness and efficiency of service delivery and, by limiting discretion, reduce red tape and petty corruption. Mexico digitalized its birth certificates and Argentina its driver's licences, which are two high-impact public services that are particularly vulnerable to bribe solicitation when people seek to expedite the process for obtaining either document.

26.   Moreover, digitalization can reduce information asymmetries between governments and businesses. The digitalization of public services automatically generates improved data on bottlenecks and vulnerabilities in the delivery of public services. It allows for the tracking of administrative procedures throughout their various stages and the myriad public entities involved. This is particularly important for services critical to economic activity, such as business licences, construction permits and property registration.

27.   Government digitalization has also made important strides against corruption in social policies and anti-poverty programmes. Digitalization helps social spending and antipoverty programmes in various ways, namely, by facilitating the biometric identification of beneficiaries, increasing the ease of government payments and improving the tracking of transfers to beneficiaries. In particular, the introduction of digital registers, digital identities and digital transfers has improved the precision of public benefits programmes and reduced the diversion of public funds.

28.   The digitalization of beneficiary registries has helped to improve the targeting of social transfers and the removal of ineligible beneficiaries. In South Africa, for example, provincial governments have used fingerprint-based biometric smart cards to deliver pension benefits and social grants. By 2013, 20 million social grant recipients had been registered by the South African social security agency. The

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[4] See Transparency International, *People and Corruption: Latin America and the Caribbean* (2017).

[5] See González Briseño, A., and Alejandro Espinosa-Wang, "Mejorar la regulación empresarial en estados y municipios de México para una recuperación rápida y sostenible", World Bank Blogs, 17 June 2021.

[6] See Ghersinich Eckers, J., "Estados ágiles en América Latina: la transformación digital y la simplificación de trámites del sector público de Argentina", Policy Brief 21, Development Bank of Latin America (2020).

digitalization of beneficiary registries detected 650,000 ineligible recipients, saving the government more than $65 million annually.[7]

29. In India, the "Aadhaar" digital identity programme, launched in 2009, now reaches its 1.15 billion residents through unique biometric identifiers that allow for the automatic determination of who is eligible to which social programme. There is evidence that biometric identification has reduced corruption in employment and pension programmes, as well as in fuel subsidy programmes. The government of the state of Andhra Pradesh reduced the leakage rate of its national rural employment guarantee scheme from 30.7 to 18.5 per cent on average by digitalizing it.[8] Digital government also reduced fiscal leakages in India's workfare programme, although it did not always improve programme outcomes.

30. Digital identification is also instrumental in curbing corruption in other public transactions, such as the disbursement of government salaries. The digitalization of registers of civil servants is contributing to reduced fraud in payroll outlays in the public sector. In 2009, when the Government of Afghanistan began to transfer salaries to its police officers by mobile phone rather than in cash, police officers started to receive their full pay for the first time. Nigeria eliminated more than 43,000 "ghost workers" from the public payroll following an audit using biometric identification in 2011, which saved the Government $60 million.[9] In Ghana, the digitalization of civil service databases and salary payments has helped to eliminate ghost workers and reduced the public sector wage bill. The digitalization of salary payments in the public sector also has important integrity benefits.

31. Digital payments are providing a further driver of integrity in social transfers, given that corruption often runs on cash. In 2016, India, for example, decided to withdraw large denomination banknotes to reduce tax evasion and expand the tax base. However, the transition from cash to digital transfers is not a minor issue for developing countries. Conditional cash transfers are the most widely used social assistance intervention, and many governments have introduced new initiatives in response to COVID-19. During the pandemic, governments accelerated the shift from cash to digital social transfers, in particular with regard to pension benefits. Prior investment in the digitalization of beneficiary registers and social transfers has played a critical role in scaling up emergency transfers during the pandemic. According to some estimates, digitalizing government payments in developing countries could save approximately 1 per cent of gross domestic product annually, equivalent to $220 to $320 billion annually, as a result of reduced leakage in government benefits and tax payments, reduced fraud and tax evasion, and increased cost savings.[10]

B. Digital tools used in corruption prevention

32. Digital tools used to prevent corruption include integrity technology and fraud analytics, which are on the rise. They refer to digital and data technologies that are specifically used to detect, disrupt, deter and prosecute corruption. Integrity technology builds on gains in access to information and open data, as part of the open government movement. Fraud analytics is a game changer, both within oversight

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[7] See Gelb, A., and Anna Diofasi Metz, "Identification revolution: can digital ID be harnessed for development?", Centre for Global Development (2018).

[8] Muralidharan, K. and others, "Building State capacity: evidence from biometric smartcards in India", *American Economic Review*, vol. 106, No. 10, pp. 2895–2929 (2016).

[9] See Gelb, A., and Anna Diofasi Metz.

[10] Lund, S., and others, "The value of digitalizing government payments in developing economies", in *Digital Revolutions in Public Finance*, Sanjeev Gupta and others, eds. (Washington, D.C., International Monetary Fund, 2017), pp. 305–325.

agencies in the public sector and among compliance officers in the private sector. In Denmark, for example, the application of data analytics in welfare fraud detection led to savings of more than 60 million euros in 2019.[11] In addition, there can be integrity side effects of broader digital government reforms, especially in social transfers. Accordingly, government digitalization can be an effective anti-corruption strategy, often without it even being its explicit and primary intent.

33. Tax administrations are using new technologies, for example, in e-filing to improve tax collection, increase voluntary tax compliance and prevent tax fraud, while also lowering tax compliance costs. Red tape in taxation is indeed a major hindrance to economic efficiency and a source of corruption. Making tax payments less complex and burdensome can generate significant fiscal benefits by expanding the tax base without tax reforms, especially in economies with an important informal sector. In the Republic of Korea, the Chungcheongnam-do provincial government, a recipient of the United Nations Public Service Award in 2018, has strengthened the disclosure of budget status, revenue and expenditure through its website. In Kenya, the introduction of a platform for digital payments has enabled the tax authority to increase transparency regarding its operations and reduce opportunities for corruption. Digitalization has reduced in-person interaction between taxpayers and tax officers and, as a result, opportunities for bribery.

34. Data mining, artificial intelligence and social networking analysis are boosting the ability of revenue authorities to detect tax evasion, especially in high-risk sectors. In the United Kingdom of Great Britain and Northern Ireland, for example, the revenue agency has extended its data analytics power to reduce the "tax gap". Its "Connect" system analyses taxpayer data and monitors discrepancies through social network analysis to identify potential tax evaders. Its predictive algorithm then identifies people most at risk of committing tax fraud and helps to devise pre-emptive action through "behavioural nudges" that incentivize people to change their behaviour, for example, by having the tax authorities send letters reminding potential evaders of the importance of taxes to finance public goods. It is estimated to have secured 4 billion pounds in additional tax revenue between 2008 and 2016.[12] Artificial intelligence and machine learning have also become powerful tools to disrupt fraud. Tax authorities in Mexico identified 1,200 fraudulent companies and 3,500 fraudulent transactions within three months of deploying its artificial intelligence tool.[13]

35. An important policy area in which digitalization can mitigate corruption risk is the management of land assets and property registries. Rwanda, where land administration has traditionally been riddled with corruption, introduced digitally enabled reforms in 2008 (focusing first on land mapping and titling and subsequently on managing the digital land registry) that resulted in a reduction in bribery and petty corruption.[14] In 2018 in Georgia, 1.5 million land titles were published on a blockchain-based platform, which helped to strengthen the integrity of the land

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[11] See European Commission, "Study on public sector data strategies, policies and governance", annex: case studies (Brussels, 2020).

[12] See Capgemini and HM Revenue & Customs, "Business intelligence technology helps HMRC increase yield" (2017); Vanessa Houlder, "Ten ways HMRC can tell if you're a tax cheat", *Financial Times*, 19 December 2017.

[13] See Aarvik, P., "Artificial intelligence: a promising anti-corruption tool in development settings?", U4 Report 2019:1, U4 Anti-corruption Resource Centre (2019).

[14] Shipley, T., "Case study 12: land administration reforms in Rwanda", in *Enhancing Government Effectiveness and Transparency: The Fight against Corruption* (World Bank, 2020), pp. 158–162.

registry system by providing an immutable chain of records on the ownership and value and an unalterable history of transactions of land titles.[15]

36. The digitalization of government contracting is a critical policy area for the deployment of integrity technology. Integrity reforms in government procurement have been reinforced by advanced e-procurement platforms that standardize and generate a wealth of data. These efforts have led to substantial increases in the level of competition and greater transparency on the identity of bidders and contract winners. However, while e-procurement lowers administrative costs, increases bidder competition and reduces the prices of contracts, empirical evidence on its impact on grand corruption remains inconclusive. This is due in part to the fact that fraudulent bidders are able to circumvent corruption controls and exert undue influence at less-monitored stages of the contracting process, such as contract renegotiations.

37. Gradually, public contracting agencies have moved beyond the digitalization of bidding processes to the use of contracting data to prevent corruption risks through risk-mapping and red-flagging. They have invested heavily in improving the quality, reliability and reusability of procurement data for analytics purposes. The procurement agencies of more than 30 national and subnational governments, including in Australia, Chile, Colombia, France and Ukraine, have adopted the Open Contracting Data Standard,[16] developed in 2015 by the Open Contracting Partnership, to better structure the data that they generate though their e-procurement platforms, making it possible to analyse them and identify suspicious patterns and transactions.

38. The Republic of Korea has been one of the pioneers in procurement fraud analytics. Its bid rigging indicator analysis system, introduced in 2006, was the precursor to business intelligence systems deployed by public procurement agencies to uncover cartel activity and identify bid rigging. The system predicts the probability of bid rigging by analysing huge amounts of bidding data from a large number of public agencies. In 2016, Ukraine made the use of its e-procurement platform, ProZorro, which was developed to scrutinize the Government's 4,500 daily bids, mandatory to all public agencies. In its first two years of operation, ProZorro saved the Government $1.9 billion and increased competition in procurement.[17] More recently, some countries, such as Paraguay, have created open data platforms to prevent fraud in emergency contracting related to COVID-19 spending, including emergency purchases, government subsidies, public contracts and donor grants.

39. These developments are often part of comprehensive open data platforms designed to track public investment along their entire value chain. Colombia, for example, developed an open data platform to track the use of mining royalties and the infrastructure projects that they finance. The platform has increased the efficiency of public investment projects and reduced monitoring costs, both for independent overseers and within the Government itself.

40. Oversight agencies, audit institutions and anti-corruption offices are also increasingly implementing integrity technology solutions. Audit offices have become increasingly savvy in their use of integrity analytics to identify high-risk transactions and detect corruption vulnerabilities. The audit agencies of Brazil, Colombia and Mexico, for example, are using artificial intelligence to place a red flag on potential irregularities in government procurement. The artificial intelligence algorithm of the Mexican audit office is capable of automatically detecting contracting irregularities

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[15] Shang, Q., and Allison Price, "A blockchain-based land titling project in the Republic of Georgia: rebuilding public trust and lessons for future pilot projects", *Innovations: Technology, Governance, Globalization*, vol. 12, Nos. 3–4, pp. 72–78 (2019).

[16] See https://standard.open-contracting.org/latest/en/.

[17] See OECD Observatory of Public Sector Innovation, "eProcurement system ProZorro" (2016). Available at https://oecd-opsi.org/innovations/eprocurement-system-prozorro/.

at the sub-federal level by the country's 7,881 spending entities. [18] However, technology, in itself, is not a substitute for clear legal frameworks and proactive independent auditors. While innovations in integrity analytics help auditors to perform their responsibilities more efficiently, they do not replace the need for auditors to act on these insights and enforce accountability.

41. Increasingly, technology-based, data-powered start-ups are seeking to have a positive social impact by partnering with civil society in the efforts to combat corruption. Integrity technology start-ups are, for example, supporting anti-money laundering solutions, due diligence and regulatory compliance efforts, as was, for example, the case in the context of the "Panama papers".

42. In Mexico, the national anti-corruption commission set up an "anti-corruption digital marketplace", an open-source platform containing a variety of integrity technology solutions, provided by start-ups or developed by government agencies, which are freely available to public entities and local authorities. These solutions augment digitally enabled accountability tools that empower citizens in the oversight of government action and spending. Crowdsourcing platforms, such as "Decide Madrid" in Spain, "Fund My Community" in South Australia or "Bogotá Participa" in Colombia, provide digitally enabled and open-innovation channels for citizen participation and participatory budgeting.

43. Actors within the integrity ecosystem are increasingly using disruptive technologies and data analytics as anti-corruption strategies. Prominent among these actors are government entities that manage public resources, such as finance ministries, tax authorities, procurement agencies and accountability institutions, the latter of which include audit offices, civil society and, increasingly, civic technology start-ups.

44. The correlation between digitalization and anti-corruption is well established at a macro policy level. Government digitalization, measured by the expansion of government digital services, has been shown to reduce corruption, improve government effectiveness and ameliorate the working environment. However, the causality of this relation remains an unsettled matter, and evidence on the impact of digitalization on corruption is still developing. More fundamentally, it is not easy to untangle the corruption gains of digitalization from its broader efficiency gains. Therefore, at a more micro policy level, it is still difficult to clearly identify the impact of specific digitalization reforms on different types of corrupt behaviours. An improved understanding of which specific policies have an impact on which types of corrupt behaviours would help policymakers to devise more effective anti-corruption solutions.

45. When assessing the impact of digitalization in the efforts to combat corruption, it should be borne in mind that digitalization has long been a tool for government modernization, especially in the area of financial management, with the automation of tax administration, treasury operations and government procurement. While government digitalization has accelerated the push for transparency, access to information and open data, corruption prevention has not, in general, been the primary objective of digital government reforms, Rather, reforms have traditionally been driven by efficiency considerations to rationalize public spending, especially in times of crisis and budget restrictions.

46. Moving forward, it will be important to untangle the specific integrity benefits of different types of digital reforms on the different types of corruption. The

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[18] See Santiso, C., "Hacking corruption in the digital era: how tech is shaping the future of integrity in times of crisis", (World Economic Forum and Global Future Council on Transparency and Anti-corruption, May 2020).

anti-corruption potential of digitalization may vary depending on the roots, nature and symptoms of a given type of corruption.

V. Conclusions and recommendations

47.   Digitalization can strengthen trust, integrity and inclusion in government and support governments on the path to "build back better" from the COVID-19 pandemic and achieve the Sustainable Development Goals.

48.   The great acceleration of government digitalization that the pandemic has created is irreversible. It has brought to the fore three critical challenges for building forward better:

     (a)   Ensuring that digital transformation strengthens, rather than undermines, trust in governments, both in their capacity to deliver and in the way that they manage people's data;

     (b)   Ensuring that it contributes to addressing some of the most pressing challenges to government institutions, in particular corruption;

     (c)   Ensuring that the digital transition is inclusive, people-centred and rights-based, mitigating the risks of a widening digital divide, within and between countries.

49.   Digital innovations, such as data analytics and artificial intelligence, have a critical role in preventing and deterring corruption in the digital age. More broadly, the digitalization of government has important anti-corruption impacts because it reduces opportunities for bribery and corruption vulnerabilities. This is especially the case in high-risk policy areas related to the management of public finances. However, to exploit in full the integrity benefits of digital transformation, there needs to be greater synergy between digital government reforms and anti-corruption strategies. Five policy recommendations, discussed below, can be drawn.

50.   First, policymakers can curb corruption by enhancing the integrity impact of digital reforms. Government digitalization can be a particularly effective anti-corruption strategy, with lower resistance and political costs, especially in high-risk environments. The integrity benefits of digital transformation can be significant, often with lasting structural impact. They are also difficult to undo as the digital revolution becomes more ubiquitous. The positive externalities of digital reforms contribute to deterring rent-seeking behaviours and anchoring integrity in government operations by altering incentives and changing mindsets. Although less visible and harder to measure, the anti-corruption externalities of digitalization make it a better investment than the punitive approaches of criminal investigation and prosecution.

51.   Second, policy action is critical, given that digitalization alone does not automatically translate into positive anti-corruption outcomes. The impact of government digitalization on corruption control hinges on related digital and analytical tools being effectively used by integrity actors to enforce accountability. Furthermore, these digital tools need to be adapted to the local context and the political economy in which they operate. Institutional incentives, State capacities and strong leadership are key. To make digitalization work as an anti-corruption device, it is equally important to reform analogue policies, rules and institutions.

52.   Third, the impact of digitalization on public integrity is contingent on policy choices that governments make. Digitalization can enhance transparency and enforce transparency obligations, but the extent of such transparency, in both the digital and analogue worlds, is a political decision. Moreover, the decision to apply digitalization in various policy spaces is also a policy decision, given that the integrity impact of digitalizing government services or procurement rules can differ.

53.   Fourth, to guide the digital transformation and effectively invest in and deploy government technology solutions, governments need to strengthen their own digital capabilities and expertise. This also applies to regulators that need to upgrade their digital capabilities for smarter regulation and enforcing compliance. The sharp rise in State technology budgets and the increasing complexity of digital solutions create their own set of vulnerabilities. Often, government technology procurement is complex and exposed to implementation failures, cost overruns and vendor capture. Such risks are often the result of the excessive outsourcing of tech expertise in the development of digital government projects. The financial management of government technology is an area that requires greater urgent attention.

54.   Fifth, digitalization also creates new corruption risks that need to be mitigated, such as new digital forms of corruption, given that corrupt networks are also leveraging technology innovations. The more governments that go digital, the more they expose themselves to cybercrime, ransomware attacks and new corruption risks associated with the manipulation of digital records and the misuse of digital identity. Cyberinsecurity is a key risk in the digital era.

55.   Central to the global debates on the future of government in the digital era are the broader ethical challenges of new technologies, with the goal of leaving no one behind. Reinforcing trust in the digital transformation has many dimensions, including trust in the capacity of governments to deliver services cost-efficiently; trust in institutions to ensure that these services are delivered in an inclusive, fair and effective manner, especially to those who need them most; and trust in democracy to mitigate the risks of disinformation and polarization that new technologies and, in particular, social platforms create.

56.   The United Nations could provide a critical platform for promoting a people-centred and rights-based approach to digital transformation, so that no one is left behind. It could promote global cooperation in collaboration with various partners, such as the Group of 20 and the Organisation for Economic Co-operation and Development, in order to create opportunities for protecting and expanding the rights of citizens in the digital economy and government digitalization. The adoption of the first global standard on the ethics of artificial intelligence by States members of the United Nations Educational, Scientific and Cultural Organization in November 2021 is an important step forward.

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