Accelerating Digital Transformation in Zambia
Acknowledgments

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The World Bank Group team included Ellen Olafsen (Sr. Private Sector Specialist and Task Team Leader), Ajai Nair (Sr. Financial Sector Specialist), Kirstin Conti (Sr. Governance Specialist), Nalin Jana (Sr. Education Specialist), Yoko Nagashima (Sr. Education Specialist), Mpuwualiyawa (Education Specialist), Krishna Pidatala (Sr. Operations Officer), Ida S. Mboob (ICT Specialist), Wale Ayeni (Sr. Investment Officer), Chijoke Gbolaham Egejuru (Investment Officer), Laura Quiceno Hernandez (Associate Investment Officer), Lesley Danes (Program Manager), Margareta O. Biallas (Sr. Operations Officer), Radwa Elsharkawi (Investment Officer), Neil Butcher (Education Consultant), Mutale K. Moyo (Education Consultant), Henry Sichembe (Private Sector Consultant), Christoph Stork (Digital Infrastructure Consultant), and Marcella Willis (Financial Sector Consultant). The team benefited from the support of Namuchana Muyawa (Team Assistant) and Musopa Kalenga (Intern).

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Executive Summary

Zambia’s 7th National Development Plan (7NDP) sets ambitious targets for economic growth and poverty reduction. Technology can play an important role as Zambia advances this vision for economic transformation.

Recent evidence tells us that reaching the goal of universal and affordable internet coverage can raise growth per capita by 2 percentage points per year and reduce the poverty headcount by 1 percentage point per year. When internet coverage is complemented by human capital investments, growth per capita increases by approximately 5 percentage points and the poverty headcount falls by 2.5 percentage points per year. These contributions to growth are mainly due to growth in productivity across economic sectors; digital transformation is thus part and parcel of economic transformation.

The introduction of digital systems can also have a transformative effect on government. It is estimated that developing countries could collectively save 0.9 to 1.1 percent of GDP, equivalent to $220 billion to $330 billion annually (IMF 2017), by introducing digital systems in government that increase efficiency and reduce the potential for leakages to occur. Additionally, significant effectiveness gains can be realized by equipping government officials responsible for public service delivery with access to better data and tools.

Improved access to digital technologies and effective use of data and digital systems can thus be powerful tools in the quest to increase private sector productivity, enhance public sector efficiency and effectiveness, and improve the accountability of both the public and private sectors. Indeed, 7NDP includes several digital transformation strategies for these reasons.
This digital economy diagnostic assesses Zambia’s strengths and weaknesses with respect to five pillars that together form the foundation upon which the benefits of digital transformation can be realized. These pillars are Digital Infrastructure, Digital Skills, Digital Entrepreneurship, Digital Platforms, and Digital Financial Services. As discussed in the 2016 World Development Report (World Bank 2016), progress in these areas—combined with “analog complements,” that is, a favorable business environment, strong human capital, and good governance—can enable and accelerate development returns.

This digital economy diagnostic was carried out by a multidisciplinary World Bank Group team in close collaboration with a multiministerial working group, led by the Cabinet Office. More than 100 stakeholders from the public and private sectors were engaged in interviews, focus groups, and workshops to derive, triangulate, and validate the findings.

In summary, this analysis finds that Zambia has made significant strides on its path to digital transformation over the past few years. Progress is particularly evident in digital infrastructure, digital financial services, and digital platforms, while more significant gaps remain in digital skills and digital entrepreneurship.

With respect to digital infrastructure, all provincial centers are now linked to the fiber backbone, and the country has a state-of-the-art data center that can be leveraged for government and commercial use. International benchmarks for affordability of broadband have also been met, and the use of mobile phones has increased significantly, reaching 15.5 million mobile subscriptions in 2019, out of which 63.5 percent use broadband. The digital infrastructure foundation has thus been built to now focus on the use of the infrastructure, as well as on ensuring the reliability and security of the infrastructure that is in place. However, last mile connectivity remains a gap, preventing greater use of digital systems in more sparsely populated areas where access to services and markets is more limited, and where digital systems could help reduce transaction costs associated with serving smaller populations. The cost of connectivity also imposes a barrier to greater citizen and business take-up caused by low income levels, calling for measures to reduce connectivity costs.

Despite these remaining connectivity challenges, the take-up of digital financial services (DFS) has increased significantly since 2016. This illustrates that Zambia does not have to wait to deliver more services via mobile; a two-pronged strategy can be pursued that enables more mobile-based service delivery while steps are taken to promote greater last mile connectivity in secondary towns and rural areas.

With regard to DFS specifically, Zambia has had a strong commitment to financial inclusion over the course of the past several years. The country recognized early on that DFS can make financial inclusion less costly for financial services providers and consumers, and it was among the first set of countries to allow nonbank payment service providers. Access to financial accounts more than doubled from 21 percent in 2011 to 46 percent in 2017, and increased access to mobile money providers has been driving the bulk of this growth since 2016. The private sector clearly sees the provision of DFS as an opportunity; the DFS market now includes 10 banks, 3 mobile network operators, and 5 third-party providers, including financial technology companies. In June 2019, the national payment switch enabled the interoperability of all domestic transactions. This functionality was expected to be available for all point-of-sale and mobile money transactions by the mid-2020. This step would further increase convenience and reduce costs for citizens and businesses.

Substantial progress is also reported to have been made to digitize government salary and pension payments; some gains have been made in government-to-business and government-to-government payments; and early efforts have been made to digitize receipts from businesses and individuals. Early indications are that important results are being achieved: preliminary data from the digitization of government pay slips show that transaction costs decreased by 85 percent and several “ghost” workers were identified and removed. Similarly, when the pension authorities introduced a mobile-enabled module, contributions increased substantially.

These early results demonstrate the promise of greater use of digital payment systems in Zambia. However, several payment systems have just initiated their digitization journey, and most government payments for social cash transfers and subsidies are not yet digitized. Opportunities therefore exist to initiate or expand the digitization of such government payments for the purpose of efficiency gains and increasing the resilience of vulnerable and often unbanked populations (for example, smallholder farmers and social cash recipients). With the advancement of DFS, the need to develop adequate consumer protection measures is also pressing.

Payment systems is only one of several areas in which the Zambian government can—and is—taking steps to use digital tools to increase the efficiency of government services. With respect to digital platforms, the 7NDP sets specific targets for providing government services online, and Zambia is now among the top 10 in the least developed countries category of the E-Government Development Index published by the United Nations. The government has launched internal systems for internal government administration, and government-to-person and government-to-business services are increasingly digitized. However, interoperability between systems is often lacking, thus reducing their benefit to citizens, businesses, and government; usage and usability are not consistently monitored, and some systems suffer from a limited scale of implementation or from deterioration.
Furthermore, the ability to authenticate that people are who they say they are is fundamental to financial and public services delivery. The current identification system has several weaknesses in this regard, and the Zambian government has determined that a biometric national ID system would be the optimal approach for Zambia. Investments in a modernized ID system can result in significant fiscal returns, but it can also involve a significant fiscal outlay, thus requiring careful consideration.

To enable Zambia to make greater use of digital technologies as a transformation tool, individuals, businesses, and government must also have the requisite digital skills. This is an area in which Zambia has made less progress. The 7NDP Implementation Plan aims to have information and communications technologies (ICT) mainstreamed in schools, and the new competency-based national curriculum has made ICT a compulsory subject. In practice, however, most schools are not connected to the internet, they do not have adequate access to devices, and teachers have limited knowledge of how to use ICT in teaching and learning. Furthermore, the quality of general education is of serious concern; for example, fewer than one-third of learners pass their grade 12 examination.

Zambia will not realize the full benefits of digital transformation—nor will it meet its 7NDP goal of facilitating “innovative technologies skills development”—unless it also ensures that learners going through the school system are equipped with foundational numeracy and literacy skills. However, there is still room to better leverage digital tools for teacher training and access to up-to-date educational materials, as well as for education policy planning and monitoring and evaluation. With regard to government capacity in digital skills, important gaps remain to ensure the ability across ministries and government offices to systematically develop, maintain, and use digital systems.

The requisite digital and entrepreneurial skills are also needed to advance digital entrepreneurship: it is digital entrepreneurs who will derive innovative solutions to public and private sector challenges that can be resolved through the application of technology. Zambia has seen an increase in the registration of ICT-related firms between 2016 and 2019, and entrepreneurs are initiating innovative digital solutions in a wide array of sectors, including financial services, education, tourism, and agriculture. Although a handful of entrepreneurs are now delivering solutions at scale, most digital enterprises in Zambia are at the very initial stages of development.

Zambia’s Global Entrepreneurship Index scores in Startup Skills, Technology Absorption, and Risk Capital are very low, and entrepreneurial confidence is declining. Concerns about these four areas were also expressed repeatedly in the consultations for the diagnostic. Zambia is, however, fortunate to have a range of nascent private entrepreneurship initiatives that, coupled with increasing corporate interest, can lend themselves to public-private partnerships that make public funds stretch further. The public-private dialogue during the diagnostic process also indicated recognition of the challenge associated with regulating digital innovation and the importance of engaging in continued dialogue to ensure that regulators provide clarity and strike the difficult balance between enabling innovation and ensuring that citizens are protected.

Surprisingly, a relatively large proportion of start-ups focus on e-commerce. This is remarkable given the significant obstacles to e-commerce in Zambia: only a small proportion of the population has a home address, and goods ordered online can therefore not always be efficiently and reliably delivered to the buyer. Long distances and high logistics costs also affect the viability of both domestic and cross-border trade. Considerable improvements in addressing and logistics will therefore be needed before e-commerce significantly benefits Zambia. The government has recognized this obstacle and has recently embarked on the development of a new national logistics strategy.

All in all, Zambia has made important strides in initiating a digital transformation process, but there is still a long way to go. As was acknowledged by H.E. President Lungu in a speech to the National Assembly in September 2019, Zambia’s fiscal space is limited, and there is a need to “achieve economic stability, sustainable growth and development, within the spirit of ‘doing more with less.’”

The authors recommend that the government of Zambia develop a digital transformation strategy with a dual focus on meeting the 7NDP targets and improving the country’s fiscal space. This recommendation is closely aligned with the “doing more with less” mantra introduced by H.E. President Lungu, and it emphasizes the use of digital technology to improve (1) public sector efficiency and effectiveness, (2) private sector productivity, and (3) accountability across both the public and private sectors.

Against this background, this report suggests that the digital transformation strategy include four strategic themes (figure ES.1): (1) promoting greater use of digital technologies in the economy, (2) reducing government transaction costs and reducing the cost of doing business through digitally optimized government systems, (3) improving the adoption of innovative digital solutions by enabling entrepreneurship, and (4) leveraging data and digital systems to improve sector-specific outcomes in secondary towns and rural areas.

Promoting greater use of digital technologies in the economy. Enhanced broadband usage alone contributes significantly to growth and poverty reduction. Additionally, initiatives undertaken under this theme are foundational to greater adoption of digital technologies by citizens, businesses, and government. The probability of success...
of initiatives launched under the other strategic themes will thus be limited without progress under this theme. Priority activities suggested under this theme include (1) streamlining compliance costs for connectivity providers; (2) strengthening government capacity in cybersecurity, data privacy, and consumer protection; (3) developing a road map and implementation plan for the rollout of digital ID that carefully considers the costs and benefits of the vast array of design options; and (4) partnering with the private sector to map and fill the digital skills needs for government to successfully design and implement priority digital transformation activities.

Reducing government transaction costs and the cost of doing business through digitally optimized government systems. Initiatives undertaken under this theme will have the most immediate and direct budgetary impact while also promoting private sector activity without much additional fiscal outlay. Priority activities suggested under this theme include (1) developing a government-wide implementation approach to advancing and scaling up digitization of major government payment flows (such as social cash, fertilizer subsidies, school fees, taxes, customs, and licenses), and (2) optimizing and scaling up the e-border management, e-licenses, and public e-procurement systems.

Improving adoption of innovative digital solutions by enabling entrepreneurship. Initiatives undertaken under this theme will ensure that the private sector has the capacity to develop innovative solutions to resolve public and private sector challenges. Priority activities suggested under this theme include (1) conducting a regulatory review assessing how tax, labor, and other pertinent regulations affect enterprises at the start-up stage, and developing a regulatory sandbox for digital innovation that provides digital entrepreneurs with a clearer mechanism for navigating regulatory requirements for innovative products and services; and (2) developing a start-up strategy that includes attention to technology entrepreneurship and that leverages the competency and resources of the Ministries of Higher Education and Commerce, Trade and Industry as well as the private sector and the continental entrepreneurship ecosystem.

Leveraging data and digital systems to improve sector-specific outcomes in secondary towns and rural areas. Initiatives undertaken under this theme would focus on the digital transformation of a sector (such as agriculture, education, or health) with the purpose of increasing the effectiveness of public service delivery or increasing productivity and reducing vulnerability. This theme will necessarily draw upon the other three themes, and should be planned spatially to ensure economies of scale and thus increased attractiveness for private sector participation.

While this report provides a suggested prioritization of digital transformation activities, it is recommended that the government create a Digital Transformation Steering Committee to lead the articulation of the digital transformation strategy and implementation matrix. Given that this agenda cannot be achieved by one ministry alone, the committee should have representation from multiple ministries. Relatedly, a dedicated public-private Digital Transformation Advisory Council may be advisable to ensure that the expertise of nongovernmental actors is leveraged in the articulation of the strategy and implementation matrix and to optimize the likelihood that the private sector buys into, and therefore contributes to, implementation.
### PRIORITY DIGITAL TRANSFORMATION ACTIONS

1. **Promote greater use of digital technologies in the economy.**
   - Streamline compliance costs for connectivity providers, and develop a framework for **PPP investments** in last mile connectivity
   - Strengthen the institutional capacity of government to **protect consumers, data, and critical digital infrastructure**
   - Develop a detailed implementation road map for the modernization of the ID system, and implement the same
   - Map **data and skills needs to support evidence-based policy planning**; integrate data collection, accessibility, and analysis into digital government systems planning, and partner with the private sector to implement

2. **Reduce government transaction costs and the cost of doing business through digitally optimized systems**
   - Develop a government-wide implementation approach to **digitize major government payment flows** (social cash, fertilizer subsidies, school fees, tax, customs, and licenses)
   - Optimize and scale the **e-border management, e-licenses, and public e-procurement systems**
   - Enable data sharing and compatibility between core government systems starting with enforcing interoperability standards and publishing the API road map

3. **Improve adoption of innovative solutions by enabling digital entrepreneurship.**
   - Conduct a **regulatory review** related to start-ups and develop a regulatory sandbox for digital innovation
   - Develop a **start-up strategy**, including explicit attention to technology entrepreneurship
   - **Invest in PPPs** to seed and scale up programs that build start-up skills, provide startup financing, and link entrepreneurs to regional markets

4. **Leverage data and digital systems to improve sector-specific outcomes in secondary towns and rural areas**
   - Identify two to three priority **sectors for transformation**, agriculture, education, and health
   - Based on current national strategies derive priority challenges to address, engage the digital entrepreneurship community to identify innovative digital transformation solutions that work, and partner with the private sector to replicate and scale them.
   - **Plan spatially** such that economies of scale are achieved, using an integrated approach that takes into account the connectivity, skills, and systems required

### EXPECTED OUTCOMES

- **Increased Public Sector Efficiency and Effectiveness**
- **Increased Private Sector Productivity**
- **Increased Public and Private Sector Accountability**
- **Reduced Development Inequality**
- **Enhanced Human Development**
- **Diversified Economy**
- **Reduced Poverty and Vulnerability**
- **Conducive Governance**
- **Improved Fiscal Space**

Note: 7NDP = 7th National Development Plan; API = application programming interface; PPP = public-private partnership.

### REFERENCES

