

Digital innovation profile – Republic of Zambia

Digital innovation ecosystem: Strategies and recommendations for accelerating digital transformation



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Strategies and recommendations for
accelerating digital transformation**



Foreword by ITU



Innovation and entrepreneurship are powerful engines of economic growth, driving market dynamism and enabling the creation of competitive industries that enhance quality of life and unlock new opportunities. Zambia fully recognizes the transformative potential of these forces in shaping a sustainable, inclusive, and digitally connected society. Through strategic ICT investments and the implementation of its Smart Specialization Strategy, the country continues to advance toward a fully digitalized economy anchored in research and development.

In alignment with the ITU Regional Initiative for Africa, focused on fostering emerging technologies and innovation ecosystems, this digital innovation profile (DIP) was developed in collaboration with the Zambia Information and Communications Technology Authority (ZICTA). Its aim is to provide a comprehensive assessment of the digital ecosystem of Zambia, evaluating its capacity and maturity to help stakeholders navigate the evolving innovation landscape. The ultimate goal is to support Zambia in building new capabilities for a competitive, sustainable, and ICT-driven economy that accelerates progress toward the national digital vision.

The development of this digital innovation profile was the result of an extensive and inclusive process, involving in-depth research, expert interviews, and collaborative workshops with key stakeholders from government, industry, finance, academia, civil society, and entrepreneurial networks. I extend my sincere gratitude to all national contributors whose insights and engagement were vital to shaping a relevant and actionable profile.

This digital innovation profile is a strategic resource for policy-makers, innovators, and private sector actors. It offers valuable insights into the digital landscape of Zambia, highlights areas for growth, and provides targeted recommendations to guide collective decision-making and investment. I am confident that it will play a pivotal role in advancing the digital transformation of Zambia, and of course ITU remains committed to supporting the next phase of this journey as the country transforms its vision into lasting and meaningful impact.

Dr Cosmas Luckyson Zavazava
Director of the Telecommunication Development Bureau
International Telecommunication Union

Foreword

Zambia currently stands at a pivotal moment in its digital transformation journey. Over the past decade, our country has made commendable strides in expanding access to digital infrastructure, in nurturing entrepreneurial talent, and in creating platforms that support innovation. Initiatives such as the National ICT Policy (2023), the National Digital Transformation Strategy (2023-2027), and the Eighth National Development Plan (2022-2026) reflect our shared vision to harness the power of technology for inclusive and sustainable development. Our progress has not been without challenges. Gaps in connectivity, particularly in rural areas, the affordability of digital services, and limited access to financing continue to constrain the ability of many Zambians, especially youth, women, and small enterprises, to fully participate in the digital economy. We are also confronted with the pressing need to strengthen digital skills, foster a culture of innovation, and ensure coherence and coordination across the multiple stakeholders driving the digital agenda.

Despite these hurdles, the digital innovation ecosystem in Zambia has already yielded success stories that inspire confidence. From vibrant start-ups in fintech, agritech, and e-commerce, to the growing impact of innovation hubs and academic partnerships, these efforts illustrate the immense potential of a youthful and ambitious population ready to shape the future. The central position of Zambia in Southern Africa further enhances our prospects to compete regionally and globally in digital innovation.

It is in this context that the ITU digital innovation profile (DIP) for Zambia assumes great significance. This DIP provides a clear and evidence-based picture of our innovation landscape, and its strengths, gaps, and opportunities. It offers practical recommendations to unlock the potential of the innovation ecosystem, enhance collaboration, and channel innovation towards job creation, economic growth, and societal well-being. More importantly, this DIP aligns with the aspirations of Zambia under the Vision 2030 programme to become a prosperous middle-income nation, and underlines how digital innovation can be a catalyst for achieving these ambitions.

The Zambia Information and Communications Technology Authority (ZICTA) remains committed to working with all stakeholders including government, private sector, academia, development partners, and innovators themselves, to implement the insights of this assessment. By doing so, we can build a more resilient, inclusive, and dynamic digital innovation ecosystem that not only supports entrepreneurship but also strengthens the overall competitiveness of our economy.

I invite all partners and stakeholders to engage with the findings of this report and to join us in driving Zambia's digital transformation forward, ensuring that innovation becomes a cornerstone of our national progression and a pathway to improved livelihoods for all.

Eng. Collins Mbulo
Director General
Zambia Information and Communications Technology Authority (ZICTA)

Digital Innovation Capacity



15+ development and tech indicators reviewed

200+ country-specific resources analysed

Desktop Research



83 ecosystem stakeholders' roles mapped

Stakeholder Identification



37 stakeholders directly engaged in co-creation

Stakeholder Engagement



2,000+ insights generated through workshops

Co-Creation Workshops



34 strategies and recommendations developed

National Stakeholders' Event



Strategic roadmap designed to accelerate innovation

Execution of Recommendations



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1 Introduction

The Republic of Zambia has embarked on a journey under the Eighth National Development Plan 2022-2026 (8NDP) to unlock national potential in critical sectors of the economy for sustainable, holistic and inclusive development. The aim of 8NDP is to reposition the country on the path to achieving the Vision 2030 goal of becoming a prosperous middle-income nation.

Developed by the Ministry of Finance and National Planning in consultation with a wide range of stakeholders, 8NDP is based on four strategic development pillars: economic transformation and job creation, human and social development, environmental sustainability, and good governance environment.

In support of these priorities, Zambia has intensified efforts to strengthen and upscale industry-relevant skills, encourage investment in applied research and development, and enhance digital capacity. A vibrant digital innovation ecosystem will be key to realizing these national ambitions. The performance of the ICT sector and particularly its capacity for innovation, plays a critical role in advancing national development. In 2024, ZICTA, in collaboration with ITU, commissioned this report to gain a better understanding of digital innovation in Zambia, and to develop tailored strategies aimed at accelerating innovation and at strengthening the national innovation ecosystem.

Digital innovation profiles (DIPs) are an important element in the ITU series of snapshots of ICT-centric innovation ecosystems. DIPs provide a diagnostic overview of the digital innovation ecosystem of a country, examining its health and maturity, in order to guide and support strategy development and inform national policies, programmes and initiatives for accelerating digital transformation.

Each profile assesses the current state of the innovation ecosystem, highlighting key opportunities and challenges within the national ICT landscape. The at-a-glance format of the DIP report provides an overview of the capacity of the ecosystem to accelerate digital transformation and integrate innovation across sectors while aligning with national development priorities.

Digital innovation profiles offer a rapid and straightforward means of analysing and optimizing ICT ecosystems. This analysis helps navigation through the fast-moving innovation landscape to enhance the competitiveness of the ICT sector and unlock the potential for a sustainable digital transformation to support the transition of the country to a knowledge-based economy. Continued collaboration with ITU can further focus on targeted interventions, including the implementation of priority, co-developed, investment-ready projects of high value in the national context.

It is important to emphasize that all digital innovation profiles are developed by experts specially trained to apply the ITU Digital Innovation Framework, which involves stakeholder engagement across various stages of the process of developing a DIP. This framework features highly structured workshops and facilitated assessments, designed to build national capacity, enhance on-the-ground skills and collaboratively accelerate digital transformation. The framework process also equips ITU Member States with the tools to assess and monitor their ICT innovation ecosystems and produce evidence-based assessments and concrete recommendations to reshape ecosystem dynamics and advance the country towards digital transformation.

The analysis and findings presented in this report are guided by a clearly defined methodology that emphasizes both rigorous secondary research and a collaborative, ecosystem-driven approach. The process employed in the development of this report included comprehensive desk research and in-depth one-on-one interviews with over 30 local stakeholders from the public sector, private sector, financial institutions, academia, entrepreneurs, and entrepreneurial support networks. Stakeholders were carefully selected in collaboration with the national partner agency to ensure a broad and relevant range of perspectives. The report also integrates insights gathered through group engagements and interactive sessions held throughout the process in 2024, including a co-creation workshop to assess the innovation ecosystem and develop recommendations, and a stakeholder forum to gather feedback and validate the findings prior to the finalization of the report in 2025.

For further details on the methodology employed, please refer to Appendix 3.

2 Background and context

Key indicators	
Population [2024]: 20.57 million	ITU Digital Development Index [2025]: <ul style="list-style-type: none"> Individuals using the Internet: 33% Households with Internet access at home: 56.6% Mobile broadband subscriptions per 100 inhabitants: 60 Population coverage by at least 4G mobile networks: 91.2% Fixed broadband basket as a % of GNI p.c.: 12.6% Individuals owning a mobile phone: 62.8%
Population density: 28 people km ²	ICT Development Index score [2025]: 60.3/100
GNI per capita, PPP: USD 3 219	Global Innovation Index score [2025]: 112/139
Region: Southern Africa	Global Gender Gap Index rank [2025]: 79/146
	Human Development Index [2025]: 193/193

Zambia is a landlocked country situated in south-central Africa and shares its borders with eight countries: the Democratic Republic of the Congo to the north, the United Republic of Tanzania to the northeast, Malawi to the east, the Republic of Mozambique to the southeast, the Republic of Zimbabwe and the Republic of Botswana to the south, the Republic of Namibia to the southwest, and the Republic of Angola to the west. With a population exceeding 20 million, Zambia is culturally diverse. English is the official language, complemented by a diversity of local languages such as Bemba, Nyanja, Tonga and Lozi. Since gaining independence from British colonial rule in 1964, the country has navigated a complex development path marked by both progress and persistent challenges. According to the World Bank's income classifications for the fiscal year 2025, Zambia is categorized as a lower-middle-income country.¹

In recent years, Zambia has made notable progress in education, with an adult literacy rate of 81.55 per cent reported in 2023.² This progress has contributed positively to the labour market, with the unemployment rate estimated at 5.91 per cent in the same year.³ These indicators reflect national ongoing efforts to strengthen human capital, reduce unemployment, and improve overall living standards in pursuit of sustainable and inclusive development.

In support of development goals, the Ministry of Education launched the 2022-2026 Strategic Plan aimed at developing "an educated and skilled nation". Closely aligned with the Eighth National Development Plan (8NDP), the strategic plan places strong emphasis on human and social development. It prioritizes expanding access to quality education, promoting inclusivity, and integrating information and communication technology (ICT) into teaching and learning processes. However, challenges such as limited resources and infrastructure disparities between urban and rural areas have posed challenges to consistent implementation.⁴ In response, the

¹ World Bank, 2024. *World Bank Country and Lending Group*. [online] Available at: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

² UNDP, 2023. 2023 Annual Report Empowering Zambia's Development Progress. [online] Available at: https://www.undp.org/sites/g/files/zskgke326/files/2024-07/2023_annual_report_undp_zambia_0.pdf

³ Macrotrends, 2024. *Zambia Unemployment Rate 1991-2024*. [online] Available at: <https://www.macrotrends.net/global-metrics/countries/ZMB/zambia/unemployment-rate>

⁴ PMRC, 2020. *Implementation Status and Challenges of ICTs In Zambian Schools*. [online] Available at: <https://pmrczambia.com/implementation-status-and-challenges-of-icts-in-zambian-schools-research-report/>

Government of Zambia is investing in ICT infrastructure, providing digital learning resources, and rolling out capacity-building programmes to help educators integrate technology effectively into classroom practice.

In 2023, agriculture accounted for 2.23 per cent of gross domestic product (GDP), while industry contributed approximately 35.11 per cent, and the services sector represented about 56.82 per cent.⁵ Despite its modest share, agriculture remains a key source of livelihood for a significant portion of the population. However, high poverty levels persist, with an estimated 64.3 per cent of Zambians living below the international poverty threshold of USD 2.15 per day in 2023.⁶

Economic growth has fluctuated in recent years. Real GDP increased from 5.2 per cent in 2022 to 5.8 per cent in 2023,⁷ propelled by growth in the wholesale and retail trade, agriculture, and mining sectors. However, a severe drought in the 2023/24 rainy season has since adversely affected agricultural production and electricity generation, leading to a deceleration in growth to 2.5 per cent in the third quarter of 2024.⁸ In response, the government has prioritized economic stabilization and growth, focusing on debt restructuring and fiscal reforms. In June 2024, the International Monetary Fund (IMF) approved a USD 569.6 million disbursement to support economic reforms and drought response efforts in Zambia.⁹ Despite these interventions, key structural challenges remain prevalent. These challenges include addressing widespread poverty and inequality, reducing dependency on copper exports through economic diversification, and improving infrastructure. Strengthening human capital through investments in healthcare and education is also vital to support long-term development.

The private sector plays a pivotal role in the Zambian economy, with micro, small, and medium enterprises (MSMEs) making up approximately 97 per cent of all businesses and contributing about 70 per cent of GDP. These MSMEs are vital for job creation, employing about 88 per cent of the workforce nationwide.¹⁰ Recognizing their significance, the government has introduced a range of support measures, including the establishment of the Ministry of Small and Medium Enterprise Development, tasked with promoting the growth of SMEs and cooperatives. Financial incentives such as tax holidays and reduced tax rates have also been introduced to stimulate entrepreneurship and foster inclusive economic growth. Despite these efforts, MSMEs continue to face significant barriers to development, chief among these being limited access to finance. A 2022 survey conducted by the Bank of Zambia highlighted financial constraints as a significant barrier to SME expansion and innovation.¹¹ Other obstacles encountered by SMEs include inadequate infrastructure, regulatory complexities, and limited access to business development and support services.

⁵ Statista, 2024. *Zambia: Share of economic sectors in the gross domestic product (GDP) from 2012 to 2022*. [online] Available at: <https://www.statista.com/statistics/457737/share-of-economic-sectors-in-the-gdp-in-zambia/>

⁶ World Bank, 2023. *Zambia*. [online] Available at: <https://thedocs.worldbank.org/en/doc/bae48ff2fefe5a869546775b3f010735-0500062021/related/mpo-zmb.pdf>

⁷ Africa Development Banks Group, 2024. *Zambia Economic Outlook*. [online] Available at: <https://www.afdb.org/en/countries-southern-africa-republic-zambia/zambia-economic-outlook>

⁸ Zambia Statistics Agency, 2024. *Economy Expands by 2.5%*. [online] Available at: <https://www.zamstats.gov.zm/economy-expands-by-2-5/>

⁹ Reuter, 2024. *IMF approves \$570 mln Zambia payout, increases loan to \$1.7 bln*. [online] Available at: <https://www.reuters.com/world/africa/imf-approves-570-mln-zambia-payout-increases-loan-17-bln-2024-06-26/>

¹⁰ Lusakatimes.com, 2024. *SMEs contribute 70% to GDP-Mubanga*. [online] Available at: <https://www.lusakatimes.com/2022/11/09/smes-contribute-70-to-gdp-mubanga/>

¹¹ Bank of Zambia, 2022. *2022 Micro Small and Medium Enterprise Finance Survey Report*. [online] Available at: https://www.boz.zm/sites/default/files/2026-03/2022_MSME_Finance_Survey_Report.pdf

Meanwhile, the telecommunication sector has undergone substantial reform since the enactment of the Information and Communications Act in 2009 and the partial privatization of the sole state-owned telecommunication company, the Zambia Telecommunications Company Ltd (Zamtel).¹² The market is now liberalized, fostering increased competition and service provision. According to ZICTA, the number of Internet subscriptions increased to 12.6 million in 2023 up from 11.1 million in 2020.¹³ Mobile networks are the predominant means of Internet access, with over 99 per cent of users relying on mobile connections due to their affordability compared to fixed-line services. Despite increased access, connectivity remains uneven and Internet speeds are relatively modest. Median mobile download speeds stood at 24.86 Mbit/s, and fixed broadband at 26.58 Mbit/s as of early 2024.¹⁴ Infrastructural limitations, data quality issues, and disparities in service provision between urban and rural areas continue to impede the full potential of the sector. Addressing these gaps will be essential for enabling broader digital inclusion and supporting the development aspirations of the country.

These efforts come at a time when Zambia is striving to improve its position in the global innovation landscape. In the 2025 Global Innovation Index published by the World Intellectual Property Organization (WIPO), Zambia ranked 112th globally,¹⁵ highlighting the need for continued investment in innovation and digital capacity. In the third quarter of 2023, the ICT sector accounted for 2.6 per cent of GDP,¹⁶ underscoring its growing importance in the economic transformation of Zambia.

At the same time, the country has demonstrated a strong commitment to digital transformation. Guided by the National Information and Communication Technology Policy (2023) and the National Digital Transformation Strategy (2023-2027), Zambia is laying the groundwork to narrow the digital divide and strengthen its digital ecosystem.¹⁷ These frameworks seek to foster inclusive growth by encouraging public and private sector collaboration, boosting investment in ICT infrastructure, and equipping citizens with essential digital skills.

The digital agenda of the government sets out ambitious objectives including expanding access to digital services across all economic sectors, integrating emerging technologies, and positioning Zambia as a competitive participant in the global digital economy. In 2023, the government raised approximately USD 58 million in investments in the ICT sector,¹⁸ with a focus on infrastructure development and including the removal of outdated 2G network towers, in order to enhance connectivity and prepare the country for next-generation digital services.

¹² Zambia Invest, 2024. *Telecoms*. [online] Available at: <https://www.zambiainvest.com/telecoms/>

¹³ ZICTA, 2024. *ICT Sector Continued on Positive Growth Trajectory in 2023*. [online] Available at: <https://www.zicta.zm:448/api/download-document/press-release-market-report-2023pdf-3>

¹⁴ DATAPORTAL, 2024. *Digital 2024: Zambia*. [online] Available at: <https://datareportal.com/reports/digital-2024-zambia>

¹⁵ WIPO, 2024. *Zambia ranking in the Global Innovation Index 2024*. [online] Available at: <https://www.wipo.int/gii-ranking/en/zambia>

¹⁶ Lusakatimes.com, 2024. *ICT Sector Contributed 2.6% to the Country's GDP In 2023*. [online] Available at: <https://www.lusakatimes.com/2024/05/18/ict-sector-contributed-2-6-to-the-countrys-gdp-in-2023/>

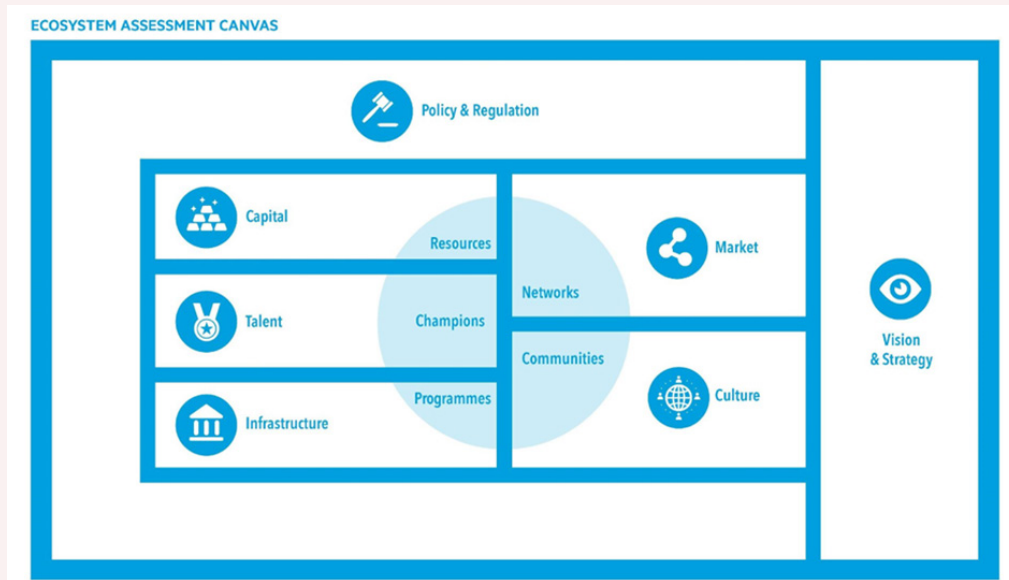
¹⁷ Ministry of Technology and Science, 2022. *The National ICT Policy 2023*. [online] Available at: <https://www.mots.gov.zm/wp-content/uploads/2023/10/National-ICT-Policy-2023.pdf>

¹⁸ Itweb, 2024. *Zambia reports massive investment in ICT sector*. [online] Available at: <https://itweb.africa/content/WnxE74YRaVMV8XL>

3 Current landscape

Understanding the ecosystem assessment canvas

Figure 1: Ecosystem assessment canvas



Source: ITU

The ecosystem assessment canvas gives an overview of the seven components that make up the innovation ecosystem. It helps assess both the challenges and opportunities for the components essential to building a vibrant and innovative digital ecosystem.

Figure 2: Ecosystem assessment canvas and related issues

PILLARS	Vision & Strategy	Capital	Market	Infrastructure	Talent	Culture	Policy
SCOPE AND OBJECTIVES	Scope and objectives	Appropriate Demand side resources	Integration of economic sectors	Inclusive digital infrastructure	Talent appropriateness	Sustainable culture of entrepreneurship and innovation	Comprehensive and grassroots innovation policies & programs
ISSUES	Aligned Digital strategies	Continuum of Supply side resources	Market access domestic and international	Resilient & secure broadband Infrastructure Soft infrastructure	Champions	Communities	Legal frameworks

Source: ITU

Building on the ecosystem assessment canvas, Figure 2 presents the main components of an enabling environment that, if achieved, can accelerate digital transformation in the economy.

Innovation and entrepreneurship ecosystems are shaped by a number of interdependent components that influence how effectively a country can pursue its digital transformation goals and accelerate innovation. The seven pillars, and their related components, reflect key dimensions, ranging from infrastructure and talent to policy and culture, that collectively determine how innovation and entrepreneurship are nurtured, supported, and sustained. Assessment of these seven pillars provides a structured view of the ecosystem, helping to identify both enablers and gaps that affect its overall maturity and performance.

By understanding and assessing the ecosystem, the enablers needed to achieve the vision can be identified. Since each pillar is one part of a whole, and the effective functioning of each pillar is needed for successful innovation activities, the combined performance of the pillars can be considered as a measure of the overall ecosystem efficiency.

The following sections provide insights into the current ecosystem landscape across these pillars, based on expert interviews and group discussions during co-creation workshops with local stakeholders, and further validated by secondary research and literature reviews. Each pillar and its key components are initially summarized in bullet points, followed by a detailed explanatory passage.

3.1 Vision and strategy

- *Zambia has developed numerous national strategy documents, including the Vision 2030 programme, supporting digital transformation. However, there is a need for a unified approach to streamline efforts and reduce fragmented and uncoordinated implementation for maximum collective impact.*
- *While stakeholders focus on different priority areas, there is broad agreement on key issues and the need for enhanced collaboration to address them.*
- *Stakeholders in the ecosystem are actively engaged and clearly understand their missions and objectives. However, fostering closer collaboration and better alignment of roles would amplify the effectiveness of their efforts.*
- *Many stakeholders are already contributing towards the national vision. However, clearly defining shared roles would empower all participants to work together more effectively, driving digital innovation forward.*

Need for one vision

Zambia has developed a range of strategic documents to strengthen digital innovation and the ICT ecosystem. Among the most prominent are the National ICT Policy (2023), the Smart Zambia Electronic Government Master Plan (2018-2030), the Eighth National Development Plan 2022-2026 (8NDP), and the National Digital Transformation Strategy (2023-2027). These efforts align with Vision 2030, which aims to transform Zambia into a prosperous middle-income country by focusing on investments in human capital, infrastructure development, and economic diversification.¹⁹ Within this overarching vision, the 8NDP identifies digital transformation as a key enabler of socio-economic progress.²⁰

A number of institutions are involved in driving this digital agenda. The Ministry of Technology and Science plays a central role, supported by the Smart Zambia Institute, which leads efforts in e-government and ICT advancement. The Smart Zambia Institute also works in close collaboration with other government ministries, the private sector, and international partners, while the Ministry of Finance and National Planning is responsible for aligning ICT-related initiatives with broader development priorities and ensuring effective resource allocation.

¹⁹ Republic of Zambia, 2006. *Vision 2030*. [online] Available at: https://www.nor.gov.zm/?wpfb_dl=44

²⁰ Republic of Zambia, 2022. *The Eighth National Development Plan 2022 - 2026*. [online] Available at: <http://www.zda.org.zm/wp-content/uploads/2022/09/8th-NDP-2022-2026.pdf>

Each of the strategies developed in these strategic documents contributes in a specific way to the national digital vision. The National ICT Policy provides a broad framework for digital development, while the Smart Zambia Master Plan outlines actionable targets such as expanding e-government services, enhancing ICT infrastructure, and fostering innovation.²¹ The National Digital Transformation Strategy, on the other hand, sets priorities for integrating digital technologies across sectors and industries. It aims to transform the nation into a digitally empowered, knowledge-based economy by bridging the digital divide and leveraging technology for sustainable development. The strategy is built on five pillars: expanding digital infrastructure to ensure nationwide access; developing integrated digital platforms to enhance government and private sector efficiency; digitizing essential services in healthcare, education, agriculture, and finance to improve accessibility; promoting digital literacy and skills through education and training; and fostering a vibrant ecosystem for digital innovation and entrepreneurship to spur economic growth. The overarching goal is to use digital technology to increase productivity, create jobs, and improve the quality of life for all citizens. Collectively, these frameworks aim to accelerate digital transformation, improve public service delivery, stimulate economic growth, and strengthen civic engagement.

Tangible progress has been made in certain areas. The government services bus (GSB), for instance, has redefined how citizens access public services through digital platforms. Acting as a national integration layer, the GSB connects multiple government ministries, departments, and agencies. Under the management of the Electronic Government Division (Smart Zambia Institute), ZamPortal has emerged as the primary digital gateway for accessing government services online. Currently offering 322 public services, the platform has improved both convenience and efficiency in public service delivery by streamlining application processes and enabling seamless citizen-government interaction.²²

Despite these advances, a number of challenges persist. A significant portion of the population remains excluded from digital services due to both limited Internet coverage and the high cost of digital devices. At the strategic level, stakeholders continue to face uncertainty around a unified digital vision, often stemming from overlapping mandates and ambiguities in policy ownership and leadership. Furthermore, as many of the guiding policies are relatively recent, they have yet to yield consistent, measurable outcomes. Weak coordination among stakeholders further hampers implementation, leading to fragmented efforts that dilute the impact of the digital transformation ambitions of Zambia.

Agreement on issues

Various stakeholders identify common issues within the digital innovation ecosystem. Despite increasing access to technology, including mobile phones and computers, many Zambians still face barriers to obtaining these devices, and to accessing reliable Internet connectivity and essential digital tools and applications. This disparity has created a clear skills gap, underscoring the urgent need for training in fundamental computer skills, online safety, and responsible digital citizenship. Key stakeholders, such as the Internet Society Zambia Chapter (ISOC), have

²¹ Republic of Zambia, 2018. SMART ZAMBIA ELECTRONIC GOVERNMENT MASTER PLAN 2018 - 2030. [online] Available at: https://www.szi.gov.zm/wp-content/uploads/2022/01/eGOVERNMENT_Masterplan_v3_0.pdf

²² Zamportal, 2024. *Director Sibulowa Introduces the GSB*. [online] Available at: <https://zamportal.gov.zm/director-sibulowa-introduces-the-gsb/>

emphasized the importance of incorporating digital literacy into school curricula to ensure students have the necessary skills to navigate and thrive in an increasingly digital world.²³

Public and private sector stakeholders also agree that there are too few professionals that have the technical and digital expertise required to drive innovation. The higher education system has yet to fully incorporate ICT and digital skills training into the curriculum, further contributing to this shortage. Inadequate ICT infrastructure and Internet affordability remain concerns for all, particularly in rural areas where access to reliable Internet and electricity is limited and this continues to constrain the reach of digital services and the development of ICT solutions in the country.

Another widely recognized challenge is the limited availability of capital and funding for innovation. This limitation not only affects business growth and sustainability but also restricts academic research, thereby impeding the broader development of the innovation ecosystem and its contribution to economic growth.

Despite general consensus on these issues, differing views on priorities and how resources are allocated have also led to disagreements among stakeholders. While some advocate for immediate investment in infrastructure, others view skills development as the necessary starting point. Improved communication and coordination among actors could help clarify respective roles and support the achievement of common objectives.

Efforts are already underway to enhance collaboration. Multi-stakeholder forums have been introduced by organizations such as the Smart Zambia Institute and ZICTA to encourage dialogue and coordination. These platforms aim to align the efforts of diverse actors across sectors. Stakeholders acknowledge that stronger communication channels and improved coordination mechanisms are vital to advancing a shared vision and accelerating the growth of the digital innovation ecosystem.

Ecosystem stakeholder coordination

Stakeholders across Zambia's digital innovation ecosystem generally demonstrate a clear understanding of their respective roles, with many actively engaged in productive collaborations. The Ministry of Technology and Science plays a central role in this landscape by facilitating networks, building partnerships, and supporting key sectors such as telecommunications, education, and infrastructure development, ultimately driving the national digital transformation agenda forward.

In the financial sector, institutions such as the pan-African ABSA bank have formed strategic partnerships to deliver seamless and innovative digital banking services.²⁴ Similarly, private sector advocacy organizations such as the Zambia Chamber of Commerce and Industry work to shape policies that foster a business-friendly ICT environment.

Innovation hubs also play a vital role in nurturing the ecosystem. BongoHive, for example, has provided support for nearly 1 300 start-ups and MSMEs, mobilizing over USD 2 million

²³ Zambia Monitor, 2024. *Zambia's quest for digital literacy: Challenges and prospects*, by Hannet Mwimbe. [online] Available at: <https://www.zambiamonitor.com/zambias-quest-for-digital-literacy-challenges-and-prospects-by-hannet-mwimbe/>

²⁴ ABSA Bank, 2024. *Absa to Enhance Digitally Powered Financial Solutions in Africa*. [online] Available at: <https://www.absa.africa/media-centre/media-statements/2024/absa-to-enhance-digitally-powered-financial-solutions-in-africa/>

in resources since 2016 to support their growth²⁵. Similarly, the ICT regulator, ZICTA, also coordinates an Innovation Programme that has benefited over 500 start-ups and innovators. These innovation hubs serve as essential bridges between entrepreneurs, investors, and corporate partners through various events and activities such as pitch nights, demo days, and hackathons, and create valuable opportunities for collaboration, investment, and idea exchange.

A notable example of successful partnership is the collaboration between Airtel Networks Zambia and Infratel, which jointly hosted an ICT boot camp aimed at reducing the gender gap in the technology sector. This initiative inspired and empowered young girls to explore careers in telecommunications and ICT. Senior Airtel staff welcomed 50 girls from various Lusaka schools, offered insights into the industry and encouraged them to pursue future opportunities in this dynamic field. The boot camp reflects the broader commitment of Airtel to nurturing young talent and building the next generation of female leaders in ICT.²⁶

Despite these encouraging developments, some companies continue to operate in silos, which limits the collective impact of their efforts. This fragmentation may stem from a lack of trust when collaborating. Among entrepreneurs, in particular, there is a reluctance to share ideas due to fear of intellectual property theft, an issue sometimes reinforced by prevailing cultural norms. Nevertheless, there is growing recognition across the ecosystem of the value of collaboration. Many actors now actively advocate for enhanced communication and coordination, understanding that stronger partnerships are essential to overcoming challenges and unlocking the full potential of the digital innovation ecosystem in Zambia.

Support for shared national vision

Stakeholders demonstrate varying levels of alignment with the national vision, strategies, and development plans. While many initiatives are broadly consistent with the objectives outlined in Vision 2030 and the National Digital Transformation Policy, not all efforts are directly linked to these frameworks. Government agencies and support networks for businesses appear to be the most closely aligned, often viewing their work as integral to advancing national development goals.

Several stakeholders report having actively participated in public consultations and policy formulation processes, including those related to the new Artificial Intelligence Strategy and the Start-up Bill, currently being finalized by the Ministry of Technology and Science. These policies are expected to promote start-up development and support the integration of ICT solutions across sectors. Their adoption would also signal the commitment of the government to strengthening research, innovation, and digital entrepreneurship.

Despite these positive developments, some stakeholders remain uncertain about how best to contribute to the national vision. This uncertainty is partly attributed to the absence of a clear communication strategy and campaign to bring stakeholders together around a common goal, even though several strategies for digital development are already in place. While institutions such as the Ministry of Technology and Science and ZICTA are recognized for leading efforts in innovation and digitization, the ecosystem would benefit from the designation of a clear

²⁵ PodBean, 2022. *BongoHive: Building the Zambian Tech Sector for the Ground Up*. [online] Available at: <https://aidevolved.podbean.com/e/bongohive/>

²⁶ Extensia, 2024. *Airtel Zambia Partners with Infratel to Bridge Gender Gap in ICT*. [online] Available at: <https://extensia.tech/airtel-zambia-partners-with-infratel-to-bridge-gender-gap-in-ict/>

institutional leader to coordinate and align various initiatives under a cohesive national innovation ecosystem agenda.

To address these challenges, stakeholders recommend strengthening communication channels to ensure broader awareness and understanding of national strategies and the roles different actors are expected to play. They also emphasize the importance of increased investment in capacity-building programmes, which would equip organizations with the tools and knowledge needed for meaningful participation. Additionally, establishing regular forums for dialogue, along with mechanisms to monitor progress, is seen as key to improving coordination, reinforcing accountability, and sustaining commitment to a shared national vision.

3.2 Infrastructure and programmes

- *Recent investments have improved ICT infrastructure, particularly in Lusaka, with notable benefits for businesses, organizations, and citizens. However, rural areas continue to face significant challenges in connectivity and access to reliable infrastructure, despite ongoing efforts to address these issues.*
- *Several innovation hubs and support programmes are available, primarily located in Lusaka. While these initiatives provide valuable services, many lack the sustainable and integrated support to nurture and scale innovation nationwide.*
- *Most hard and soft infrastructure is concentrated in Lusaka and the Copperbelt region. Efforts to expand to other parts of the country have been slow, restricting the ability of the rural population to engage in ICT innovation and entrepreneurship.*
- *Equipment is accessible within the ecosystem, mainly through international vendors. However, smaller enterprises often struggle to afford digitization and ICT investment, which limits their ability to innovate and grow.*
- *Stakeholders believe Zambia has the potential to compete in Southern Africa. However, gaps in infrastructure, skills, and funding within the innovation ecosystem are hindering its ability to achieve full competitiveness.*

Hard/ICT infrastructure

Zambia has made tangible progress in developing hard ICT infrastructure, yielding benefits for both businesses and citizens. Mobile connectivity continues to expand, with 2G, 3G, and 4G networks now covering the majority of the population. As of October 2025, there were approximately 7.29 million Internet users, representing an Internet penetration rate of 33 per cent.²⁷ Fixed broadband access remains limited but is gradually improving, driven by providers such as Zamtel and Liquid Intelligent Technologies, which are actively expanding fibre-optic networks in urban centres. In parallel, the Universal Access Services Fund under ZICTA has played a key role in extending low-cost broadband services to public universities, colleges, schools, and research institutions.²⁸

The private sector has also contributed significantly to infrastructure development. Huawei, for instance, has been a long-standing partner in the digital ecosystem of Zambia. Over the past decade, it has supported the implementation of the Smart Zambia ICT Master Development

²⁷ Digital 2026: Zambia – DataReportal – Global Digital Insights (2025) *DataReportal – Global Digital Insights, DataReportal – Global Digital Insights*. Available at: <https://datareportal.com/reports/digital-2026-zambia> (Accessed: 10 March 2026).

²⁸ ZICTA, 2024. *Empowering Education: The Broadband Connectivity Program*. [online] Available at: <https://www.zicta.zm/media/projects/65128ee52d12ffb5c2c3d699>

Plan, deployed more than 1 000 telecommunication towers, commissioned the first data centre in the country, and collaborated with MTN Zambia to launch a 5G network.²⁹ In a joint effort by the government and private sector, 520 new communication towers are currently under construction, with the goal of achieving 96 per cent mobile cellular coverage by 2026.³⁰

In line with the Data Protection Act, which mandates strict data localization requirements, several data centres and cloud infrastructures have been established to meet present and future data storage needs. For example, Paratus has built a state-of-the-art data centre and provides locally hosted cloud solutions aligned with international standards.³¹ However, stakeholders report that local data storage remains expensive for many firms, posing a barrier to broader adoption.

Meanwhile, energy infrastructure remains a critical enabler for ICT operations. With hydropower accounting for 80 per cent of electricity generation, the country has been severely affected by drought, resulting in widespread blackouts which have been some of the worst in recent history.³² Frequent power outages pose a significant risk to businesses and ICT-related activities. In addition, while road infrastructure is considered adequate in urban areas, further investment is needed nationwide. The government is currently pursuing plans to construct up to 10 000 km of high-quality single- and dual-carriage roads to support national connectivity.³³

Overall, innovation ecosystem stakeholders note improvements in the availability and quality of infrastructure. However, progress has been uneven, with rural areas continuing to face considerable access challenges. Although current infrastructure supports key services such as e-commerce, digital banking, and online education, it falls short for more demanding applications such as advanced cloud computing and large-scale data analytics due to limited data centre capacity and inconsistent Internet speeds. Several projects are underway to address these shortcomings. The upcoming Zambia National Data Centre in Lusaka is expected to offer a centralized platform for government and business data services. It will also serve as an innovation hub within the Lusaka South Multi-Facility Economic Zone. Furthermore, Zambia has secured funding of USD 120 million from the World Bank's Digital Development Partnership to continue with the implementation of its digital public infrastructure (DPI) agenda.³⁴

Soft infrastructure and programmes to support innovators

Soft infrastructure refers to the systems, institutions, and services that provide non-physical support to entrepreneurs, such as training, mentoring, incubation facilities, and access to networks. In the innovation ecosystem of Zambia, soft infrastructure plays a critical role in building skills, nurturing start-ups, and fostering collaboration across sectors.

²⁹ XINHUANET.com, 2024. *China's Huawei upbeat on Zambia's digital transformation*. [online] Available at: <https://english.news.cn/20220407/185de5fedc294f47b0982cf67d901fce/c.html>

³⁰ Techpoint.africa, 2024. *The Zambian government and private sector to construct 520 communication towers*. [online] Available at: <https://techpoint.africa/2024/06/28/zambia-private-sector-construct-communication-towers/>

³¹ Paratus, 2024. *Paratus Zambia's Data Center Unlocks Opportunities with Secure Data Localization*. [online] Available at: <https://paratus.africa/zambia/paratus-zambias-data-center-unlocks-opportunities-with-secure-data-localization/>

³² Hydro Review, 2024. *Drought is parching the world's largest man-made lake, stripping Zambia of its electricity*. [online] Available at: <https://www.hydroreview.com/environmental/drought-is-parching-the-worlds-largest-man-made-lake-stripping-zambia-of-its-electricity/>

³³ International Trade Administration, 2024. *Zambia - Country Commercial Guide*. [online] Available at: <https://www.trade.gov/country-commercial-guides/zambia-infrastructure-development>

³⁴ BiometricUpdate.com, 2025. *Zambia obtains World Bank funding support to advance DPI implementation*. [online] Available at: <https://www.biometricupdate.com/202503/zambia-obtains-world-bank-funding-support-to-advance-dpi-implementation>

The innovation ecosystem benefits from various tech hubs, training centres, and incubator spaces. Prominent and well-recognized providers include BongoHive, Jacaranda Hub, Impact Hub Lusaka, and the Women's Entrepreneurship Access Centre (WEAC). These institutions offer diverse programmes, workshops, and events to support start-ups and entrepreneurs, enhance skills, accelerate growth, and foster strong networks. In addition, the Mukuba University Innovation Pod (Unipod) is the first ever dedicated space in Zambia that combines expertise from academia while providing young innovators with state-of-the-art and modern equipment and advanced software for their ideation and prototyping.³⁵ BongoHive provides a range of initiatives, including the Standard Chartered Women in Tech programme, which supports female-led technology businesses. Jacaranda Hub runs the BoostUP 2024 Accelerator, a three-month hybrid programme for the supply chain and service industry in Zambia. Impact Hub Lusaka offers various capacity-building programmes for start-ups and established entrepreneurs, while the WEAC centre supports female entrepreneurs through the WEAC Start-up Academy, which provides business training, the WEAC Business Incubation Programme for idea validation, and the WEAC Mentorship and Coaching Programme to support women at different business stages. WEAC also organizes the Zambia Entrepreneurship Summit to connect female entrepreneurs with investors. WEAC has launched close to 680 start-ups through its incubation programmes, successfully graduated over 216 into growth acceleration, and linked over 350 businesses to early-stage and late-stage funding. Thus far, at least 6 700 entrepreneurs have accessed WEAC programmes, which range from training, business development services, market accelerators, and events, to mentoring, and funding tours.³⁶ Additionally, the Anakazi Centre supports women entrepreneurs through training, mentorship, and advocacy for equal participation in the digital economy. By fostering a network of empowered female leaders, the Anakazi Centre helps to bridge the gender gap within the ICT sector.

Public sector organizations such as the National Technology Business Centre (NTBC) focus on technology-driven entrepreneurship by offering Technology and Business Incubation Programmes for early-stage start-ups, as well as a Technology Business Development Fund (TBDF) that funds technology-based innovations to develop sustainable, eco-inclusive enterprises. The ICT Authority (ZICTA) provides a platform for young innovators to develop their nascent tech-related ideas or business proposals into tangible and impactful ventures through business and technical development support, soft skills training, mentorship, and coaching facilities as well as funding opportunities for promising local entrepreneurs.

These organizations have gained popularity among local innovators by providing essential resources, mentorship, and networking opportunities. The existing soft infrastructure has positively impacted the innovation ecosystem by improving skills development, supporting start-up growth, and encouraging collaboration. However, despite these advancements, challenges persist.

Stakeholders report that greater collaboration and knowledge sharing among support networks is needed. Gaps still exist in scale-up support, and the quality of programmes is not consistently regulated or monitored. This lack of oversight can result in overlapping initiatives and inefficient use of scarce resources. Soft infrastructure is also unevenly distributed across the country, and there is a need for innovation hubs to support entrepreneurs nationwide. Additionally, universities could play a more active role in supporting start-ups. Students and graduates should

³⁵ Mukuba Unipod, 2024. *Who we are*. [online] Available at: <https://www.cbu.ac.zm/schoolsAndUnits/cbuunipod/test/>

³⁶ WEAC, 2024. *Our Journey*. [online] Available at: <https://weaczambia.org/about-us/>

be encouraged to view entrepreneurship as a viable career path to boost the ecosystem. The Mukuba University Innovation Pod (UniPod) is therefore viewed as a positive step forward for the innovation ecosystem.

Several initiatives are underway to enhance soft infrastructure in the country. For instance, the government is finalizing a Start-up Bill to establish a framework that fosters growth and sustainable technological development. In January 2025, the UNDP, in partnership with the Africa Innovation Foundation and the National Institute for Scientific and Industrial Research (NISIR), launched the Timbuktoo MineTech Accelerator Programme, a transformative initiative of the Timbuktoo MineTech Hub designed to drive innovation in mining technology, empower start-ups, and scale transformative technologies in the African mining sector. This facility will explore advanced mining technologies and provide technical expertise to assist the mining sector in achieving its target of producing three million tonnes of copper within 10 years.³⁷

Infrastructure distribution across Zambia

Despite increasing efforts, investments and initiatives, the distribution of soft and hard infrastructure in Zambia continues to lean significantly more towards urban centres, and this is particularly so in cities such as Lusaka and the Copperbelt region. This urban-centric development pattern has resulted in pronounced disparities in access to essential services between urban and rural populations.

In rural areas, inadequate infrastructure continues to limit access to electricity, Internet services, and ICT tools, constraining educational and economic opportunities. With the rural population estimated at 53.66 per cent of overall population in 2023, more than half of the citizens risk being left behind by the digital transformation.³⁸ This imbalance poses a significant barrier to inclusive development, particularly for rural entrepreneurs whose potential to contribute to the innovation ecosystem is hindered by limited access to enabling infrastructure. Even where connectivity exists, low levels of digital literacy compound the challenge. For example, in 2022, only 11.5 per cent of individuals in Zambia were able to use a desktop computer.³⁹ This highlights the importance of not only expanding infrastructure but also of ensuring that individuals have the skills required to use digital tools effectively.

Recognizing these disparities, stakeholders have initiated efforts to bridge the digital divide. The National ICT Policy 2023 places strong emphasis on expanding ICT infrastructure in underserved regions while promoting digital literacy across the country. In parallel, the United Nations Country Team in Zambia is advancing digital inclusion as part of its broader development efforts. By focusing on digitization to improve citizen participation and enhance access to services and job opportunities for marginalized groups, these initiatives aim to build a more equitable and inclusive digital economy.⁴⁰ Together, these efforts reflect a growing understanding that

³⁷ Ministry of Technology and Science, 2024. *UNDP TIMBUKTOO INITIATIVE LAUNCH OF ZAMBIA'S MINE-TECH HUB, SET FOR CONSTRUCTION*. [online] Available at: <https://www.mots.gov.zm/?p=4613#:~:text=The%20Ministry%20of%20Technology%20and%20innovators%20to%20mobilise%20venture>

³⁸ Trading Economics, 2024. *Zambia - Rural Population*. [online] Available at: [https://tradingeconomics.com/zambia/rural-population-percent-of-total-population-wb-data.html#:~:text=Rural%20population%20\(%25%20of%20total,compiled%20from%20officially%20recognized%20sources](https://tradingeconomics.com/zambia/rural-population-percent-of-total-population-wb-data.html#:~:text=Rural%20population%20(%25%20of%20total,compiled%20from%20officially%20recognized%20sources)

³⁹ ZICTA, 2022. *2022 NATIONAL SURVEY ON ACCESS AND USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES BY HOUSEHOLDS AND INDIVIDUALS*. [online] Available at: https://www.zicta.zm/2022_report.pdf

⁴⁰ United Nations, 2024. *New Frontiers: Zambia embraces digital transformation*. [online] Available at: <https://unsdg.un.org/latest/stories/new-frontiers-zambia-embraces-digital-transformation>

infrastructure development must be holistic, extending beyond physical access to include capacity-building and targeted support for underserved communities. Only by addressing both infrastructure gaps and digital skill disparities, can Zambia unlock the full potential of its innovation ecosystem nationwide.

Availability of ICT equipment

The availability of ICT equipment in Zambia continues to present challenges for the innovation ecosystem, particularly for smaller enterprises. Most ICT hardware is sourced from international vendors, and the associated costs often prove prohibitive for start-ups, SMEs, and emerging businesses. Stakeholders report that these enterprises frequently perceive digitization and ICT investments as high-risk and difficult to justify, particularly in the absence of clear, short-term returns.

This hesitancy highlights the need for greater education and advocacy to communicate the long-term commercial value of investing in digital tools. Demonstrating how ICT adoption can enhance productivity, market reach, and operational efficiency is critical to shifting these perceptions. Some universities are stepping in to fill this gap by investing in high-tech equipment and extending access to the broader ecosystem, including entrepreneurial students and early-stage innovators. One such example is the Unipod facility, which offers access to prototype development and testing tools, helping to bridge the gap between concept and market-ready solutions.

However, despite the availability of such resources, the actual uptake by businesses remains relatively low. Many are either unaware of these facilities or uncertain about how to leverage them effectively. As a result, more targeted outreach and awareness-raising initiatives are needed to ensure these investments translate into tangible benefits for the wider ecosystem. Encouraging deeper partnerships between universities and businesses will be key to addressing this challenge. By working together, these actors can co-develop solutions, share resources, and build trust. Collaborative research and development (R&D) initiatives also hold promise, not only in maximizing the potential of existing equipment but also in stimulating innovation that drives technological advancement and long-term economic growth.

Competitiveness

Stakeholders describe the innovation ecosystem of Zambia as emerging, with a growing potential to compete within the Southern African region. While many small and medium enterprises (SMEs) currently focus on serving local markets, an increasing number of SMEs are beginning to extend their reach beyond national borders, signalling increased ambition and regional competitiveness.

One such example is Lupiya, an award-winning fintech start-up offering online loans and peer-to-peer lending services. With a user base exceeding 100 000 in Zambia, the company is now eyeing expansion into the United Republic of Tanzania and Malawi.⁴¹ Similarly, Union54, a Zambian fintech firm known for its card-issuing capabilities, recently launched ChitChat, the first secure social commerce app in Africa with integrated digital wallet features. Developed

⁴¹ Techpoint, 2024. *Zambian fintech, Lupiya, started with a \$500 loan book, eyes top spot at GITEX Global Supernova challenge*. [online] Available at: <https://techpoint.africa/2024/10/16/zambian-fintech-lupiya-gitex-supernova/#:~:text=Between%202016%20and%202020%2C%20it,expansions%20to%20Tanzania%20and%20Malawi>

in partnership with Mastercard, ChitChat allows users across the continent to chat on an encrypted platform and transfer money seamlessly.⁴² Another success story is eShandi (formerly PremierCredit Zambia), which has extended its inclusive digital banking services to the Republic of Kenya, the Republic of South Africa, and Zimbabwe, and aiming to serve up to seven million customers in Kenya alone.⁴³ These achievements highlight the capacity of Zambia for digital innovation and provide inspirational models for other local enterprises to emulate.

However, when compared with regional innovation leaders such as Kenya and South Africa, Zambia still faces structural challenges that hinder its full competitiveness. Persistent infrastructure gaps, low levels of digital adoption, and a shortage of skilled talent continue to constrain the innovation ecosystem. Despite these barriers, stakeholders remain optimistic, recognizing the untapped potential of Zambia to become a more influential player in the regional ICT landscape.

Zambia holds several key competitive advantages. Its central geographic location within Southern Africa offers strategic access to regional trade routes and neighbouring markets. The country also boasts a youthful population, with two-thirds of the population under the age of 25,⁴⁴ a demographic asset that could underpin the growth of a digitally skilled workforce. Emerging sectors such as fintech, agri-tech, and e-commerce further demonstrate the capacity of Zambia to foster innovation and contribute to economic transformation.

At the same time, non-ICT factors significantly influence ecosystem competitiveness. Macroeconomic instability, including high inflation and currency fluctuations, presents a major obstacle to investor confidence. Public health challenges, particularly those related to HIV/AIDS and malaria, impact labour productivity, while persistent urban-rural divides limit equitable access to resources and opportunities. Addressing these broader systemic issues will be essential for Zambia to strengthen its position as a competitive innovation player in the region.

Efforts to tackle some of these challenges are already underway. The Accelerated Growth for SMEs (AGS) programme supports MSMEs through funding, capacity building, and improved access to markets.⁴⁵ In parallel, the Zambia Development Agency (ZDA) continues to promote trade, investment, and enterprise development, contributing to a broader national effort to reinforce competitiveness and drive inclusive growth. Together, these initiatives reflect growing momentum within the ecosystem and offer a foundation upon which Zambia can build a stronger, more regionally competitive innovation landscape.

⁴² Fintech Futures, 2024. *African fintech Union54 launches new social commerce platform ChitChat*. [online] Available at: <https://www.fintechfutures.com/2024/03/african-fintech-union54-launches-new-social-commerce-platform-chitchat/>

⁴³ Launch Base Africa, 2024. *Zambia's PremierCredit Rebrands to eShandi and Expands Across Southern Africa*. [online] Available at: <https://launchbaseafrica.com/2024/09/19/zambias-premiercredit-rebrands-to-eshandi-and-expands-across-southern-africa/>

⁴⁴ Afro Barometer, 2024. *AD937: Majority of Zambian youth see their country as moving in the wrong direction*. [online] Available at: <https://www.afrobarometer.org/publication/ad937-majority-of-zambian-youth-see-their-country-as-moving-in-the-wrong-direction/#:~:text=About%20two%2Dthirds%20of%20Zambia's,Malabo%20Montpellier%20Panel%2C%202024>

⁴⁵ NIRAS, 2024. *Supporting a vibrant private sector in Zambia by focussing on micro-, small- and medium-sized enterprises*. [online] Available at: <https://www.niras.com/projects/ags-zambia/#:~:text=The%20Accelerated%20Growth%20for%20SMEs,developing%20and%20internationalising%20their%20businesses.&text=The%20private%20sector%20in%20Zambia,of%20potential%20for%20future%20growth>

3.3 Talent and champions

- *Soft skills remain a concern among local talent. While universities claim progress, employers highlight critical thinking, creativity, and problem-solving as gaps, limiting graduate readiness for industry challenges.*
- *Despite growing technical talent, a disconnect persists between the theoretical knowledge imparted in academic settings and the practical, job-ready skills employers require.*
- *While public-sector supported Innovation Hubs have been able to encourage entrepreneurship, funding gaps, limited mentorship, and insufficient research hinder transfer of talent to innovation-related fields.*
- *Many champions exist in the ecosystem, but Zambia still faces a shortage of successful entrepreneurs whose achievements and leadership can motivate the next generation of innovators.*

Soft skills

Stakeholders have identified both strengths and challenges in the workforce concerning soft skills. While some local talent exhibits strong communication and teamwork abilities, enabling effective collaboration and the development of productive relationships, significant gaps persist in critical thinking, creativity, and problem-solving, skills essential for fostering innovation and enhancing productivity. According to the 2022 report by the Higher Education Authority of Zambia, university enrolment increased from 126 739 in 2021 to 156 044 in 2022. Of these students, 37 645 were enrolled in business, administration, and law, making it the second most popular field after healthcare and welfare.⁴⁶ This trend underscores a growing interest in business studies. However, the education system often struggles to equip graduates with 21st-century skills that meet industry requirements, as curricula frequently lag behind evolving labour market demands.

Even where improvements have been made, there remains a noticeable gap in the practical application of knowledge and alignment with industry expectations. Current initiatives fall short in bridging the divide between technical expertise and the interpersonal skills required for ICT roles. Furthermore, students often lack sufficient exposure to professional environments where they can develop essential soft skills. Internship and placement opportunities are scarce, and demand significantly exceeds supply. This scarcity not only hampers skill development but also impacts the growth of the tech start-up ecosystem. Young entrepreneurs require access to experienced mentors to refine their business ideas, improve their pitching skills, and effectively communicate their value propositions. Industry leaders consistently highlight the need for stronger collaboration between academic institutions and businesses to ensure graduates are adequately prepared for workplace realities and entrepreneurship.

Some universities, such as the University of Zambia, are working to bridge this gap and have MoUs with leading organizations that offer exposure to real work environments. For example, in one project, students built a management system for the Higher Education Authority. BongoHive also has MoUs with several universities and has introduced courses on design thinking and human-centred design. Initiatives such as the Growth Africa Accelerator equip entrepreneurs with leadership skills and practical tools for success. Similarly, the ZICTA ICT Innovation Programme is a flagship initiative to support innovators, start-ups, and entrepreneurs

⁴⁶ Higher Education Authority, 2022. *THE STATE OF HIGHER EDUCATION IN ZAMBIA*. [online] Available at: <https://hea.org.zm/downloads/reports/>

in the ICT sector. This programme offers participants opportunities to enhance their technical and soft skills through workshops on personal development, mentorship from industry experts, access to technical tools and prototype testing facilities, and funding avenues to aid the commercialization and scalability of their innovations. These initiatives are beginning to make an impact, but more soft skills training is needed across all levels of education to accelerate ecosystem growth.

Technical skills

Zambia faces significant challenges due to low levels of digital literacy and a relatively underdeveloped local ICT industry. Despite these hurdles, technical skills in software development, data analytics, cybersecurity, and artificial intelligence (AI) are slowly advancing. This progress is evident in the increasing number of universities and technical institutions offering specialized degrees and certifications designed to meet growing industry demand. Young people demonstrate a strong appetite for acquiring advanced technical competencies, driven by personal ambition and the evolving needs of the digital economy.

However, the ecosystem continues to grapple with structural challenges. While foundational technical skills are moderately accessible, expertise in more advanced areas remains limited. Additionally, a disconnect persists between the theoretical knowledge imparted in academic settings and the practical, job-ready skills employers require. Larger corporations are generally better equipped to attract and retain experienced talent through competitive salaries and benefits, leaving smaller start-ups and SMEs struggling to compete for a limited talent pool. Compounding this issue, support networks frequently report difficulties recruiting qualified instructors for technical training programmes, further hindering efforts to prepare the next generation of ICT professionals.

Encouragingly, partnerships between academic institutions, industry stakeholders, and international development agencies are starting to reshape the ICT landscape. The Skills Development for Increased Employability Programme (SDEP), launched in 2023, is one such effort. This four-year initiative aims to enhance the quality, relevance, and governance of the Technical Education, Vocational, and Entrepreneurship Training (TEVET) system. Funded by the European Union and implemented with the International Labour Organization (ILO), the programme emphasizes private sector engagement to align training with industry needs, particularly within a greener economy. Key objectives include upgrading training facilities, modernizing curricula, and promoting work-based learning interventions. The private sector plays a crucial role in ensuring these training programmes address real workforce demands. By 2026, the initiative aims to improve employability for both women and men, equipping them with market-relevant skills and contributing to sustainable economic growth.⁴⁷

Skills moving to innovation

The 1990s job market in Zambia was dominated by traditional industries such as mining and agriculture, while the 2024 market is shaped by technology, entrepreneurship, and services. The current career aspirations of young people are shaped by a complex interplay of economic conditions, educational opportunities, and personal goals. While entrepreneurship is increasingly recognized as a viable path to innovation, many young people continue to prioritize traditional

⁴⁷ African Union, 2023. SDEP. [online] Available at: [Skills Development for Increased Employability Programme | International Labour Organization](#)

employment due to perceived stability and structured career progression. This preference is influenced by factors such as limited access to capital, insufficient entrepreneurial training, and cultural norms that favour formal employment over entrepreneurial ventures. Private sector employment remains the preferred route over a career in innovation, due to its perceived stability, but there is a growing interest developing in entrepreneurship.

While progress in soft and technical skills is evident, most stakeholders agree that the education system and job market are not yet fully equipped to inspire young people to pursue careers in innovation and entrepreneurship. Although digital literacy and ICT education are being introduced at the primary and secondary levels, their impact remains limited by insufficient ICT resources and teacher training. For instance, innovation ecosystem players report that coding students in some schools still rely on pen and paper due to a lack of ICT equipment.

At the tertiary level, institutions such as the University of Zambia (UNZA) and the Copperbelt University (CBU) offer specialized ICT degrees in response to market demand. However, training sufficient numbers of graduates to meet industry needs will take time; and students will need significant holistic support to establish high-growth start-ups. Entrepreneurship education has been incorporated into the curriculum, but its ecosystem-wide impact has yet to be fully realized. Stakeholders emphasize the importance of introducing entrepreneurship earlier in the education journey to spark interest among young learners and cultivate future innovators.

A persistent challenge is the mismatch between academic curricula and industry requirements, which continues to affect graduate employability. While universities and technical colleges tend to focus on theoretical knowledge, students often lack practical exposure due to limited internship opportunities, outdated training facilities, and weak industry-academia collaboration. Although some institutions have established MoUs with industry partners, the skills gap remains a key factor contributing to youth unemployment. Many graduates find employment in telecommunications, banking, and public institutions, while others are venturing into entrepreneurship by launching start-ups in fintech, e-commerce, and digital services. Airtel, MTN and Zamtel run internship programmes and graduate trainee schemes, and also sponsor tech innovation hubs to build digital skills among youth.

Organizations such as BongoHive and the Growth Africa Accelerator play a critical role in supporting these entrepreneurs through mentorship, training, and access to funding. A number of private sector actors have also introduced graduate trainee and internship programmes to bridge the gap between academic learning and industry expectations. In underserved areas, NGOs such as Camara Education Zambia are making a difference by setting up Digital Learning Centres to improve ICT access and deliver essential technical training. While these efforts are promising, greater collaboration across government, academia, and the private sector is needed to systematically address the skills mismatch and ensure young professionals are adequately prepared for the future of work.

Champions leading and being recognised

Zambia has seen the emergence of several champions, across stakeholder groups, who are actively supporting innovation and entrepreneurship within the digital ecosystem.

BongoHive is widely recognized for empowering start-ups and entrepreneurs through mentorship and training. Similarly, the Growth Africa Accelerator has equipped emerging business leaders with leadership and management skills to help build sustainable businesses.

In the telecommunication sector, champions such as MTN, Airtel, and Liquid Intelligent Technologies are noted for their efforts in expanding digital infrastructure and services. The banking sector has also contributed, with institutions such as ABSA, Zanaco, FNB, and Standard Chartered Bank driving digital innovation and increasing access to financial technologies. Public sector actors have also played an important role. The National Technology Business Centre (NTBC), ZICTA, and the Ministry of Science and Technology have led initiatives to strengthen ICT infrastructure, support policy implementation, and promote digital literacy across the country.

Despite these successes, the ecosystem still lacks a broad base of entrepreneurial champions whose stories can inspire and mobilize the next generation. While individual contributions are acknowledged, recognition remains fragmented, and success stories are not consistently shared in ways that promote replication or scaling. This lack of visibility limits their broader influence and reduces their ability to serve as role models for emerging innovators.

Several barriers hinder the rise of new entrepreneurial champions. A shortage of funding and investment opportunities often constrains the growth of promising ventures, while limited platforms for public recognition reduce visibility. Although ongoing efforts seek to address these issues, recognition of champions in the ICT sector remains inconsistent. One promising initiative is led by the Information and Communications Technology Association of Zambia (ICTAZ), which hosts an annual awards programme recognizing outstanding individuals and organizations in the ICT sector. The Tech Trends Awards is another annual event that celebrates the most innovative companies, products, and individuals within the country's technology ecosystem. Hosted by the media platform Tech Trends Zambia, the Tech Trends Awards aim to promote a culture of innovation and acknowledge significant contributions to the advancement of technology in the country. Expanding such platforms and creating new opportunities to showcase achievements in technology, entrepreneurship and digital innovation could help elevate role models, amplify their impact, and build a culture of recognition within the ecosystem.

3.4 Capital and resources

- *Within the private sector, banks and telecommunication companies are reinvesting in innovation, but other companies are slow to perceive the benefits of innovation or allocate necessary budgets towards it.*
- *The government is committed to advancing the ICT sector through strategic investments and policy initiatives, but more substantial investment is needed to kick-start the innovation ecosystem.*
- *Start-ups can access early-stage funding through grants, seed competitions, and incubator programmes. Yet, growth-stage funding is scarce, with venture capital primarily sourced from international investors rather than local institutions.*
- *International funding is crucial in sustaining the innovation ecosystem in Zambia, with programmes providing technical support and grants. However, reliance on international donors raises sustainability concerns once grant cycles end.*
- *Foreign direct investment (FDI) in ICT remains limited, with most visibility concentrated in energy, tourism, and real estate sectors. While companies have invested in the ICT sector, broader investment in innovation infrastructure is still needed.*
- *Research funding primarily supports basic research, with limited investment in applied research and commercialization. Greater collaboration between academia and industry would strengthen the translation of research outputs into market-ready solutions.*

- *Ecosystem support networks are expanding, driven by incubators, accelerators, and innovation hubs. However, limited funding restricts their ability to fully help start-ups and expand their reach.*

Availability of investment for the private sector

Investment in the private sector is gradually gaining momentum, driven by an increasing recognition of the role innovation plays in economic transformation. Financial institutions such as Zanaco and ABSA Bank have taken proactive steps by establishing innovation hubs and allocating dedicated budgets for research and development (R&D) to support digital transformation. In addition to their innovation-focused initiatives, banks also offer loans to small firms. Notably, Zanaco has partnered with Sparkassenstiftung Southern Africa to address common barriers that SMEs face in accessing finance.⁴⁸ This collaboration aims to deliver transformative outcomes, enabling small businesses to grow and contribute meaningfully to economic development and sustainability. In the telecommunication sector, Zamtel has launched an ambitious five-year corporate strategy for 2025-2029, marking a bold step toward digital transformation and strengthening its investment in innovation, customer excellence, and sustainable growth.⁴⁹ Airtel Zambia PLC is investing in capacity building as a regular Platinum Partner for the ZICTA ICT Innovation Programme and partnering with ZICTA and Nokia to implement an Online Entrepreneurship Learning Programme to foster digital innovation and entrepreneurship.⁵⁰ MTN demonstrates a strong commitment to CSR through initiatives in education, health, and infrastructure development. The company has been involved in building schools and healthcare facilities, contributing to community development.⁵¹

Private companies are increasingly integrating technology into their operations and service delivery across various sectors, including banking, telecommunications, energy, and fintech. This digital transformation is accompanied by efforts to build cybersecurity resilience, with approaches varying between proactive and reactive strategies. For example, ZESCO Ltd has launched a pilot project to install smart meters in the Roma and Kanyama townships of Lusaka to enhance electricity reliability, reduce unplanned power outages, and improve billing accuracy.⁵²

Despite these positive developments, challenges persist. Stakeholders point out that high interest rates and stringent loan conditions continue to make bank financing inaccessible for many SMEs. Moreover, the private sector in Zambia currently lacks tax incentives for R&D and workforce training, which discourages companies from investing in skills development and innovation. Although there have been some steps toward enhancing public-private collaboration, overall investment in R&D remains low, undermining productivity and long-term competitiveness. One of the key barriers to increased private investment is a perception gap,

⁴⁸ Arise, 2024. *Zanaco partners with German Sparkassenstiftung to empower SME growth*. [online] Available at: <https://ariseinvest.com/zanaco-partners-with-german-sparkassenstiftung-to-empower-sme-growth/>

⁴⁹ Tech Trends, 2025. *Zamtel's Bold Vision: A Five-Year Strategy to Drive Growth and Innovation*. [online] Available at: <https://www.tech Trends.co.zm/zamtels-bold-vision-a-five-year-strategy-to-drive-growth-and-innovation/>

⁵⁰ Wearatech.africa, 2025. *Zambia Partners with Nokia and Airtel to Empower Young Innovators*. [online] Available at: <https://www.wearatech.africa/en/fils-uk/news/telecom/zambia-partners-with-nokia-and-airtel-to-empower-young-innovators>

⁵¹ International Journal of Entrepreneurship, 2023. *Assessment of commitment of private companies towards corporate social responsibilities in Zambia: a case study of mtn-zambia*. [online] Available at: <https://www.abacademies.org/articles/assessment-of-commitment-of-private-companies-towards-corporate-social-responsibilities-in-zambia-a-case-study-of-mtn-zambia-15657.html>

⁵² Afful, M.C. (2026) *Zambia: ZESCO Pilots Smart Grid In Roma To Boost Electricity Reliability* | *Energy News Africa*, *Energy News Africa*. Available at: <https://energynewsafrika.com/zambia-zesco-pilots-smart-grid-in-roma-to-boost-electricity-reliability/> (Accessed: 10 March 2026).

where many local businesses do not yet fully appreciate the concrete value that technology and innovation can bring. This disconnect is particularly pronounced among SMEs, which often operate under tight budget constraints and struggle to allocate sufficient resources to R&D activities. As a result, the pace of sectoral progress remains slow.

To realize the innovation potential of Zambia, ecosystem actors agree that a more deliberate investment agenda is required, one that mobilizes both public and private sector capital, encourages risk-taking, and supports scalable, high-impact solutions for sustainable economic growth.

Government funding

The Government of Zambia has demonstrated a strong commitment to advancing the ICT sector through targeted investments and enabling policy measures. In 2024, the government announced a USD 54 million investment aimed at improving digital infrastructure, expanding connectivity, and driving growth across the ICT industry.⁵³ This financial commitment builds on earlier reforms, including the removal of import taxes on digital equipment in 2021, underscoring the driving role of policy in stimulating market engagement.

Budgetary support for ICT is integrated within the broader national development framework. The National ICT Policy 2023 outlines specific funding priorities, including the expansion of digital infrastructure, enhanced access to ICT services, and nationwide digital literacy initiatives. These allocations reflect a structured and forward-looking approach to embedding technology within the long-term development agenda of Zambia and the initial impacts of these investments are already visible. Improved infrastructure has broadened Internet coverage, and digital inclusion has grown, evidenced by the expansion of Starlink services enhancing connectivity in both urban and rural areas.⁵⁴ In parallel, continued investments in fibre-optic networks are helping to strengthen regional digital integration, facilitating more seamless communication and trade with neighbouring countries. These improvements not only enhance service delivery but also help create an enabling environment for innovation and entrepreneurship.

Through organizations such as ZICTA, the government funds innovation support initiatives such as hackathons for innovators, coders, tech enthusiasts, and entrepreneurs. In 2024 ZICTA hosted an ICT Innovation Hackathon in recognition of the World Telecommunication and Information Society Day under the theme 'Digital Innovation for Sustainable Development'.⁵⁵ Government-backed funds such as the Strategic Research Fund and the Science and Technology Innovation Youth Fund also provide financial support for research and tech commercialization.

Though government support exists, it remains limited in scale and public investment in R&D continues to fall short of what is needed to drive the development and commercialization of new products, services, and business models. This situation highlights the urgent need for more strategic investment approaches, including targeted incentives and stronger public-private partnerships. Stakeholders emphasize that while progress is evident, greater and more sustained funding is needed to accelerate ecosystem development. Expanding support for

⁵³ XINHUANET.com, 2024. *Zambia draws 58-mln-USD investment in digital infrastructure: official*. [online] Available at: <https://english.news.cn/20241003/bd39ddc59f8d419891a3be52b355288b/c.html>

⁵⁴ Smart Zambia Institute, 2024. *Smart Zambia Institute deploys over 80 Starlink kits*. [online] Available at: <https://www.szi.gov.zm/?p=2139>

⁵⁵ ZICTA, 2024. *About the ZICTA ICT Innovation Hackathon*. [online] Available at: <https://www.zicta.zm/ict-innovation/hackathon>

innovation hubs, digital skills training, and R&D will be essential for unlocking the full potential of the digital economy and ensuring inclusive growth across all regions of Zambia.

Availability of investment for start-ups and digital SMEs

Investment trends within the start-up ecosystem in Zambia have seen significant fluctuation in recent years. In early 2024, funding levels declined sharply to USD 475 000 across just four equity rounds, which was in stark contrast to the USD 145 million raised during the same period in 2023.⁵⁶ Despite this downturn, technology-focused sectors continue to attract the most investor interest, particularly in fintech, agri-tech, health-tech, and renewable energy. Notable examples include Union54, a fintech company that raised USD 15 million in seed funding,⁵⁷ and Good Nature Agro, which secured USD 8.5 million in a Series B round at the end of 2023.⁵⁸

Start-up funding sources are diverse, though their accessibility varies significantly across stages. Early-stage enterprises often rely on grants and seed funding competitions managed by organizations such as ZICTA, NTBC, and BongoHive. To bridge gaps in early-stage financing, the Zambia Business Angels Network (ZBAN) was established and has since invested in 12 start-ups,⁵⁹ enhancing access to capital and mentoring. Local banks, including Zanaco and ABSA, have also introduced financial products tailored to small businesses. However, many start-ups continue to bootstrap or seek visibility among venture capital firms and corporate partners in search of strategic collaborations.

Venture capital remains scarce within Zambia, with most venture capital funding originating from international investors. The government provides selective support to MSMEs through debt and equity financing mechanisms, including initiatives under the Citizens Economic Empowerment Commission (CEEC). Within the private sector, investment firms such as Kukula Capital, Amano Capital, and Prospero Zambia are active, though their engagement with tech start-ups is limited. Kukula's investment in Dot Com Zambia and Amano's support to Lusaka Grocery Delivery remain isolated cases. Prospero Zambia, meanwhile, has a broader focus, primarily supporting growth-stage enterprises. Meanwhile, the Lusaka Stock Exchange (LuSE) offers an additional avenue for raising capital, though it remains underutilized. To support smaller, high-growth companies, the Alternative Market (Alt-M) was introduced, but adoption has been slow. Challenges such as unclear regulations, investor caution, and the relatively small size of the domestic capital market have hampered uptake.

Persistent barriers continue to hinder the potential for growth in the innovation investment landscape. Stakeholders frequently cite regulatory opacity, which creates uncertainty and deters potential investors. Early-stage businesses struggle to secure adequate financing, and access to venture capital remains largely out of reach domestically. A further limiting factor is the lack

⁵⁶ Tracxn, 2024. *Overview of start-ups in Zambia*. [online] Available at: https://tracxn.com/d/geographies/zambia/_aRcH8IYOC74CSa9mr7vgylFQ7-kjiAhbM4KLW-bhH3A

⁵⁷ Techcrunch, 2022. *Zambian card-issuing startup Union54 raises \$12M led by Tiger Global*. [online] Available at: <https://techcrunch.com/2022/04/18/zambian-card-issuing-startup-union54-raises-12m-led-by-tiger-global/>

⁵⁸ AVCA, 2023. *Venture Capital in Africa Report*. [online] Available at: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.avca.africa%2Fdata-intelligence%2Fresearch-publications%2F2023-venture-capital-in-africa-report%2F&psig=AOvVaw1oxpC14HHbAaN9QNU3Zq0Y&ust=1743756503529000&source=images&cd=vfe&opi=89978449&ved=0CAQQn5wMahcKEwjY7JCpvbuMAxUAAAAAHQAAAAAQBA>

⁵⁹ ABAN, 2024. *ZBAN Partners with Mighty Fin*. [online] Available at: <https://abanangels.org/2024/06/25/zban-partners-with-mighty-fin/>

of awareness among business owners regarding the long-term value of investing in research, technology, and innovation.

Despite these challenges, the start-up ecosystem in Zambia holds considerable promise. With improved transparency, expanded funding mechanisms, and greater promotion of the business case for innovation investment, the sector could play a pivotal role in fostering sustainable development. Addressing existing gaps will be essential to unlocking this potential and building a more dynamic, resilient, and investor-ready entrepreneurial ecosystem.

International funding

Zambia benefits from strong partnerships and sustained support from a diverse range of international donors and funding organizations. Over the past decade, institutions such as the World Bank, Japan International Cooperation Agency (JICA), UNDP, the United Nations Industrial Development Organization (UNIDO), UN-Habitat, the Food and Agriculture Organization (FAO), the European Union, and several national governments have contributed to strengthening the development trajectory of Zambia, particularly within the ICT and innovation sectors.

Zambia recently secured significant international funding from the European Union to bolster its digital transformation and entrepreneurial ecosystem. Under the Green Economy Promotion and Diversification Programme (GEPD), the European Union has committed EUR 22.27 million, offering both technical assistance and a matching grant facility to support innovative SMEs and start-ups.⁶⁰ The programme specifically targets ventures engaged in green, circular, and digital innovation, reinforcing national efforts to align economic growth with sustainability and inclusiveness. Further support is being channelled through UNDP Zambia, whose Accelerator Labs are working with over 200 MSMEs in sectors such as agriculture, manufacturing, and services. These businesses leverage digital platforms, such as e-commerce websites, mobile payment systems, and online marketplaces to tap into regional opportunities under the African Continental Free Trade Area (AfCFTA), broadening access to markets and strengthening resilience.

The *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) GmbH development agency is also a key player in the Zambian development landscape. GIZ has funded projects across multiple sectors, with a focus on expanding access to clean drinking water, improving wastewater management, and promoting efficient water resource usage. In the energy sector, GIZ supports rural communities in increasing renewable energy capacity, advancing the sustainability agenda. GIZ also contributes to improving public sector governance, offering technical advice to the Ministry of Finance and the Zambia Revenue Authority to strengthen budget management and modernize tax collection systems.

Together, these interventions reflect the growing confidence of international partners in the development potential of Zambia. Beyond providing financial resources, these partnerships have contributed to enhancing ICT infrastructure, improving public service delivery, and supporting the growth of tech-driven enterprises. In doing so, they play an instrumental role in accelerating the national transition to a more inclusive and competitive digital economy.

⁶⁰ Zambia Monitor, 2024. *EU commits €22.27 million to Zambia for promotion of green economy*. [online] Available at: <https://www.zambiamonitor.com/eu-commits-e22-27-million-to-zambia-for-promotion-of-green-economy/>

Foreign direct investment

Foreign direct investment (FDI) in Zambia has shown a notable upward trend, particularly in sectors such as mining, agriculture, and infrastructure. In 2024, FDI inflows increased to USD 641.1 million, reflecting renewed investor confidence and sustained efforts to attract foreign capital.⁶¹ This growth was largely attributed to intercompany debt and accumulated retained earnings across the manufacturing, wholesale and retail trade, and mining and quarrying sectors.

Among key foreign partners, the People's Republic of China continues to play a significant role. For instance, JCHX Mining acquired an 80 per cent stake in Lubambe Copper Mines, committing USD 300 million to revitalize its operations.⁶² Similarly, the Kingdom of Saudi Arabia, through its mining company Ma'aden, is in advanced discussions to acquire a stake in a Zambian copper mine, as part of a broader strategy to diversify investments in critical minerals.⁶³

While detailed data on FDI in the ICT sector remains limited, the government has taken several steps to position ICT as an attractive area for investment. A Memorandum of Understanding (MoU) between the Zambia Development Agency (ZDA) and ZICTA aims to stimulate new investment and support the development of existing ventures within the ICT ecosystem. The ZDA 2022-2026 Strategic Plan further reinforces this commitment by identifying ICT, alongside energy and infrastructure, as a priority enabler sector. The plan targets attracting at least USD 36 billion in investments, comprising USD 27 billion in FDI and USD 9 billion in domestic direct investment (DDI). Additionally, it seeks to increase total exports from USD 11.64 billion in 2022 to USD 26.65 billion by 2026. Non-traditional exports are expected to rise from USD 3.52 billion to USD 11.65 billion within the same period. The strategy aims to create 500 000 decent jobs and transition 50 medium-sized businesses into large multinational corporations by 2026. These efforts are complemented by the National ICT Policy, designed to attract local and FDI in ICTs. Many of the products produced are aimed at the export market. Notably, the ZDA has already surpassed its investment targets ahead of schedule, recording USD 46.1 billion in investment commitments, exceeding the initial USD 36 billion goal.⁶⁴ This achievement reflects the growing appeal of Zambia as a destination for foreign capital and underscores the effectiveness of its coordinated investment promotion efforts.

Complementary policies such as the National ICT Policy are designed to attract both local and foreign investment into the ICT sector, further reinforcing its role in economic diversification. Many ICT-related products and services developed through these investments are targeted at regional and international markets, supporting export growth and global competitiveness. Through this multi-faceted approach, Zambia is working to create a more conducive environment for foreign investors, which is an essential step towards driving job creation, economic transformation, and sustainable development across priority sectors, including ICT.

⁶¹ Bumba Mulenga (2025) Zambia's foreign direct investment inflows on steady rise, Bank of Zambia reports, Zambia Monitor. Available at: <https://www.zambiamonitor.com/zambias-foreign-direct-investment-inflows-on-steady-rise-bank-of-zambia-reports/> (Accessed: 10 March 2026).

⁶² Reuters, 2024. *Zambia says China's JCHX will invest \$300 mln in Lubambe copper mine*. [online] Available at: <https://www.reuters.com/markets/commodities/zambia-says-chinas-jchx-will-invest-300-mln-lubambe-copper-mine-2024-07-11/>

⁶³ Reuters, 2024. *Saudi Arabia in advanced talks over Zambia copper mine stake, Ma'aden CEO says*. [online] Available at: <https://www.reuters.com/markets/commodities/saudi-arabia-advanced-talks-over-zambia-copper-mine-stake-maaden-ceo-says-2024-10-30/>

⁶⁴ Times of Zambia, 2023. *ZDA records \$46bn investment*. [online] Available at: <https://www.facebook.com/Timesofzambia/posts/zda-records-46bn-investment-by-andrew-mulenga-the-zambia-development-agency-zda-h/761508022655770/>

Availability for investment in research

The National Science, Technology, and Innovation Policy of Zambia recognizes the foundational role of research funding in advancing national development. The policy outlines a comprehensive framework for strengthening science, technology, and innovation (STI) and addresses past shortcomings by setting new strategic directions for the sector. A key measure is that the government allocate 1 per cent of GDP to scientific and technological activities, an ambitious target intended to elevate the research and development (R&D) capacity⁶⁵ of the country.

However, despite this target, R&D funding has historically remained well below the recommended threshold. In 2022, the gross domestic expenditure of Zambia on R&D was estimated at just 0.28 per cent of GDP, amounting to approximately USD 170 million.⁶⁶ This shortfall is widely acknowledged as a barrier to the effective application of science and technology in national development, limiting the capacity of researchers and institutions to generate impactful innovations.

To address the funding gap, the policy has led to the creation of dedicated financing mechanisms. The Strategic Research Fund (SRF) and the Science and Technology Innovation Youth Fund (STIYF), both managed by the National Science and Technology Council (NSTC), represent important steps in this direction. The SRF provides grants of up to ZMW 800 000 per project, supporting research in areas of strategic national importance.⁶⁷ The STIYF complements this by offering up to ZMW 250 000 per project for young innovators under the age of 35. Its aim is to support the development of commercially viable innovations that contribute to employment creation and economic growth. While these initiatives have been welcomed by stakeholders, many emphasize that further investment and institutional support are required to catalyse the national innovation ecosystem. Funding mechanisms alone are not sufficient; a stronger ecosystem requires complementary support in the form of infrastructure, mentorship, commercialization pathways, and collaboration with industry.

At the institutional level, universities are also playing a role. At the University of Zambia (UNZA), the Directorate of Research and Graduate Studies administers Seed Money Grants to kick-start promising research projects. These are designed to support initiatives with strong potential to attract external funding and scale, encouraging early-stage researchers to pursue ideas with real-world impact. Collectively, these funding instruments represent important building blocks for the ecosystem. However, stakeholders agree that scaling up research investment, both in volume and strategic focus, is essential to translate scientific and technological ideas into market-ready innovations, and to ensure that development in Zambia is underpinned by a strong, sustainable, and inclusive knowledge economy.

⁶⁵ Republic of Zambia, 2020. *National Science, Technology and Innovation Policy*. [online] Available at: <https://www.mots.gov.zm/wp-content/uploads/2022/06/National-ScienceTechnology-and-Innovation-Policy-A4-Print-Ready.pdf>

⁶⁶ Statista, 2023. *Gross domestic expenditure on research and development (GERD) as a share of GDP in Zambia from 2020 to 2022*. [online] Available at: <https://www.statista.com/statistics/1345229/gerd-as-gdp-share-in-zambia/>

⁶⁷ National Science and Technology Council, 2023. *CALL FOR RESEARCH PROPOSALS FOR FUNDING UNDER THE STRATEGIC RESEARCH FUND (SRF)*. [online] Available at: <https://www.facebook.com/photo/?fbid=1914712848687393&set=the-government-of-the-republic-of-zambia-grz-through-the-ministry-of-higher-educ>

Resources to build ecosystem support

In Zambia, incubators and accelerators play a vital role in supporting start-ups and SMEs by offering mentorship, training, and networking opportunities. While these organizations typically do not provide direct financial investment, they serve as critical platforms for capacity-building and early-stage support. To help bridge the funding gap, entities such as the Zambia Business Angels Network (ZBAN) connect entrepreneurs with private investors, offering not only capital but also technical expertise and strategic guidance.

Sustaining these support organizations, however, remains an ongoing challenge. Many incubators rely on a mix of revenue streams to maintain operations, these include grants from international donors and NGOs, service fees for training and consultancy, equity stakes in the start-ups they support, and partnerships with corporations and academic institutions. For example, GrowthAfrica operates in Zambia by delivering strategic advisory services, investment readiness programmes, and mentorship, while actively diversifying its funding model to remain sustainable.

Despite these efforts, financial sustainability remains a key concern. Government budgets currently do not include dedicated provisions to support private incubators, leaving them largely dependent on external funding sources or commercial activities. This lack of public support creates economic uncertainty and constrains the ability of these enablers to extend their reach or scale their impact effectively.

In response, several government and international programmes have emerged to bolster the entrepreneurial ecosystem. The AICCRA Zambia Accelerator Programme, for instance, provides grants for climate-smart agricultural innovations, supporting start-ups working at the intersection of agriculture and technology. Similarly, the UNDP Accelerator Lab National Innovations Initiative partners with local innovators to scale impactful, homegrown solutions that address pressing national challenges. These collective efforts aim to address systemic gaps in funding, skills development, and infrastructure, thereby reinforcing the foundations of a more resilient and inclusive entrepreneurial landscape. However, stakeholders widely agree that further action is needed. Many advocate for increased government funding specifically directed at ecosystem enablers, recognizing their essential role in nurturing innovation. Others call for the establishment of an umbrella organization to better coordinate incubators, accelerators, and support organizations, allowing them to share knowledge, pool resources, and strengthen collaboration across the ecosystem.

Creating a more cohesive and better-resourced enabling environment will be essential for Zambia to unlock the full potential of its start-ups and SMEs and to accelerate the broader innovation agenda.

3.5 Market and networks

- *The ICT ecosystem benefits from some key formal associations, supported by innovation hubs, government agencies, and informal networks; however, there is no formal network to support start-ups and early-stage businesses. A dedicated network could help boost early-stage entrepreneurship and support peer collaboration and ecosystem growth.*
- *While stakeholders are generally aware of each other's activities, a comprehensive, publicly accessible mapping of all actors is still lacking; the absence of a centralized overview hinders effective collaboration, highlighting the need for platforms to connect stakeholders and foster innovation across the ecosystem.*

- *The domestic ICT market offers opportunities across finance, e-commerce, agriculture, tourism, and software development, driven by increasing mobile adoption and Internet penetration; however, barriers such as affordability, digital literacy gaps, and infrastructure limitations hinder widespread adoption and scalability.*
- *The sector holds promise in regional markets, particularly financial services, supported by government initiatives. However, significant challenges, including foreign exchange limitations, infrastructure deficits and lack of knowledge, continue to hinder the scalability of ICT solutions internationally.*

Formal associations

Zambia has an opportunity to strengthen its digital economy by leveraging formal associations that can provide structure, advocacy, and coordination across the ICT ecosystem. However, only a few business associations currently play an active role in supporting the sector. Among them, the Information and Communications Technology Association of Zambia (ICTAZ) and the Zambia Chamber of Commerce and Industry (ZACCI) stand out as key players recognized by stakeholders.

Additionally, ICTAZ serves as the professional regulatory body for ICT practitioners, with mandatory membership for professionals across the country. Through advocacy, training, and certification programmes, ICTAZ promotes professionalism and capacity-building within the sector. Its collaborations with government and industry have been instrumental in advancing the digital economy. Nonetheless, some stakeholders believe the association could further strengthen member engagement and foster broader collaboration across the ecosystem. ZACCI plays a wider role in driving economic growth and supporting private sector development, including ICT. As a national representative body for businesses, it engages in policy advocacy, delivers capacity-building initiatives, and facilitates international trade partnerships. By working closely with government agencies and international organizations, ZACCI helps create a favourable business environment, enabling ICT entrepreneurs to scale innovations and tap into global markets.

In the absence of widespread formal associations, many stakeholders turn to support organizations such as BongoHive, Jacaranda Hub, and the Anakazi Centre among others. These organizations have emerged as essential connectors, offering mentorship, training, and access to resources critical for early-stage start-ups and SMEs. Alongside these, government agencies such as ZICTA help bridge policy frameworks with sectoral development, ensuring an enabling environment for innovation and entrepreneurship. However, the ecosystem lacks a dedicated formal network specifically focused on supporting start-ups and SMEs in their formative stages. Establishing such a network could help catalyse early-stage entrepreneurship, encourage peer learning, and drive ecosystem growth.

At the same time, Zambia benefits from a growing number of individual champions and thought leaders who informally advocate for ICT development. Though still maturing, these informal networks serve as vital links between grassroots innovation and institutional support. However, their lack of structured frameworks often limits their capacity to influence systemic change at scale. Addressing these issues will require stronger collaboration between actors, leveraging the institutional strengths of formal associations and the agility and creativity of informal networks. Aligning their efforts will be critical to building a more cohesive, inclusive, and resilient ICT ecosystem.

Ecosystem mapping and collaborations

Zambia has an opportunity to accelerate digital transformation by strengthening collaboration across the innovation ecosystem through greater visibility, coordination, and shared purpose. While stakeholders, and particularly those in formal networks and urban centres, are generally aware of each other's activities, this knowledge remains fragmented and informal. The Smart Zambia Institute has emphasized the importance of collaboration over competition among ICT professionals as a means to drive economic development through greater integration.

However, a comprehensive, publicly accessible mapping of ecosystem actors remains a critical missing piece. Although government documents and policy frameworks, such as the National ICT Policy 2023, outline several key stakeholders and their roles, this information is dispersed and not centralized. Organizations such as UNDP and ZICTA have undertaken mapping efforts covering parts of the ecosystem, while Prospero has mapped the investment landscape in Zambia. Its study explored five pillars of the impact investment ecosystem: supply, demand, intermediation, enablers, and regulatory frameworks, offering useful insights that touch on the broader digital space. Yet, despite these efforts, the absence of a comprehensive and accessible map detailing all ICT ecosystem actors continues to hinder effective collaboration. Stakeholders frequently report challenges in identifying potential partners, understanding existing initiatives, or locating support services aligned with their needs.

This gap underscores the importance of investing in system-wide ecosystem mapping that connects government, private sector, academia, support organizations, and innovators.

Domestic markets

In 2023, the national GDP was approximately USD 27.58 billion.⁶⁸ This domestic market offers a promising foundation for digital innovation, presenting diverse opportunities for local entrepreneurs across multiple sectors.

The financial services sector leads in digital adoption in the country, with significant investment in mobile banking and digital financial services driving both financial inclusion and operational efficiency. Alongside this, the e-commerce sector continues to gain momentum, fuelled by rising Internet penetration and mobile adoption, opening space for entrepreneurs to develop scalable digital platforms tailored to local needs. In the agricultural sector, ICT solutions such as mobile-based market information systems and precision farming tools are gradually modernizing traditional practices, enhancing productivity and sustainability. Meanwhile, tourism and hospitality industries are increasingly integrating digital platforms to improve customer engagement, streamline booking systems, and broaden marketing outreach. Sectors such as software development and IT outsourcing also hold potential, particularly as enablers of cross-border digital trade.

The local consumer base in Zambia is characterized by a young and increasingly connected population. As of mid-2024, mobile cellular subscriptions stood at 21.9 million, reflecting widespread access to mobile cellular devices. There is growing adoption of digital services, and particularly of mobile money and e-government platforms.⁶⁹ However, barriers such

⁶⁸ Trading Economics, 2023. *Zambia GDP*. [online] Available at: <https://tradingeconomics.com/zambia/gdp>

⁶⁹ Zambia Monitor, 2024. *Zambia's ICT sector sees growth in mid-2024: mobile subscriptions up 8.9%, internet, 12.6%*. [online] Available at: <https://www.zambiamonitor.com/zambias-ict-sector-sees-growth-in-mid-2024-mobile-subscriptions-up-8-9-internet-12-6/>

as affordability, digital literacy gaps, and infrastructure limitations continue to restrict more widespread use.

The domestic market holds considerable potential as a testing ground for digital innovations. However, many entrepreneurs have not fully capitalized on this opportunity, often due to insufficient market research, limited access to finance, and inadequate understanding of consumer needs. For these reasons, stakeholders believe that entrepreneurs are not addressing unique local problems. While progress has been made through the development of innovation hubs and support for start-up ecosystems, persistent gaps in technical skills, infrastructure, and policy consistency continue to hinder long-term growth and scalability.

Meanwhile, public procurement in Zambia, which accounts for about 15 per cent of GDP,⁷⁰ represents another significant avenue for local market engagement. The Preferential Procurement Programme aims to level the playing field for start-ups and SMEs by offering competitive advantages such as reserved contracts and bid price adjustments. However, stakeholders note that awareness of the programme, the complexity of the application process, and capacity to meet procurement standards remain common barriers. As a result, contracts often continue to be awarded to more established firms with proven track records.

Addressing these barriers, through increased outreach, training, and simplified procedures, could unlock substantial opportunities for local entrepreneurs. Strengthening the connection between domestic demand and innovation supply will be key to growing a resilient, inclusive digital economy.

Trade flows

Trade in ICT goods reflects both the opportunities and challenges Zambia faces in building a globally competitive digital economy. Recent figures from 2021 show that ICT goods imports totalled approximately USD 176.7 million, accounting for 2.49 per cent of total goods imports,⁷¹ and ICT goods exports stood at about USD 3.4 million.⁷² This significant trade imbalance underscores the continued reliance of Zambia on imported technologies and the limited development of domestic ICT manufacturing and export capabilities.

Despite these challenges, the sector holds potential on both the import and export fronts. Local companies benefit from importing essential ICT components to support innovation and product development. The temporary suspension of customs duties on ICT and telecommunication equipment until 2025 helped ease costs. However, foreign exchange constraints, currency volatility, and difficulties complying with international standards continue to delay procurement and prolong innovation cycles. These constraints, in turn, affect the agility and competitiveness of local firms. On the export side, Zambia holds promise, particularly within regional markets and opportunities exist in software development and IT outsourcing. However, infrastructure limitations, regulatory complexities, and market access barriers often prevent local innovators from scaling their solutions internationally.

⁷⁰ ZPPA, 2022. *ZPPA 2022-2026 Strategic Plan*. [online] Available at: <https://www.zppa.org.zm/documents/20182/181704/ZPPA+2022-2026+Strategic+Plan.pdf/ff815282-d031-4c50-a02e-d7fb45abc71b>

⁷¹ CEIC, 2021. *Zambia Imports: ICT Goods*. [online] Available at: <https://www.ceicdata.com/en/indicator/zambia/imports-ict-goods>

⁷² CEIC, 2021. *Zambia Exports: ICT Goods*. [online] Available at: <https://www.ceicdata.com/en/indicator/zambia/exports-ict-goods>

To address these issues, the ZDA plays a key role in supporting the export sector, focusing on non-traditional exports and empowering SMEs. Central to these efforts is the Zambia Export Development Fund (ZEDF), a financial instrument managed by ZDA to provide affordable financing for SMEs engaged in export activities. Recently, the capital base of the fund was increased to USD 29 million, supported by contributions from development finance institutions and investors, enabling more businesses to access low-interest loans.⁷³ To qualify, companies must meet specific criteria, including being registered in Zambia, demonstrating financial viability, having verifiable export contracts, and contributing a 25 per cent co-financing share. Priority is given to companies supporting women and youth empowerment. Loan options include short-term working capital financing with a 12-month tenure (with options for rollover based on performance) and medium-term project financing with repayment terms of up to five years. The application process requires submitting business registration certificates, financial records, feasibility studies, and proof of export orders.

These financial instruments are complemented by trade shows, capacity-building programmes, and strategic partnerships. Events such as the Zambia International Trade Fair (ZITF) and Zambia Tech-Xpo provide valuable platforms for showcasing local innovation to international stakeholders. Together, these efforts support the development of an export-oriented digital economy. However, realizing this vision depends on addressing systemic challenges. Gaps in digital infrastructure, limited market readiness, and weak compliance with international standards continue to hamper progress. Stakeholders acknowledge that many local firms lack the necessary training, market insight, and institutional support to engage meaningfully in export activities. Strategic investment in ecosystem strengthening, including compliance readiness, skills development, and infrastructure upgrades, will be essential to fully leverage the potential of the ICT sector in global trade. Doing so could significantly boost foreign exchange earnings, enhance SME competitiveness, and accelerate inclusive digital innovation in Zambia.

3.6 Culture and communities

- *The tech and entrepreneurial communities play a key role in fostering innovation, providing mentorship, and supporting early-stage start-ups through events such as hackathons, pitching competitions, entrepreneurship exhibitions, and shows, as well as general networking forums and conferences. However, events often lack follow-up actions and measurable outcomes, leading to fragmented impact.*
- *There is a noticeable increase in entrepreneurial interest, particularly among youth, driven by training programmes, government initiatives, and exposure to global entrepreneurial practices. However, many individuals still favour job security over the perceived instability of running a business.*
- *Entrepreneurs are becoming more resilient, viewing failure as an opportunity for learning and adapting their business models based on market feedback. Despite this, insufficient market research exacerbates challenges for entrepreneurs in managing risk effectively.*
- *A significant proportion of MSMEs are led by women, but rural citizens, people with disabilities, older generations, and youth from disadvantaged backgrounds remain underrepresented in the ICT ecosystem.*

⁷³ Zam Monitor, 2024. *Guidelines for accessing \$29 million export fund released by Zambia Development Agency.* [online] Available at: <https://www.zamiamonitor.com/guidelines-for-accessing-29-million-export-fund-released-by-zambia-development-agency/>

Communities and events

Tech and entrepreneurship communities in Zambia have been steadily growing, fuelled by a range of initiatives and projects aimed at supporting innovation and business development. Several key events throughout the year have emerged as cornerstones of the tech ecosystem.

Innovation Week Zambia is an annual gathering that brings together industry leaders, entrepreneurs, and investors to explore trends, share knowledge, and foster collaboration.⁷⁴ The Zambia Tech-Xpo serves as a premier platform for showcasing advancements in the tech sector, facilitating networking opportunities, and highlighting the contributions of local innovators.⁷⁵ Additionally, Zambia Digital Week,⁷⁶ which was organized in January 2025, aimed to revolutionize the country's digital landscape by focusing on emerging technologies and fostering public-private partnerships. These events are vital in building community connections, facilitating investment, and increasing visibility for start-ups on both regional and international platforms.

Initiatives such as the ZITF and the FIRST & AfricaCERT Symposium,⁷⁷ on the other hand, aim to elevate the presence of Zambia in global technology discussions, offering platforms for showcasing solutions and addressing sector-specific challenges.

However, stakeholders have acknowledged a few issues. There is a perceived lack of coordination among initiatives, which often results in duplication of efforts and missed opportunities for synergy. Additionally, information dissemination and follow-up actions are sometimes fragmented, making it difficult for stakeholders to stay informed or aligned with broader ecosystem goals. To address these gaps, stakeholders recommend stronger event coordination, clearer communication strategies, and the development of measurable outcomes to enhance impact. Improved alignment between events could help build a more cohesive and strategically connected innovation ecosystem.

Spread of entrepreneurial culture

In Zambia, there is a growing interest in entrepreneurship particularly among young people, and especially within the digital sector. This enthusiasm is evidenced by increased participation in initiatives such as the ZICTA ICT Innovation Programme, which has supported over 500 youth innovations nationwide since its inception in 2016.⁷⁸

Government policies, such as the National Youth Policy, and initiatives including the Youth Resource Centres and digital transformation programmes equip youth with the necessary skills and tools to participate in the digital economy. Encouraging factors include government support, availability of training programmes, and the potential for self-employment. However,

⁷⁴ Innovation Week Zambia, 2024. *Innovation Week Programme*. [online] Available at: https://www.facebook.com/events/national-institute-of-public-administration-nipa/innovation-week-zambia-2024/1234219594673008/?locale=ku_TR

⁷⁵ Zambia Tech Expo, 2024. *About Zambia Tech-Xpo 2024*. [online] Available at: [Zambia Tech Expo, 2024. About Zambia Tech-Xpo 2024 - Recherche Images](#)

⁷⁶ Techtrends, 2024. *Loita Business To Host Groundbreaking Zambia Digital Week 2025*. [online] Available at: <https://www.techtrends.co.zm/loita-business-to-host-groundbreaking-zambia-digital-week-2025/>

⁷⁷ First, 2024. *2024 FIRST & AfricaCERT Symposium: Africa and Arab Regions*. [online] Available at: <https://www.first.org/events/symposium/africa-arab-regions2024/>

⁷⁸ TechAfrica News, 2023. *Zambia Commits to Youth-Led Development with ICT Innovation Awards and Start-up Initiatives*. [online] Available at: <https://techafricanews.com/2023/12/13/zambia-commits-to-youth-led-development-with-ict-innovation-awards-and-startup-initiatives/>

challenges such as limited access to capital, perceived risks associated with entrepreneurship, and perhaps uncoordinated support ecosystems can deter young people from pursuing entrepreneurial ventures. Although societal perceptions are shifting, with entrepreneurship increasingly being accepted as a viable alternative to formal employment, particularly in the context of high youth unemployment, it is still seen as unstable and risk-laden compared to the security of formal employment.

Importantly, many young people are establishing businesses not primarily out of aspiration, but as a response to limited employment opportunities. In 2023, the youth unemployment rate stood at 9.76 per cent, highlighting the difficulties young people face in securing formal jobs.⁷⁹ This employment gap has led to a rise in self-employment, particularly in the informal sector, where the informal economy accounts for approximately 73.8 per cent of total employment.⁸⁰

While entrepreneurship is often promoted as a solution to youth unemployment, the reality suggests that for many, it is a necessity-driven choice rather than a strategic career pursuit. This underscores the importance of not only promoting entrepreneurship but also of addressing structural challenges within the labour market. Policies must focus on creating more formal employment opportunities while supporting entrepreneurial ventures that are sustainable, scalable, and capable of generating long-term economic value.

Attitudes towards risk and entrepreneurship

Attitudes towards risk and entrepreneurship in Zambia are gradually evolving, and particularly in recent years, there is a growing number of individuals are increasingly willing to pursue entrepreneurial ventures.

Start-ups, often supported by innovation hubs, benefit from training programmes designed to improve their ability to conduct market research. This research is critical for identifying risks, understanding customer demand, and shaping effective business strategies. However, stakeholders observe that many entrepreneurs still enter the market without a solid grasp of sustainable business models, which often contributes to early-stage failures. A prevailing preference for the security of formal employment over the uncertainty of entrepreneurship persists, reflecting a broader cultural tendency towards risk aversion. That said, perceptions of failure are slowly shifting. Entrepreneurs are beginning to view setbacks not as definitive ends but as opportunities for learning and iteration. Some respond by adjusting their business models or refining their products based on market feedback, while others temporarily return to formal employment to stabilize their finances or gain further experience before launching a new venture. Despite this resilience, many aspiring entrepreneurs are unable to try again due to limited access to capital and scarce resources.

Exposure to global entrepreneurial practices and the visibility of successful local businesses have played a role in reshaping mindsets, fostering greater adaptability and openness to risk among aspiring business owners. Government support has also contributed to this shift. Programmes led by entities such as the National Technology Business Centre (NTBC), the Citizens Economic Empowerment Commission (CEEC), and ZICTA have helped instil confidence in entrepreneurs by encouraging calculated risk-taking.

⁷⁹ Macrotrends, 2023. *Zambia Youth Unemployment Rate 1991-2025*. [online] Available at: <https://www.macrotrends.net/global-metrics/countries/ZMB/zambia/youth-unemployment-rate>

⁸⁰ Oxford Academic, 2024. *The Informal Sector in Zambia*. [online] Available at: <https://academic.oup.com/edited-volume/58201/chapter-abstract/482134066?redirectedFrom=fulltext&login=false>

Collectively, these efforts are helping to build a more resilient and dynamic entrepreneurial ecosystem, where risk is increasingly viewed as a natural and necessary part of innovation rather than an insurmountable barrier. While progress is evident, stakeholders highlight the need for more local role models to openly share their experiences, including failures, in order to further normalize risk-taking and support the next generation of entrepreneurs.

Diversity and equality

Gender diversity in the workplace is advancing in Zambia, with women playing a significant role in the growth of MSMEs. Over 60 per cent of MSMEs are led by women, reflecting their increasing leadership and influence in the business landscape.⁸¹ This progress highlights a shift towards greater inclusivity and underscores the resilience and entrepreneurial spirit of women across the country. While this trend is encouraging, stakeholders note that female representation in the ICT sector remains limited.

A study on MSMEs in Lusaka found that only 24.7 per cent of female entrepreneurs were involved in micro-enterprises, with no representation in medium-sized enterprises, pointing to minimal participation in the ICT space.⁸² The study identified several barriers to female engagement, including lack of access to essential ICT equipment, limited mentorship or empowerment opportunities, and a general lack of public awareness about careers in the digital economy. To address these challenges, the study suggested increasing support for STEM education targeted at women, establishing mentorship programmes, and encouraging the government to allocate more funding to empower women aiming to build businesses in the ICT sector.⁸³ Initiatives by institutions such as the Citizens Economic Empowerment Commission (CEEC) and national financial inclusion strategies are already working to bridge these gaps through mentorship, training, and tailored financial support for women entrepreneurs.

However, systemic barriers persist for other marginalized groups. Citizens in rural areas face significant challenges, including limited digital infrastructure, poor access to financial services, and fewer educational opportunities. Past programmes such as the USAID programme Enterprise Development and Growth Enhanced (EDGE) Activity did address some these gaps by equipping rural SMEs with digital tools and entrepreneurial training. During the product period, EDGE secured over USD 15 million in debt finance and an additional USD 1.5 million in grants from non-USAID partners. The programme saw collaborations with 12 financial institutions and two public funds, helping over 100 enterprises apply for financial support, creating more than 620 jobs, and piloting interest rate reduction schemes with commercial banks.⁸⁴

Despite these gains, rural entrepreneurs continue to face difficulties accessing larger markets and resources. Similarly, people with disabilities remain underrepresented in the innovation ecosystem. Physical barriers and a lack of tailored training programmes contribute to their

⁸¹ Alliance for Financial Inclusion, 2024. *Women are leading Zambia's MSME sector: here's how it happened*. [online] Available at: <https://www.afi-global.org/newsroom/blogs/women-are-leading-zambias-msme-sector-heres-how-it-happened/>

⁸² Management Journal for Advanced Research, 2024. *Evaluating Women Participation in Information and Communication Technology (ICT) among MSME's in Zambia; A Case Study of CBD, Lusaka*. [online] Available at: <https://mjar.singhpublication.com/index.php/ojs/article/view/133>

⁸³ Management Journal for Advanced Research, 2024. *Evaluating Women Participation in Information and Communication Technology (ICT) among MSME's in Zambia; A Case Study of CBD, Lusaka*. [online] Available at: <https://mjar.singhpublication.com/index.php/ojs/article/view/133>

⁸⁴ USAID, 2024. *Enterprise Development and Growth Enhanced*. [online] Available at: <https://www.acdivoca.org/projects/usaids-zambia-enterprise-development-and-growth-enhanced-edge/>

exclusion. In response, Zambia is developing national guidelines for disability inclusion, currently awaiting approval by the Ministry of Community Development. These guidelines are intended to establish an inclusive framework for meaningful participation of people with disabilities in the digital economy.

Older generations often struggle to integrate due to lower levels of digital literacy, while young people from disadvantaged socio-economic backgrounds face challenges such as limited access to finance, mentorship, and networks necessary to launch and grow businesses.

To reduce these inequalities, the government has introduced several targeted interventions. The National Financial Inclusion Strategy (2024-2028) prioritizes inclusion for women and underserved communities, while promoting entrepreneurial training and capacity building. Additionally, the establishment of a movable property registry system has created alternative collateral options, making financial services more accessible for rural entrepreneurs. Through a partnership between Musika and the Patents and Companies Registration Agency (PACRA), an awareness campaign was launched to promote the Movable Property (security interest) Registry System (MPRS) to an initial group of 2 000 smallholder farmers.⁸⁵

Efforts to decentralize digital opportunities are also underway. Investments in rural broadband infrastructure and the development of innovation hubs aim to extend access beyond urban centres, enabling broader participation in the digital economy of Zambia. These initiatives, while still in progress, signal a growing commitment to building a more inclusive and equitable innovation ecosystem.

3.7 Policy and regulation

- *The public sector acknowledges its role and is engaged in innovation, but the ecosystem could benefit from an accelerated pace of policy execution to deliver widespread measurable impact.*
- *The public sector has been engaging more with ecosystem stakeholders, who have had positive feedback about engagements and outcomes. However, more awareness-raising initiatives and improved outreach efforts could help encourage broader collaboration across all sectors of society.*
- *There is an intellectual property (IP) policy, and a number of university technology transfer offices. However, the number of IP and patent registrations remains relatively low due to lack of commercialization of research.*
- *Policies such as the National Science, Technology, and Innovation Policy (NSTIP) 2020 prioritize research funding, knowledge transfer, and the commercialization of scientific outputs. Despite these policies, investment in R&D in Zambia remains low, limiting the ability of Zambia to drive substantial scientific advancements.*
- *The National ICT Policy (2023) aims to expand digital infrastructure, improve cybersecurity, and foster digital literacy. Stakeholders broadly support these initiatives but stress the importance of regular policy reviews, strengthened enforcement mechanisms, and improved collaboration between regulatory bodies and industry players.*
- *Zambia has integrated ICT education into the national curriculum and promotes science, technology, engineering, and mathematics (STEM) education at various academic levels.*

⁸⁵ Musika, 2024. Making access to affordable finance a reality using PACRA's Movable Property (Security Interest) Registry. [online] Available at: <https://www.musika.org.zm/headlines/making-access-to-affordable-finance-a-reality-using-pacras-movable-property-security-interest-registry/>

However, some rural schools lack adequate resources, including computers and trained teachers.

- Financial regulators generally support digital solutions. However, the fragmented policy landscape often struggles to keep pace with technological advancements. There is a growing consensus on the need for a dedicated fintech policy and regulatory framework for crowdfunding to address these gaps.
- The revised National MSME Development Policy (2023-2027) focuses on improving MSME competitiveness, productivity, and growth. However, many MSMEs continue to face challenges accessing adequate training in key areas such as regulatory compliance, financial management, and market access.
- Policies and strategies supporting industrial development are in place, but smaller businesses often remain unaware of the opportunities and support mechanisms available.
- Although Zambia benefits from several regional and global trade agreements, none specifically focus on facilitating the trade of ICT products or services.

Public sector engagement with innovation

The public sector recognizes its role in fostering innovation and is actively engaged in the digital transformation of Zambia. Many stakeholders view the public sector as a leading force in the national digitization journey, with numerous public services now accessible through digital platforms, reflecting a clear commitment to building a robust digital ecosystem. Zambia is actively advancing its e-government initiatives, transitioning from manual processes to digital platforms across various ministries. Deployed by the SMART Zambia Institute, ZamPortal is a website and government platform that hosts all digital government services and interacts with the public. Currently, the ZamPortal hosts 322 services that citizens can access. Since the government implemented ZamPortal, it has become easier for citizens to seamlessly apply for government services online.⁸⁶

To support this vision, the government has introduced key agencies and initiatives aimed at strengthening the innovation landscape. At the forefront is the Smart Zambia Institute (SZI), which plays a central role in coordinating and implementing digital transformation policies. Working closely with relevant ministries and sectors, SZI helps integrate advanced technologies into public services delivery, enhancing efficiency, transparency, and citizen engagement. The Smart Zambia Institute strategically designs and deploys digital solutions that address national priorities and development challenges.

The National Innovation Initiative (NII) has also been established to accelerate the growth of the start-up ecosystem⁸⁷ in Zambia. It acts as a bridge between government, the private sector, academia, and investors, fostering collaboration to create a more supportive regulatory environment for entrepreneurship. The initiative also aims to equip local start-ups with the tools and networks needed to scale globally, increasing their visibility and competitiveness. ZICTA is also driving innovation in the country by providing regulatory guidance, digital infrastructure development, and initiatives that enable entrepreneurs to leverage ICTs for growth. Additionally, the National Digital Transformation Strategy (2023-2027), provides a comprehensive framework for digital adoption across sectors, with priorities including digital

⁸⁶ ZamPortal, 2024. *Director Sibulowa Introduces the GSB*. [online] Available at: <https://zamportal.gov.zm/director-sibulowa-introduces-the-gsb/>

⁸⁷ National Technology Business Centre, 2024. *National Innovation Initiative*. [online] Available at: <https://nii.ntbc.co.zm/#:~:text=The%20overall%20objective%20of%20the,per%20defined%20government%20innovation%20journey>

infrastructure, services, platforms, skills, and cybersecurity. Complementing this, the National Electronic Government Plan (2023–2026) underscores the importance of digital public services, e-governance frameworks, and robust data security in driving sustainable digital growth.

Ministries leveraging technology include among others, the Ministry of Health, which has introduced digital health systems in hospitals nationwide to enhance healthcare delivery and ensure the availability of essential medicines. This initiative aims to digitize healthcare services and combat pharmaceutical drug theft by tracking pharmaceuticals from procurement to patient use.⁸⁸ Additionally, the Ministry of Local Government and Rural Development, in collaboration with the SMART Zambia Institute, has connected 69 local authorities to the government wide area network (GWAN).⁸⁹ This connectivity enables councils to access shared resources and improve service delivery. Zambia is making concerted efforts toward digital transformation across various ministries, with notable advances in healthcare and local government sectors. Inter-ministerial collaboration is being fostered through initiatives led by the SMART Zambia Institute. However, achieving comprehensive digital inclusion and interoperability remains a work in progress.

While these initiatives signal important progress, they remain relatively recent and have yet to generate widespread, measurable impact. Stakeholders suggest that the public sector could further strengthen its role by doing more to directly support business growth and economic development. The potential for these agencies and strategies to transform the innovation landscape of Zambia is substantial, but enhanced coordination, faster implementation, and greater inclusivity across public sector administrations will be key to delivering on this promise.

Public sector connections to ecosystem

The public sector has become increasingly proactive in engaging with innovation ecosystem stakeholders, and these efforts have generally been met with positive feedback regarding their outcomes. Stakeholders acknowledge the commitment of key institutions, particularly the Smart Zambia Institute (SZI) and the Ministry of Technology and Science, in spearheading digital transformation efforts. This collaboration is most evident in national programmes such as the Digital Transformation Strategy (2023-2027) and the National Electronic Government Plan (2023-2026), both designed to strengthen the position of Zambia in the global digital economy. From the regulator side, ZICTA has supported the innovation ecosystem through initiatives such as the ICT Innovation Programme, which provides funding, mentorship, and incubation support to local startups and young innovators. However, some stakeholders believe that more could be done by the public sector to deepen collaboration, particularly by integrating academic institutions and strengthening public-private partnerships to further accelerate innovation. Encouragingly, public consultation practices have become more embedded in governance processes, especially in recent years. These are reflected in the active involvement of diverse stakeholders during policy formulation and implementation, as well as in participatory mechanisms such as Public-Private Dialogue Forums (PPDF).⁹⁰

⁸⁸ Wearetech.africa, 2024. *Zambia Launches Digital Health Systems to Improve Healthcare*. [online] Available at: <https://www.wearetech.africa/en/fils-uk/news/zambia-launches-digital-health-systems-to-improve-healthcare>

⁸⁹ Smart Zambia Institute, 2024. *MLGRD WORKING CLOSELY WITH SZI IN DIGITALISING LOCAL AUTHORITIES*. [online] Available at: https://www.linkedin.com/posts/smart-zambia_zambiadigitaltransformation-smartzambia-activity-7279802434883846144-Ytel/

⁹⁰ Public Private Dialogue Forum, 2022. *About the Public Private Dialogue Forum*. [online] Available at: <https://ppdf.org.zm/about-ppdf-2/>

Platforms such as public hearings and digital feedback tools have expanded opportunities for citizens and organizations to contribute to the policy-making process. However, not all stakeholder groups are equally engaged in these consultations. Targeted awareness-raising initiatives and improved outreach could help ensure broader and more inclusive participation across society.

Interconnectedness between public sector institutions is developing, with several frameworks in place to facilitate inter-agency coordination. However, differing institutional priorities and policy objectives at times result in fragmented approaches and a lack of cohesive strategies. Recognizing this challenge, initiatives such as the Digital Transformation Change Management Strategy (2023-2026) have been introduced to promote stronger collaboration between government entities and drive more unified digital transformation efforts.

Intellectual property policies

Zambia is a member of both the World Intellectual Property Organization (WIPO) and the African Regional Intellectual Property Organization (ARIPO), which work to harmonize and develop intellectual property (IP) laws across member states. Stakeholders acknowledge that the country has made progress in building its IP framework, with policies such as the Revised National Intellectual Property Policy (NIPP) 2020 and the National ICT Policy 2023 laying a foundation for innovation and entrepreneurship.

The Patents and Companies Registration Agency (PACRA) is the primary body responsible for registering, managing, and promoting IP rights, while the National Technology Business Centre (NTBC) supports the commercialization of local innovations. These efforts align with broader national goals of fostering economic growth, encouraging creativity, and driving technological advancement. According to WIPO, Zambia recorded 14 patent applications in 2022, six of which were filed by residents and eight by non-residents. PACRA also reported the granting of 12 patents and the renewal of 100 existing patents during the same year, reflecting a modest but growing level of patenting activity.⁹¹ The application fee for a patent is ZMW 333.30 for local applicants and ZMW 2 666.80 for foreign applicants. The registration process involves several stages, including application submission, examination, publication for opposition, and final registration. For trademarks, this process typically takes between 12 to 18 months.⁹²

Zambian universities help innovators with IP registrations and have established policies and structures to facilitate technology transfer and the commercialization of research outputs. At the University of Zambia (UNZA), the Technology Development and Advisory Unit (TDAU) is focused on developing and transferring appropriate technologies that support national development. Similarly, Copperbelt University (CBU) has introduced several key initiatives through its Directorate of Research, Innovation, and Consultancy (DRIC), which promotes impactful research and facilitates commercialization. Under DRIC, the Technology Management Office (TMO) manages IP assets, assesses inventions for commercial viability, and negotiates licensing agreements.

As well as universities, the Intellectual Property Hub Zambia is dedicated to raising awareness about the economic benefits of IP protection. Their mission is twofold: to nurture the value of creativity and idea protection among young creators, and to serve as a rich knowledge

⁹¹ PACRA, 2022. *PACRA 2022 ANNUAL REPORT*. [online] Available at: [2022-REPORT-WEB.pdf](#)

⁹² PACRA, 2025. *Our Fees*. [online] Available at: https://www.pacra.org.zm/?page_id=1103

resource on IP and its advantages for youth. The organization promotes the WIPO IP Diagnostics tool, a user-friendly, software-based tool that guides innovators through a series of questions related to their business, and responses to these questions generate a personalized report outlining potential intellectual property assets and offering insights into effective management strategies.⁹³

Although these structures are in place, stakeholders highlight the need for increased academic research funding and stronger collaboration with industry to scale up the commercialization of innovations. Key challenges remain, including limited public awareness of IP rights and insufficient incentives for R&D investment. At present, stakeholders state that businesses and citizens do not fully understand the importance of protecting their IP due to lack of knowledge and training. Addressing these gaps through targeted awareness campaigns, stronger enforcement mechanisms, and innovation-focused incentives will be crucial to strengthening the innovation ecosystem and increasing patent registration rates.

Research and development policies

The new 2025 National Science, Technology and Innovation (STI) Policy in Zambia serves as a blueprint for leveraging technology and innovation to drive inclusive and sustainable national development. The policy aims to position Zambia as a competitive player in the global economy by addressing key areas such as increasing investment in R&D, with a goal to raise gross expenditure on R&D from 0.28 per cent to 0.50 per cent of GDP by 2029. It also prioritizes the development of human capital by offering scholarships and mentorship to train at least 500 postgraduates in STEM fields.⁹⁴

A significant focus is on emerging technologies and the policy allocates funds to design regulatory frameworks and ethical guidelines for technologies such as AI and robotics, aiming to make the country a regional hub for innovation. To improve the commercialization of research outcomes, the policy plans to establish five new technology transfer offices, innovation hubs, and science parks, alongside a national start-up database. The policy further advocates for the integration and leveraging of indigenous knowledge systems (IKS) for national development, recognizing their importance alongside modern scientific advancements. The policy is aligned with broader national strategies, including the National Digital Transformation Strategy (2023-2027) and the 8NDP, to ensure a coordinated and comprehensive approach to building a knowledge-based economy.

Zambia has a number of national institutions that support R&D, including the National Health Research Authority (NHRA), which regulates and promotes health research, and NISIR, which conducts research across sectors such as food science, energy, and agriculture. Key research priorities include public health, economic diversification beyond copper mining, and climate change resilience. While capacity exists, there is room for scaling investment and coordination to strengthen the national research ecosystem.

While policies represent a forward-looking and strategic vision, it remains too early to assess their impact fully. Historically, limited financial resources, inadequate infrastructure, and challenges bridging the gap between research and commercialization have hampered progress. Despite

⁹³ Intellectual Property Hub Zambia, 2025. *About Us*. [online] Available at: <https://iphubzambia.com/>

⁹⁴ Republic of Zambia, Ministry of Technology and Science. *2025 National Science Technology and Innovation Policy*. [online] Available at: <https://www.mots.gov.zm/wp-content/uploads/2025/06/2025-National-Science-Technology-and-Innovation-Policy.pdf>

these obstacles, Zambia has made strides in securing international funding to support STI initiatives. The revised strategies emphasize applied research, improved knowledge transfer mechanisms, and enhanced commercialization opportunities for research outputs. Although still in the early stages of implementation, these policies mark a significant step towards strengthening the R&D and innovation landscape, with the potential to deliver meaningful advancements in future years.

ICT policies

Zambia has introduced a range of ICT policies aimed at advancing digital transformation and supporting socio-economic growth.

The National ICT Policy 2023 focuses on reducing the digital divide, fostering innovation, and promoting the integration of emerging technologies, such as artificial intelligence (AI) and blockchain, into priority sectors to improve development outcomes. Complementing this, the National AI Strategy provides a structured framework for the ethical and responsible use of AI, with an emphasis on transparency, accountability, and inclusivity. In parallel, the National Cybersecurity Policy aims to protect critical infrastructure, combat cybercrime, and establish a secure digital environment for both individuals and businesses. The Data Protection Act (2021) further supports this ecosystem by ensuring the lawful processing, storage, and sharing of personal data, bringing data protection practices in Zambia in line with international standards.

Together, these policies have contributed to tangible progress in areas such as digital infrastructure development, e-government services, digital skills training, cybersecurity resilience, and data privacy regulation. However, challenges remain. Issues such as policy enforcement gaps, unclear stakeholder roles, and limited regulatory capacity continue to hinder full and effective implementation. Stakeholders broadly support the direction of these initiatives but highlight the need for regular policy reviews, stronger enforcement mechanisms, and enhanced collaboration between regulatory agencies and industry players. Going forward, Zambia must focus on strengthening stakeholder coordination, ensuring timely policy updates, and cultivating an enabling regulatory environment that promotes innovation, protects users, and supports long-term entrepreneurial growth.

Education policies supporting ICT innovation and entrepreneurship

Zambia has recently introduced updated education policies aimed at advancing ICT integration and promoting entrepreneurship. The 2023 Zambia Education Curriculum Framework adopted a competency-based approach, prioritizing skills development to better prepare learners for participation in the global economy.⁹⁵ This framework restructured educational stages, including the introduction of advanced-level secondary education, to align essential skills with the ambitions outlined in Vision 2030.⁹⁶

Complementing this, the Ministry of Education 2022-2026 Strategic Plan emphasizes the delivery of accessible, inclusive, and high-quality education at all levels. A central component of the plan is its focus on science, technology, engineering, and mathematics (STEM) education, which aims

⁹⁵ Republic of Zambia, 2023. *2023 ZAMBIA EDUCATION CURRICULUM FRAMEWORK*. [online] Available at: <https://www.giakonda.org.uk/wp-content/uploads/2024/08/2025-New-Curriculum.pdf>

⁹⁶ Zambia Monitor, 2024. *Govt launches new education curriculum, says it would build needed skills to achieve Vision 2030*. [online] Available at: <https://www.zambiamonitor.com/govt-launches-new-education-curriculum-says-it-would-build-needed-skills-to-achieve-vision-2030/>

to enhance students' critical thinking, problem-solving abilities, and capacity for innovation. By prioritizing STEM, the Ministry seeks to equip learners with the skills required to engage in innovation and entrepreneurial ventures. The strategic plan also promotes alternative modes of education provision (AMEP), including the integration of ICT into teaching and learning processes, to increase flexibility and accessibility across education pathways. This approach is intended to cultivate a culture of innovation and adaptability among learners. Additionally, the plan focuses on youth and adult literacy education (YALE), incorporating digital literacy to ensure that individuals across all age groups can participate in the digital economy.⁹⁷ In doing so, the Ministry aims to empower citizens to engage in entrepreneurial activities and contribute to national development.

Improving educational infrastructure and resource availability is another priority area. The plan includes targeted initiatives to address infrastructural challenges, aiming to create an enabling learning environment that supports innovation, creativity, and entrepreneurship. These investments are seen as essential for effective teaching and learning, particularly in underserved areas.

Despite these efforts, challenges remain. For example, the government has incorporated computer studies into the national curriculum, aiming to enhance digital literacy among students. However, the effective implementation of ICT in classrooms varies, with urban schools generally having better access to technology compared to rural counterparts. Initiatives such as the Lenovo Tech for All Programme has provided training to over 440 teachers and 126 school leaders, equipping them with skills to incorporate technology into their teaching methodologies.⁹⁸ Programmes such as the eSchool 360 Expansion Project aim to deliver quality, low-cost education through holistic technology solutions, such as equipping teachers with tablets and projectors.⁹⁹ While these initiatives have shown promise, challenges persist, particularly in ensuring equitable access to ICT resources and training across all regions.

Stakeholders widely acknowledge the transformative potential of ICT in education and its role in fostering entrepreneurship. However, they express concern over inadequate resourcing and the slow pace of implementation of digital strategies. While supportive of the overarching goals of the policies, they stress the need for regular policy reviews and improved coordination among key actors, including government agencies, schools, and private sector partners.¹⁰⁰ To date, these policies have contributed to growing awareness of the importance of ICT in education and early steps toward integrating digital content into curricula. Nonetheless, progress has been limited by persistent infrastructure and resource deficits. To fully realize the vision of inclusive and innovation-driven education, Zambia must expand ICT infrastructure, scale up teacher training programmes, and ensure equitable access to technology, particularly across rural and underserved schools.

⁹⁷ Republic of Zambia, 2022. *2022 - 2026 STRATEGIC PLAN*. [online] Available at: <https://www.edu.gov.zm/wp-content/uploads/2024/07/MOE-STARTEGIC-PLAN.pdf>

⁹⁸ Camara Education, 2023. *Empowering Education in Zambia: The Impact of Digital Learning Centres and ICT Clubs*. [online] Available at: <https://camara.org/camara-education-and-lenovo-tech-for-all-project/>

⁹⁹ AIR, 2023. *The Zambia eSchool 360 Expansion Project: A Programme That Aims to Improve Education in Zambia*. [online] Available at: <https://www.air.org/project/zambia-eschool-360-expansion-project-program-aims-improve-education-zambia>

¹⁰⁰ East African Journal of Education and Social Sciences, 2024. *Effects of Free Education Policy on the Provision of Primary and Secondary Education in Zambia*. [online] Available at: <https://ejess.ac.tz/wp-content/uploads/2024/02/EAJESS-4-6-0336.pdf>

Finance policies

The National Financial Inclusion Strategy (NFIS) II 2024-2028 aims to build an inclusive financial system by improving access to affordable and sustainable financial services, particularly for underserved groups such as women, youth, rural populations, and persons with disabilities. The strategy prioritizes increased financial access for SMEs, rural communities, and the agriculture sector, while also promoting the uptake of digital financial services. It places strong emphasis on consumer protection, financial literacy, and the integration of environmental, social, and governance (ESG) principles into financial practices.¹⁰¹

To support innovation in financial services, Zambia has introduced regulatory sandboxes under the supervision of the Bank of Zambia (BoZ) and the Securities and Exchange Commission (SEC). These sandboxes provide a controlled environment for fintech start-ups to test new products and services without being immediately subject to full regulatory compliance, facilitating agile development and informed risk assessment.¹⁰²

Zambia is actively fostering financial innovation through regulatory sandboxes established by the Bank of Zambia and the Securities and Exchange Commission,¹⁰³ allowing fintechs to test products in controlled environments. Investor-friendly policies include reduced corporate tax rates for exporters, duty exemptions, and substantial incentives for companies operating in multi-facility economic zones (MFEZs), such as tax holidays and VAT deferment.¹⁰⁴ While access to startup financing remains limited, largely due to collateral requirements, some banks and microfinance institutions offer SME-targeted loans, and partnerships such as that between First Capital Bank and the European Investment Bank are helping to fill financing gaps, particularly in agriculture.¹⁰⁵ The banking sector is rapidly digitizing, with widespread mobile money adoption enhancing financial inclusion, and Zambia is implementing an open-source 'electronic Know Your Customer' (eKYC) system powered by MOSIP to streamline identity verification for digital services.¹⁰⁶ Together, these efforts reflect the growing commitment in Zambia to a more inclusive and innovation-driven financial ecosystem.

However, Zambia currently lacks a specific regulatory framework for crowdfunding. While the SEC acknowledges its potential to provide growth capital for local businesses and has expressed intent to develop regulations, the absence of a formal framework creates uncertainty for both investors and platform operators. Similarly, cryptocurrencies are not recognized as legal tender and remain largely unregulated. Both the Bank of Zambia and the SEC have issued public warnings about the risks associated with cryptocurrency investments, citing the absence of regulatory oversight for these digital assets. Additionally, Zambia does not yet have a dedicated fintech policy. The sector is governed under existing legislation, including

¹⁰¹ Republic of Zambia, 2024. *NATIONAL FINANCIAL INCLUSION STRATEGY II 2024-2028*. [online] Available at: https://www.boz.zm/sites/default/files/2026-03/NFIS_II_2024_-_2028.pdf

¹⁰² Bank of Zambia, 2024. *Regulatory Sandbox*. [online] Available at: <https://www.boz.zm/financial-stability/regulatory-sandbox>

¹⁰³ Securities and Exchange Commission, 2024. *Press Release - Regulatory Sandbox Framework for Capital Markets*. [online] Available at: <https://www.seczambia.org.zm/press-release-regulatory-sandbox-framework-for-capital-markets/>

¹⁰⁴ Embassy of Republic of Zambia, 2024. *Incentives for Investors*. [online] Available at: <https://www.zambiaembassy.org/page/incentives-for-investors>

¹⁰⁵ European Investment Bank, 2023. *Zambia: First Capital Bank Limited partners with the EIB to develop SMEs in the agriculture sector through a \$10 Million developmental line of credit*. [online] Available at: <https://www.eib.org/en/press/all/2023-354-first-capital-bank-limited-partners-with-the-european-investment-bank-to-develop-smes-in-the-agriculture-sector-through-a-usd10million-developmental-line-of-credit>

¹⁰⁶ Tech Africa News, 2025. *Zambia to Launch Open-Source eKYC System Powered by MOSIP*. [online] Available at: <https://techafricanews.com/2025/01/20/zambia-to-launch-open-source-ekyc-system-powered-by-mosip/>

the Banking and Financial Services Act No. 7 of 2017, which outlines licensing and operational standards for financial service providers, and the National Payment Systems Act No. 1 of 2007, which ensures payment system integrity. The Data Protection Act No. 3 of 2021 also applies to fintech operations, regulating the processing and protection of personal data. While these laws provide basic regulatory structure, the lack of a comprehensive fintech policy creates challenges for start-ups navigating compliance and innovation pathways.

Stakeholders acknowledge that regulators are generally supportive of digital financial solutions. However, the fragmented policy landscape struggles to keep pace with rapid technological change. There is growing consensus around the need for a dedicated fintech policy to address these gaps. Such a policy would offer clearer guidance, streamline regulatory processes, and establish a strategic vision for fintech development in Zambia. Further, effective implementation will require collaboration across government, regulators, and the private sector, along with the establishment of robust monitoring and evaluation systems to track progress and guide future policy decisions. Addressing these regulatory and structural gaps will be critical to supporting fintech growth and strengthening broader digital innovation ecosystem in Zambia.

SME policies

The government has introduced several policies aimed at supporting the development and sustainability of micro, small, and medium enterprises (MSMEs). The revised National MSME Development Policy (2023-2027),¹⁰⁷ along with its accompanying Implementation Plan, seeks to enhance the participation of MSMEs in the economy by improving competitiveness, advancing digital transformation, increasing productivity, and fostering a business-friendly environment to reduce operational costs. The Ministry of Small and Medium Enterprise Development and the Zambia Development Agency support the development of MSMEs. These firms operate across diverse sectors, with recent data from the revised National MSME Policy (2023) showing that 5 per cent are in construction, 4 per cent in agriculture, forestry, and fishing, and 2 per cent are in manufacturing. This indicates that a large proportion of MSMEs are active in other areas such as trade, services, and informal businesses, which together represent the bulk of the SME landscape in the country.

In the 2025 national budget, the government increased the allocation to the Zambia Credit Guarantee Scheme to ZMW 851.7 million, up from ZMW 386 million in 2024. This enhancement aims to facilitate greater access to affordable financing for SMEs¹⁰⁸. Additionally, the Constituency Development Fund (CDF) was raised to ZMW 5.6 billion in 2025 from ZMW 4.8 billion in 2024, with each constituency receiving ZMW 36.1 million. A portion of this fund is earmarked for local development projects, which can benefit SMEs through improved infrastructure and community-based initiatives.¹⁰⁹

Starting a business involves several steps, including name reservation, company registration with PACRA, tax registration, and obtaining the necessary licences. The registration costs vary by business type, ranging from ZMW 112.20 for a local company to ZMW 266.67 for a foreign

¹⁰⁷ Republic of Zambia, 2023. *REVISED NATIONAL ENTERPRISE DEVELOPMENT IMPLEMENTATION PLAN 2023 - 2027*. [online] Available at: <https://www.msme.gov.zm/wp-content/uploads/2023/12/Micro-Small-and-Medium-Enterprise-Development-Implementation-Plan-2023-2027.pdf>

¹⁰⁸ Zambian Government, 2025. *2025 National Budget to the National Assembly*. [online] Available at: <https://www.parliament.gov.zm/node/12248>

¹⁰⁹ Grant Thornton, 2024. *2025 Budget Bulletin*. [online] Available at: <https://www.grantthornton.uz/globalassets/1.-member-firms/bronze/zambia/gt-2025-zambia-national-budget-bulletin.pdf>

company.¹¹⁰ Zambia ranked 85th out of 190 in the World Bank Doing Business 2020 report, indicating moderate ease in starting a business.¹¹¹ In contrast, closing a business is comparatively straightforward, requiring submission of the BN Form XIII (costing ZMW 111.20) for business name deregistration, with further requirements for companies under the Corporate Insolvency Act No. 9 of 2017 if liquidation is involved.¹¹² The complexity of the process depends on the compliance status and financial condition of the business.

Key challenges continue to hinder the full realization of policy objectives. Stakeholders have noted that policy implementation often overlaps with existing business legislation, leading to confusion and inefficiencies. Entrepreneurs also face difficulties accessing adequate training in areas such as regulatory compliance, financial management, and market access. These gaps highlight the need for stronger institutional support to address structural barriers and better equip MSMEs to operate effectively in a complex business environment.

To further support MSME growth, the government has introduced tax incentives and financial benefits aimed at boosting productivity and enhancing competitiveness. However, the effectiveness of these incentives is closely tied to their transparent administration and accessibility. Persistent bottlenecks in policy delivery continue to undermine their potential impact. While the existing policy landscape provides a solid foundation for SME development, challenges such as regulatory overlaps, training deficits, and implementation inefficiencies must be addressed.

Overcoming these issues will require enhanced institutional capacity and sustained collaboration between government agencies, private sector actors, and support organizations. Strengthening these linkages is critical to building a more enabling environment for MSMEs and unlocking their contribution to the economic growth of Zambia.

Industrial policies

The National Industrial Policy (2018-2027) serves as a guiding framework to increase industrial productivity, promote value addition, and advance export-led manufacturing.¹¹³ These objectives are aligned with the long-term development vision, aiming to build a more resilient economy capable of withstanding global market volatility. Digitization has become a key pillar within this landscape, supported by the National ICT Policy (2023), which encourages the integration of digital technologies across industrial sectors. The alignment between industrial and ICT policies reflects a cross-sectoral approach, ensuring synergy in the pursuit of national development goals.

Certain industries have shown notable progress in terms of ICT adoption. The financial sector has witnessed significant digitization, with a marked increase in mobile money services and digital banking solutions. Efforts are underway to integrate digital technologies to enhance productivity and market access, though challenges such as limited infrastructure and digital literacy persist. Several sectors present opportunities for increased ICT integration. In agriculture, digital tools can enhance supply chain efficiency, deliver real-time market information, and

¹¹⁰ PACRA, 2025. *What do I do first?* [online] Available at: <https://info.pacra.org.zm/what-do-i-do-first/>

¹¹¹ World Bank, 2020. *Ease of Doing Business*. [online] Available at: <https://www.doingbusiness.org/content/dam/doingBusiness/country/z/zambia/ZMB.pdf>

¹¹² PACRA, 2025. *How do I deregister my business entity?* [online] Available at: <https://info.pacra.org.zm/how-do-i-deregister-my-business-entity/>

¹¹³ Republic of Zambia, 2018. *The National Industrial Policy*. [online] Available at: <https://faolex.fao.org/docs/pdf/zam224296.pdf>

support climate-smart farming practices. In education, expanding e-learning platforms and digital resources can improve access and learning outcomes, particularly in remote areas. The healthcare sector can benefit from telemedicine and digital health records, which streamline service delivery and patient management. Similarly, in tourism, digital marketing and online booking systems can significantly increase the visibility and accessibility of destinations, boosting both local and international engagement.

Awareness of industrial policies varies significantly across stakeholder groups. While larger enterprises and government institutions tend to demonstrate greater understanding and engage more actively in policy implementation, smaller businesses, particularly those in rural and underserved areas, often lack awareness of available opportunities and support mechanisms. This knowledge gap limits the extent to which these policies can benefit all actors within the industrial ecosystem. Targeted awareness campaigns and training initiatives will be essential to ensure more equitable participation in industrial growth.

Stakeholder views on industrial policies remain mixed. Many commend the government commitment to industrialization and acknowledge recent improvements in infrastructure. At the same time, concerns persist over slow policy execution and bureaucratic delays, which are seen as barriers to investment and innovation. Nonetheless, Zambia has made measurable progress in strengthening its industrial sector. Investments in industrial infrastructure and the development of mineral investment zones point to positive momentum.

However, challenges remain in ensuring that industrial policies are responsive to changing economic and technological conditions. Stakeholders have called for simplified regulatory processes and a policy environment that better supports entrepreneurship and innovation. There is also an urgent need for tailored policies that address the needs of emerging industries, such as renewable energy and advanced manufacturing, sectors that hold strong potential for Zambia to position itself competitively within the regional market.

Trade policies

The National Trade Policy (2018) forms the cornerstone of the trade framework of Zambia, with objectives focused on economic diversification, trade facilitation, and expanding market access for goods and services. It emphasizes the promotion of value addition, the removal of trade barriers, and the creation of a competitive trade sector that can thrive in both regional and global markets. The policy also underscores the importance of e-commerce, innovation, and the strategic use of intellectual property rights to support sustainable economic growth.¹¹⁴

The membership of Zambia in regional and international trade agreements, including the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC), and the African Continental Free Trade Area (AfCFTA), has played a critical role in expanding market access and encouraging cross-border trade. On a global level, the country benefits from preferential trade arrangements such as the Everything But Arms (EBA) initiative with the European Union and the African Growth and Opportunity Act (AGOA) with the United States, which provide duty-free and quota-free access to key international markets.

According to the Global Innovation Index (2025), Zambia ranked 90th in innovation inputs, which is higher than 2023. Zambia ranked 128th in innovation outputs, which is lower than the

¹¹⁴ Republic of Zambia, 2018. *The National Trade Policy*. [online] Available at: <https://www.mcti.gov.zm/wp-content/uploads/2024/01/National-Trade-Policy-2018.pdf>

previous year. During the last five reported years the exports of Zambia have increased by USD 3.59 billion from USD 12.4 billion in 2018 to USD 15.9 billion in 2023. The most recent exports are led by raw copper (USD 6.95 billion), refined copper (USD 2.83 billion), gold (USD 1.85 billion), precious stones (USD 515 million), and electricity (USD 325 million).¹¹⁵

Stakeholders generally regard trade agreements and policies as positive steps towards deeper economic integration and growth. Larger and export-oriented enterprises have been better positioned to leverage these agreements, contributing to increased export volumes and foreign exchange earnings. However, SMEs often face difficulties in accessing these opportunities due to limited awareness, capacity gaps, and bureaucratic challenges. Addressing these barriers is essential to ensure inclusive participation in trade benefits across the entire economy. Efforts to modernize trade infrastructure and streamline cross-border transactions have been ongoing. The introduction of digital tools to support customs clearance procedures has contributed to greater efficiency at border posts.¹¹⁶

Nevertheless, Zambia currently lacks a dedicated trade agreement that specifically supports the trade of ICT products and services. Stakeholders have expressed the need for targeted frameworks to better integrate ICT into trade policy and unlock its export potential. There is also a growing call for capacity-building programmes to equip businesses, particularly SMEs, with the skills and knowledge needed to effectively navigate international trade markets.

¹¹⁵ OEC, 2023. *Zambia*. [online] Available at: <https://oec.world/en/profile/country/zmb>

¹¹⁶ American Union Development Agency, 2024. *Driving Efficiency and Growth: Handover of ICT. Infrastructure to Enhance Coordinated Border Management at Chirundu One-Stop Border Post*. [online] Available at: <https://www.nepad.org/news/driving-efficiency-and-growth-handover-of-ict-infrastructure-enhance-coordinated-border>

4 Ecosystem challenges and opportunities

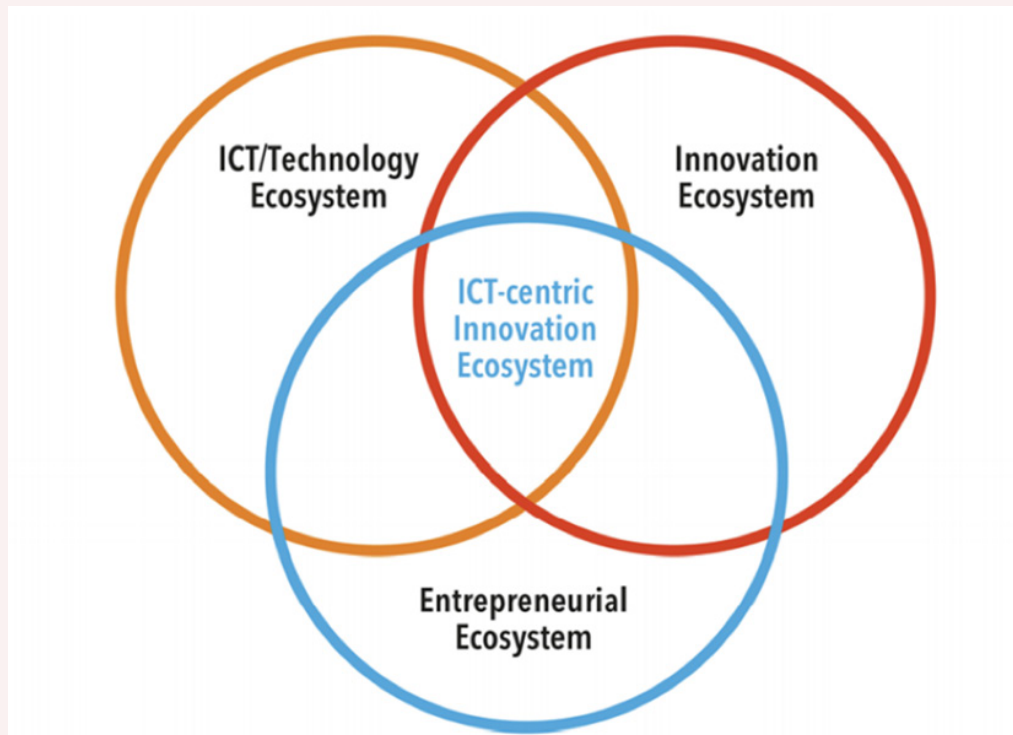
The three main ecosystems essential to the digital transformation journey of Zambia are:

- the innovation ecosystem (universities, research institutes, and the public sector);
- the entrepreneurial ecosystem (innovators and support organizations); and
- the technological ecosystem (high-tech, ICTs, technology business-to-business (B2B), and manufacturing companies).

Understanding the ICT-centric (digital) innovation ecosystem

The innovation ecosystem, the entrepreneurial ecosystem and the technology ecosystem are closely linked to developing the digital transformation landscape of a country. At the intersection of the three ecosystems lies the ICT-centric innovation ecosystem, also referred to as the digital innovation ecosystem.

Figure 3: Engines of growth



Source: ITU

The following section contains a brief analysis of each of the three ecosystems and ends with a macro level overview of the challenges and opportunities associated with each, as gathered through interviews and group discussions during the co-creation workshops with local stakeholders. Each ecosystem in terms of its current state, challenges and opportunities, are initially summarized in bullet points, followed by a detailed explanatory passage. A detailed analysis of the current landscape is presented in section 3, while the recommendations are covered in section 9 of this report.

4.1 Innovation ecosystem

The innovation ecosystem comprises research institutes, universities, public sector entities such as national innovation agencies and public sector funding agencies, the private sector, and other actors involved in commercialization. The innovation ecosystem plays an invaluable role in the national journey of innovation, especially in the launch of an innovation.

- *Despite being in its early stages of development, the government actively supports the innovation ecosystem through initiatives laying the groundwork for growth and technological advancement.*
- *While the government has invested in digital infrastructure, skills development, and innovation programmes, challenges remain in raising awareness, fostering stronger collaboration between stakeholders, and addressing funding gaps for research and development to unlock the full potential of the innovation ecosystem.*
- *Zambia can drive economic and technological growth by enhancing digital literacy, strengthening public-private partnerships, and fostering a collaborative innovation culture, positioning itself as a producer of ICT solutions and a key player in the regional economy.*

Overview of actions in the innovation ecosystem

The National Innovation Ecosystem in Zambia is in its formative stages, with the government playing a pivotal role in its development. The establishment of the National Technology Business Centre (NTBC) under the Ministry of Technology and Science exemplifies this commitment. The NTBC promotes, markets, and facilitates technology transfer to support innovation and entrepreneurship. Through NTBC, the government launched the National Innovation Initiative (NII) to identify and support innovative solutions that address community challenges nationwide. The NII was introduced in response to the National Science, Technology, and Innovation Policy 2020 and aligns with the Eighth National Development Plan (8NDP). Its four priority areas are mining and mineral processing, agriculture and agro-processing, and energy. University entrepreneurship initiatives have also been growing steadily, driven by a national push toward innovation, self-reliance, and economic diversification. Recognizing the critical role of entrepreneurship in tackling youth unemployment and driving sustainable economic growth, some universities have established dedicated entrepreneurship hubs, incubators, and training programmes. Institutions such as the University of Zambia (UNZA) and the Copperbelt University (CBU) have introduced entrepreneurship courses across various disciplines, equipping students with business development skills, financial literacy, and strategic thinking. These efforts are often supported by partnerships with government agencies, international organizations, and private sector actors, offering mentorship, access to funding, and exposure to real-world business environments. Student-led start-up competitions, innovation challenges, and networking events are common features, empowering students to transform their ideas into viable businesses.

Overview of challenges in the innovation ecosystem

Despite these efforts, the ecosystem continues to face several persistent challenges. Limited funding for research and development (R&D), inadequate infrastructure, and low awareness of intellectual property rights among local innovators hinder progress. Additionally, technology transfer offices within universities are still relatively new, and the number of applied research contracts remains low. Entrepreneurship programmes at universities also face a range of issues that limit their effectiveness. Inadequate funding and resources restrict access to modern facilities, business development tools, and seed capital for student start-ups. While theoretical content

is often well addressed, practical exposure, including internships, prototyping facilities, and business simulations, remains insufficient. Weak university-private sector collaboration further reduces opportunities for mentorship, market access, and experiential learning. There is also a shortage of qualified mentors and trainers who can guide students from idea development to business scaling. Many initiatives face issues of scalability and long-term sustainability, as they often rely on donor funding. Addressing these challenges requires a collaborative approach, involving greater government support, private sector engagement, and institutional reforms to build entrepreneurial universities in Zambia. Additionally, enhancing trust and collaboration between the private sector and academia, along with increased R&D funding, is vital to unlocking greater efficiency and driving innovation across the national ecosystem.

Overview of opportunities in the innovation ecosystem

The public sector offers several strengths that can be harnessed to drive entrepreneurship and innovation. The public sector has already created supportive legal and regulatory frameworks for entrepreneurship, research, and innovation. It also has access to funding mechanisms and international partnerships that can be channelled into strategic education and digital infrastructure projects. Furthermore, the public sector can align cross-ministerial priorities to support a cohesive entrepreneurial ecosystem and often acts as a trusted convener, facilitating collaboration among academia, industry, and civil society. To create more impact, the public sector and universities must focus on several critical areas. Funding and resource mobilization are essential, as is greater investment in entrepreneurship hubs and R&D. Universities should integrate practical entrepreneurial training and digital skills into their curricula. Strengthening industry-academia collaboration is also crucial to ensure that research is demand-driven and entrepreneurship initiatives are market-relevant. Furthermore, mentorship and capacity-building programmes should be scaled to provide consistent support for emerging entrepreneurs and researchers. Creating lasting impact will require behavioural and cultural shifts across all stakeholders. Universities must promote a culture of experimentation and risk-taking, where failure is viewed as a learning opportunity. At the same time, societal attitudes toward entrepreneurship must evolve, recognizing it as a viable career path on par with traditional employment. If these shifts are effectively achieved, Zambia could emerge as a regional leader in digital transformation, with technology driving innovation in key sectors such as agriculture, healthcare, and education. Universities and research centres could evolve into innovation hubs producing globally competitive ICT products and services, reducing dependency on imported technologies. Entrepreneurship could become a cornerstone of the economy, with start-ups contributing to job creation, economic diversification, and export growth.

4.2 Entrepreneurial ecosystem

The entrepreneurial ecosystem includes the entrepreneurs, their support systems, and the organizations that nurture business creation through the "valley of death" and subsequently accompany their growth into sustainable SMEs.

- *The entrepreneurial ecosystem is gradually expanding, supported by a mix of public and private incubators and partnerships from international development organizations, fostering innovation and start-up growth.*
- *Start-ups demonstrate potential but encounter significant challenges, including limited access to growth capital, inadequate infrastructure, and difficulties in scaling to regional or global markets.*

- *With enhanced access to funding, improved infrastructure, and stronger ecosystem support, Zambia has the potential to cultivate high-growth start-ups, accelerate innovation, and emerge as a regional hub for entrepreneurial success.*

Overview of actions in the entrepreneur ecosystem

The entrepreneurial ecosystem in Zambia is gradually evolving, supported by a growing range of public and private sector initiatives aimed at nurturing local talent. Entrepreneurs are increasingly identifying market gaps, developing creative solutions, and launching businesses that address pressing societal challenges. They play a vital role in introducing new technologies, business models, and sustainable practices, while contributing to job creation and economic diversification. The support system includes universities, incubators, accelerators, financial institutions, and NGOs, which offer essential resources such as mentorship, funding, and capacity-building programmes to help businesses survive the early stages. Incubators and accelerators provide structured growth pathways, access to business networks, and funding opportunities. Additionally, the Zambia Business Angels Network (ZBAN) hosts frequent 'demo days' to showcase pre-seed and seed deals, promoting early-stage investment in start-ups. International development organizations collaborate with local incubators to boost start-up development and expand entrepreneurship support. While many of these efforts remain concentrated in urban centres such as Lusaka, they have contributed to a more connected and coordinated start-up ecosystem than in previous years.

Overview of challenges in the entrepreneur ecosystem

Despite these positive developments, the entrepreneurial ecosystem in Zambia continues to face a range of systemic challenges. Entrepreneurs frequently struggle to secure early-stage funding, as financial institutions remain risk-averse and alternative financing models such as venture capital and angel investment are still underdeveloped. This financing gap often prevents promising ventures from surviving the "valley of death" or scaling to reach broader markets. In addition, inadequate infrastructure, including unreliable electricity and limited access to digital services, raises operational costs and limits competitiveness. Support systems, such as incubators, accelerators, and NGOs, often function in isolation, lacking a coordinated national strategy, which leads to duplication of efforts and inefficient use of resources. Many of these initiatives are also heavily donor-dependent, making them vulnerable to funding withdrawal. As a result, the ecosystem struggles to transition start-ups into sustainable SMEs, stalling progress in economic diversification, job creation, and technological innovation. Without increased collaboration and a cultural shift that embraces entrepreneurship as a central pillar of national development, the ecosystem will continue to fall short of its potential.

Overview of opportunities in the entrepreneur ecosystem

Zambian entrepreneurs are widely recognized for their resilience, adaptability, and innovative mindset, often devising creative ways to overcome obstacles. Many social entrepreneurs are actively addressing societal challenges in areas such as financial inclusion, agricultural productivity, and healthcare delivery. Their ability to challenge conventional models is contributing to positive social change and inclusive growth. Support networks, through mentorship, training, and access to resources, are fostering a collaborative environment conducive to business development. However, several priority areas must be addressed to unlock the full potential of the entrepreneurial ecosystem. Entrepreneurs need improved access to diverse financing

options, including venture capital, angel investment, and crowdfunding platforms. Additionally, strengthening digital and physical infrastructure is essential to enable broader market access and reduce barriers to scale. Access to market intelligence and stronger industry networks would further empower entrepreneurs to identify and act on growth opportunities. A growth mindset must be cultivated, encouraging entrepreneurs to view challenges as opportunities for innovation. Risk-taking should be celebrated, and failure reframed as a valuable learning experience. To support this cultural shift, support systems must adopt a more collaborative and transparent approach, working together to align efforts with shared national goals. A long-term strategic vision is also needed, one that prioritizes sustainable growth, embraces emerging technologies, and promotes innovative business practices. If these changes are implemented, the entrepreneurial ecosystem could become a catalyst for producing high-growth start-ups, contributing significantly to the economic development of Zambia and to regional competitiveness.

4.3 Technology ecosystem

The technology ecosystem includes high-growth technology companies, equipment manufacturers, systems integrators, companies in the ICT sector, and B2B technology platforms supporting SMEs. The development of the technology ecosystem is essential to the ability of a country to benefit from technological innovation and create high-growth industries and jobs.

- *The technology ecosystem has grown driven by digital financial services, supportive ICT policies, and increased digitization across sectors such as e-commerce, e-health, and e-education.*
- *Challenges such as inadequate digital infrastructure, limited Internet access, and low digital literacy, particularly in rural areas, hinder the adoption of digital tools and platforms.*
- *The technology ecosystem shows economic growth, job creation, and innovation potential, supported by a growing network of tech start-ups, digital financial services, and innovation hubs.*

Overview of actions in the technology ecosystem

The technology ecosystem in Zambia has made significant strides in recent years, marked by several commendable achievements. The rise of digital financial services, including mobile banking and fintech platforms, has revolutionized financial inclusion, enabling SMEs and individuals, especially in remote areas, to access essential financial services. The National ICT Policy has provided a strong policy foundation, creating an enabling environment for sector growth. The government has taken steps to digitize public systems and promote sectors such as e-commerce, e-agriculture, e-health, and e-education, laying the groundwork for broader digital transformation. The ecosystem comprises technology companies, ICT service providers, systems integrators, and B2B technology platforms that support SMEs. It spans across key subsectors, including fintech, software development, e-commerce, and digital services, all of which play a central role in advancing digital adoption and creating employment opportunities. Multinational telecommunication companies, including MTN, Airtel, and IHS Towers, alongside the state-owned Zamtel, form the backbone of the digital infrastructure, delivering essential mobile, data, and connectivity services. The liberalization of the international Internet gateway has further improved connectivity, opening up space for private-sector innovation and expanding digital access.

Overview of challenges in the technology ecosystem

Despite these advancements, the technology ecosystem in Zambia faces several critical challenges. Chief among these is inadequate digital infrastructure, particularly in rural and underserved regions. Limited access to high-speed Internet, frequent power outages, and insufficient access to technological hardware hinder businesses, start-ups, and individuals from fully leveraging digital tools. This contributes to digital exclusion, concentrating opportunities for innovation, e-commerce, and remote work within urban centres and marginalizing rural communities. At the societal level, low digital literacy and resistance to technological change further obstruct adoption. Misconceptions about technology, fears of job displacement due to automation, and cultural resistance to digital tools limit the uptake of innovation across sectors. In addition, there is a shortage of skilled professionals in critical areas, including software development, cybersecurity, and data analytics. Many young people lack access to quality digital education and training, resulting in a significant talent gap. This gap not only constrains the growth of local tech companies but also leads to increased reliance on foreign expertise, driving up operational costs and undermining the self-sufficiency of the technology ecosystem. The limited pool of qualified talent also fuels competition among firms, further increasing labour costs and creating challenges for sustained growth.

Overview of opportunities in the technology ecosystem

Despite these challenges, the technology ecosystem in Zambia holds significant potential for economic transformation, job creation, and innovation. Notable strengths include a growing network of tech start-ups, digital financial services, and innovation hubs. The continued rise in mobile technology adoption and the expansion of fintech solutions have improved financial inclusion and expanded service access, creating a strong base for digital growth. The geographical position of Zambia in Southern Africa also presents an opportunity to become a regional hub for digital trade and technology solutions. ICT-focused government policies and initiatives to enhance digital infrastructure and digital literacy further reinforce this potential. To fully unlock these opportunities, the ecosystem must invest in digital skills development, close the talent gap, and build stronger research and innovation capacities. Collaboration between academia, industry, and government will be essential to ensure that education and training align with real market needs. Additionally, improving access to growth capital through targeted incentives can attract both local and international investment. To succeed, the ecosystem must embrace a culture of collaboration, knowledge-sharing, and long-term strategic planning. With the right interventions, the technology ecosystem in Zambia could nurture high-growth tech start-ups, attract foreign direct investment into the ICT sector, and potentially produce its first technology unicorns, positioning the country as a regional leader in digital innovation.

4.4 Macro challenges

At a macro level, the three ecosystems face some common challenges.

- *Limited access to finance and investment opportunities restricts the growth and scalability of all organizations.*
- *A persistent skills gap leaves ecosystems struggling to find talent with technical expertise and the 21st-century skills needed to drive innovation and growth.*
- *Insufficient infrastructure and limited digital connectivity create barriers, especially in rural areas, slowing progress and widening economic inequalities.*

- *Fragmented collaboration among stakeholders weakens coordination, leading to duplicated efforts and missed opportunities for collective growth.*

5 Stakeholders

Understanding the stakeholders

Collaboration between key actors in the innovation ecosystem is the foundation of the assessment process and drives the actions taken to build the ecosystem.

The stakeholders are mapped across six key stakeholder groups: academia, entrepreneurs, entrepreneurial support networks, finance, private sector, and public sector. These stakeholders are identified through close consultation with the national partner agency to ensure quality engagement at different milestones of the project. An important part of the country review then is finding ways of identifying and engaging with a pool of stakeholders across diverse groups.

The Table below lists the many stakeholders who were mapped and/or have contributed to the development of this digital innovation profile across the six key stakeholder groups of the innovation ecosystem. Stakeholders who participated in the co-creation workshop and/or one-on-one qualitative interviews are marked as "(engaged)".

	Stakeholders (in alphabetical order)
Academia	<ul style="list-style-type: none"> • Copperbelt University Innovation Hub (engaged) • Kabwe Institute of Technology • Lusaka Business and Technical College • Mulungushi University (engaged) • NIPA (engaged) • University of Lusaka (engaged) • University of Zambia (engaged) • Zambia University College of Technology (engaged) • ZCAS University (engaged)
Entrepreneurs	<ul style="list-style-type: none"> • Afridelivery • Bosso Africa • ComGrow • Dawa Health (engaged) • Dita Logistics (engaged) • Eco Cube • Ebusaka (engaged) • eMiska (engaged) • Jida Enterprise (engaged) • Kamsel Traverse (engaged) • Koloso (engaged) • Kwela Zambia • Luyypia (engaged) • Musanga • Nyamula (engaged) • Petrichor5 (engaged) • Promaid (engaged) • Zipangile Digital Media Services (engaged)

(continued)

	Stakeholders (in alphabetical order)
Entrepreneurial support networks	<ul style="list-style-type: none"> • ABSA Innovation Lab • Accelerated Growth for SMEs Zambia • Adanian Labs • African Women's Entrepreneurship Programme (AWEP Zambia) • Asikana Network (engaged) • Bongohive Innovation Hub (engaged) • Citizens Economic Empowerment Commission (CEEC) (engaged) • Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (engaged) • Zambian Financial Sector Deepening (FSDZ) • Impact Hub Lusaka (engaged) • Irish Aid • Jacaranda Hub (engaged) • Kula Tech Hub (engaged) • National Technology and Business Centre (NTBC) (engaged) • Nyamuka Zambia (engaged) • Private Enterprise Programme • SHE Entrepreneur (engaged) • Start-up Grind • Techtrends Zambia (engaged) • UNDP Accelerator Lab • United Nations Development Programme (UNDP) (engaged) • United Kingdom Department for International Development (UKAid) • United States Agency for International Development (USAID) (engaged) • Women's Entrepreneurship Access Centre (WEAC) • Zanaco Innovation Lab (engaged) • Zambia Chamber of Commerce Trade and Industry (engaged)
Finance	<ul style="list-style-type: none"> • ABSA Bank (engaged) • Amano Capital • Atlas Mara • Bank of China • FNB Bank (engaged) • FINCA • Financial Sector Deepening Zambia (engaged) • Investrust Bank • Kukula Capital (engaged) • Stanbic Bank (engaged) • The Bank of Zambia (engaged) • Zambia National Commercial Bank (engaged) • Zenga Ventures

(continued)

	Stakeholders (in alphabetical order)
Private sector	<ul style="list-style-type: none"> • ACCA Zambia • Airtel (engaged) • Dimension Data • Fibrecom (engaged) • Huawei • Infratel Zambia (engaged) • Inq. Digital • Konkola Copper Mines Plc • Lafarge Zambia • Liquid (engaged) • MTN (engaged) • Net One • Paratus Telecommunications Ltd • Probase Zambia Limited (engaged) • Prospero • SmartNet • Zamtel (engaged) • ZTE Corporation
Public sector	<ul style="list-style-type: none"> • Ministry of Agriculture • Ministry of Commerce Trade and Industry (engaged) • Ministry of Finance and National Planning • Ministry of Health (engaged) • Ministry of Higher Education • Ministry of Mines and Minerals Development • Ministry of Small and Medium Enterprise Development (engaged) • Ministry of Technology and Science • Ministry of Youth, Sports and Arts (engaged) • National Institute for Scientific and Industrial Research (engaged) • National Technology and Business Centre (engaged) • Patents and Companies Registration Agency (PACRA) (engaged) • Smart Zambia Institute (engaged) • Zambia Bureau of Standards • Zambia Development Agency (engaged) • Zambia Information and Communications Technology Authority (ZICTA) (engaged) • Zambia Research and Education Network (Zamren) (engaged)

6 Ecosystem maturity map

Understanding the ecosystem maturity map

The ecosystem maturity map, also referred to as the innovation journey map, highlights the work that needs to be done in the ecosystem to harness innovation on a transformative journey from pre-ideation to high growth. It describes stakeholder roles and actions in support of entrepreneurs and innovators at each stage of the start-up lifecycle. The colour coding identifies areas that are well-supported (green), inadequate (yellow) and missing or weak (red). In some cases, to arrive at a consensus with the group, orange has been used to indicate maturity between a red and a yellow; and light green has been used to indicate maturity between a yellow and a green.

The heatmap of stakeholders in the ecosystem and the current status of their jobs-to-be-done is based on interviews and group discussions in co-creation workshops with local stakeholders and is further validated by secondary research and literature reviews.

It must be understood that the innovation lifecycle or entrepreneurial journey is not linear. Instead, it is made up of a series of jobs-to-be-done across different stages of the cycles. In the pre-ideation stage, key actors plant the seeds of support in the innovation ecosystem. In the ideation stage, innovations are developed but have not yet been incorporated as businesses. In the start-up stage, innovations evolve from concepts into businesses. The “valley of death” is a challenging stage of development where entrepreneurs need strong support to survive. In the SME stage, the velocity of start-up growth increases as they expand rapidly into established businesses, reach steady-state, or exit through buyouts or initial public offerings (IPOs).

There is a need for a comprehensive understanding of how ecosystem actors can work together to implement national development priorities within the maturity ecosystem of digital innovation. Initiatives that are constructed in silos might lead to duplication of efforts and wasted resources.

In Figure 4 the Ecosystem Maturity Map in Zambia shows an ecosystem in an early-stage state. Profiling of key stakeholder actions is necessary to accelerate digital transformation.

Figure 4: Ecosystem Maturity Map in Zambia

Actors	Cycle Stage				
	PRE-IDEA	IDEATION	STARTUP	THE "VALLEY OF DEATH"	SME
Entrepreneurs	Entrepreneurial interest	Engage with problems	Develop business models	Build collaboration	Expand
Finance	Research funding	Seed funding	Angel investment	Venture capital	Business finance and loans
Entrepreneurial Support Networks	Entrepreneurial events	Hackathons and competitions	Co-working and support	Incubators and accelerators	Business association
Private Sector	Success stories	Research programmes	Lab programmes	B2B & support services	Skill training programmes
Academia	Community of entrepreneurs	Basic Research	Spin offs	Soft skill trainings	Human capital
Public Sector	Vision and strategy	IP & R&D support	Tax support	Public procurement	Trade policy

Source: ITU

6.1 Entrepreneurs

- There is a growing interest in entrepreneurial culture among local talent at the pre-idea stage; however, many still prioritize stable employment, particularly with international organizations or in the public sector.
- Innovators often address local problems, but many ideas replicate successful models from elsewhere rather than introducing novel innovations.
- Entrepreneurial education and support systems are insufficiently developed, resulting in weaker business models and higher start-up failure rates, though recent initiatives have aimed to improve these issues.
- Entrepreneurs are eager to collaborate, but the lack of mentors, role models, and structured peer support networks limits the capacity of the ecosystem for sustainable growth.
- Start-ups encounter significant difficulties transitioning into high-growth SMEs or pursuing buyouts or IPOs, restricting their contribution to economic development.

6.2 Finance

- Limited funding is available for innovators undertaking basic or applied research, stifling innovation and intellectual property development.
- Early-stage entrepreneurs frequently depend on government grants or NGO funding, but these resources are insufficient to foster robust ecosystem growth.
- High-risk investment, such as that provided by angel investors or venture capital, is sparse, constraining the scaling potential of early-stage ventures.

- *Few mechanisms exist to help start-ups overcome the “valley of death,” with limited access to growth capital for scaling firms.*
- *SMEs with established business models and collateral can typically secure traditional bank loans, but the stringent requirements exclude many smaller ventures.*

6.3 Entrepreneurial support networks

- *Networking events, hackathons, and pitch competitions are gaining popularity in urban centres such as Lusaka, though rural areas remain underserved.*
- *Opportunities for innovators to validate their ideas are increasing, but long-term, holistic support for scaling ventures is still lacking.*
- *Co-working spaces and innovation hubs have emerged in urban areas, offering essential resources and support to entrepreneurs, but these are still insufficient to support ecosystem growth.*
- *Incubators and accelerators provide valuable guidance, but limited programme duration and resources often hinder start-ups from transitioning to high-growth stages.*
- *Business associations and chambers support local firms, but their focus on established organizations often leaves smaller start-ups and SMEs without adequate representation.*

6.4 Private sector

- *A few success stories from local entrepreneurs exist but are not widely publicised, reducing their impact in inspiring the next generation of innovators.*
- *Larger corporations occasionally fund research and innovation, but these efforts are generally limited to internal projects, with minimal support for external ventures.*
- *Corporate innovation teams exist in some large firms, but partnerships with external start-ups remain underdeveloped.*
- *Limited private sector engagement in supporting small B2B firms exacerbates start-ups' early-stage challenges.*
- *Workforce development initiatives are more common in larger organizations, but SMEs often lack the resources to offer similar programmes, contributing to a skills gap.*

6.5 Academia

- *Certain universities provide supportive environments for entrepreneurship, but most higher education institutions focus on producing employable graduates rather than fostering entrepreneurs.*
- *Limited basic research inhibits the creation of innovative ideas that could lead to commercial applications.*
- *Frameworks for transitioning academic research into start-ups are underdeveloped or non-existent, curbing the potential of the ecosystem for innovation.*
- *Training programmes for university entrepreneurs are beneficial but lack the scale and reach required to create a significant impact.*
- *A persistent skills gap among graduates forces employers to provide additional training, slowing the integration of talent into innovative industries.*

6.6 Public sector

- *The government has created policy frameworks to encourage entrepreneurship and innovation, but implementation and coordination remain inconsistent.*
- *Research funding is minimal, though international collaborations and funding programmes provide supplementary support.*
- *Tax incentives for specific sectors, such as agriculture and ICT, have encouraged growth, but broader reforms are needed to benefit the wider entrepreneurial ecosystem.*
- *Improvements in public procurement processes have enhanced access for smaller firms, though limited capacity and training prevent many from fully benefiting.*
- *Policies supporting trade and investment are in place but require greater awareness and stronger implementation mechanisms to deliver their intended benefits to start-ups.*

7 Relevant practices

During the assessment process, a combination of research and stakeholder engagements highlighted the following initiatives as noteworthy practices within the ecosystem, recognized for their relevance and potential contribution to strengthening the innovation ecosystem in Zambia.

[BongoHive](#)

BongoHive, established in 2011 in Lusaka, is the first technology and innovation hub in Zambia. It was co-founded by Lukonga Lindunda, Bart Cornille, Simunza Muyangana, and Silumesii Maboshe. The hub aims to support scalable start-ups by enhancing skills, accelerating growth, strengthening networks, increasing collaboration, providing a forum for idea exchange, and reducing barriers to entrepreneurship. Since its inception, BongoHive has hosted over 500 events, supported more than 2 000 businesses, and benefited over 9 500 individuals. Its programmes, such as the Discover Pre-Accelerator and Launch Accelerator, have guided start-ups through their entrepreneurial journeys, helping them refine business ideas and accelerate growth. Notable alumni include ZPOS, a digital platform for micro-merchants, and Mummies and Munchkins, a fashion brand for maternity and baby clothes. Through its initiatives, BongoHive has significantly contributed to the tech and start-up ecosystem in Zambia, fostering innovation and entrepreneurship nationwide.

[Citizens Economic Empowerment Commission \(CEEC\)](#)

The Citizens Economic Empowerment Commission (CEEC) was established under the Citizens Economic Empowerment Act No. 9 of 2006 and operates as a statutory body under the Ministry of Small and Medium Enterprise Development. CEEC aims to promote broad-based economic empowerment by enabling equitable participation in economic activities for historically disadvantaged groups, including women, persons with disabilities, and individuals from underprivileged backgrounds. Its objectives include increasing citizen ownership and control over production resources, supporting businesses with varying ownership structures, and addressing economic imbalances. CEEC initiatives include the development of industrial yards in several towns to bolster light manufacturing and job creation, managing a ZMW 440 million Aquaculture Seed Fund to position Zambia as a fish product exporter, and implementing a ZMW 26 million cashew grant facility to enhance value addition in the Western Province. Additionally, CEEC has launched a cassava commercialization programme, supporting 22 companies across various provinces and potentially creating over 12 000 jobs.

[Lupiya](#)

Lupiya, a Zambian microfinance start-up, was co-founded in 2016 by Evelyn Chilomo Kaingu and Muchu Kaingu. The company promotes financial inclusion by providing microloans to individuals and small businesses, with a particular focus on empowering women entrepreneurs. Operating as a digital, branchless platform, Lupiya simplifies the lending process, making financial services more accessible across the country. In 2020, the company secured a USD 1 million investment from Enygma Ventures to support its expansion. By 2023, Lupiya had raised an additional USD 8.25 million in a Series A funding round led by Alitheia IDF Fund, with contributions from INOKS Capital SA and KfW DEG. These funds were used to enhance its technological infrastructure, diversify product offerings, and extend its reach. The company has gained international recognition, including a commendation from United States Vice President

Kamala Harris during her visit to Zambia in March 2023 for its efforts in advancing financial inclusion. In June 2024, Lupiya won the GITEX Africa Supernova Challenge, earning a USD 50 000 prize to further its mission of expanding financial services to underserved communities.

[Mukuba University Innovation Pod \(UniPod\)](#)

The Mukuba University Innovation Pod (UniPod), launched in February 2024, is a joint venture between the UNDP and the Copperbelt University (CBU). The UniPod aims to enable university students to explore creative and forward-thinking ideas during their studies. It is supported by cutting-edge equipment and advanced software to facilitate ideation and prototyping. Key goals include developing digital fabrication skills, fostering the creation of marketable products from innovative concepts, and promoting gender balance in the innovation ecosystem by ensuring that 50 per cent of participants are women. Although outcomes have not yet been documented due to its recent launch, the UniPod is expected to significantly contribute to the innovation ecosystem by supporting young entrepreneurs and advancing creativity.

[The National Technology Business Centre \(NTBC\)](#)

The National Technology Business Centre (NTBC) was established as a statutory body under the Ministry of Technology and Science by the Science and Technology Act No. 26 of 1997 and Statutory Instrument No. 136 of 1999. The primary objective of the NTBC is to facilitate the development, acquisition, and commercialization of technology to support economic growth and job creation in Zambia. It acts as a link between innovators, researchers, and the business community to ensure that technological innovations translate into commercial ventures. Key initiatives include the management of the Technology Business Development Fund (TBDF), which provides financial grants to entrepreneurs to commercialize innovative products and services. The centre also runs incubation programmes, provides business development support services such as intellectual property advice, and actively promotes a culture of innovation through partnerships and various national initiatives. Through these efforts, the NTBC aims to enhance productivity and competitiveness across various sectors, addressing the gap between technological research and its practical application in the market.

[Zambia Business Angels Network \(ZBAN\)](#)

The Zambia Business Angels Network (ZBAN), established in 2021, is the first business angel network in Zambia and was created to address funding gaps in the entrepreneurial ecosystem and support the growth of start-ups and early-stage ventures. ZBAN is a member-led organization composed of private individuals who provide capital, mentorship, experience, and connections to foster SME success. The network aims to drive economic development by establishing mechanisms for the sustainable growth of SMEs across Africa. Since its inception, ZBAN has invested over USD 210 000 in various ventures, including USD 8 000 in Mighty Fin, a local fintech company. These investments have led to the creation of more than 90 jobs and supported over seven start-ups through mentorship programmes. ZBAN has also secured two Catalytic Africa matching funds, further amplifying its impact on the entrepreneurial ecosystem in Zambia.

[Zanaco Innovation Lab](#)

The Zanaco Innovation Lab, established by the Zambia National Commercial Bank (Zanaco), aims to nurture entrepreneurial skills among young people in Zambia. In August 2023, Zanaco, in collaboration with WATER FOR WATER (WfW), launched the Zanaco Green Innovation

Challenge, an 18-month programme designed to support start-ups focused on sustainability. The initiative includes a business and design boot camp, mentorship opportunities, and guidance on developing products and services. Successful teams are awarded seed funding, with Zanaco allocating ZMW 3 million to the programme. The challenge addresses critical areas such as clean water and sanitation, responsible consumption and production, and climate action, aligning with Sustainable Development Goals 6 (Clean water and sanitation), 12 (Responsible consumption and production), and 13 (Climate action).

[The Zambia Information and Communications Technology Authority \(ZICTA\)](#)

The Zambia Information and Communications Technology Authority (ZICTA) is a statutory body that regulates the ICT, postal, and courier sectors in Zambia. ZICTA has had a multifaceted impact on the digital landscape. Its regulatory efforts have fostered a competitive market for telecommunication operators, leading to increased mobile coverage and overall growth in the ICT sector. Furthermore, ZICTA addresses the digital divide through the Universal Access and Service Fund (UASF), which aims to provide affordable broadband to underserved areas and public institutions such as schools and universities, enhancing learning and research. A key initiative is the ICT Innovation Programme and since its inception, the programme has empowered over 600 innovators, successfully commercialized over 30 startups and created over 200 jobs. These results reflect its significant impact on community development, particularly in underserved sectors such as agriculture, healthcare, education, and financial inclusion. Additionally, the role of ZICTA has been strengthened by recent legislation, allowing it to improve the national cyber-resilience and promote a secure digital environment for transactions and daily life.

8 Perspectives on national priorities

Understanding the national vision and key strategies

A clear vision for digital transformation, shared at a community or national level, results in synergizing the resources and efforts towards one shared objective. It is important to understand that the digital economy is a product or outcome of digital transformation in a country. Stakeholder visions and strategies can be aligned with this goal, tearing down legacy silos and enabling a collective understanding of gaps and opportunities. This alignment will lead to the creation of a cohesive common agenda.

Most countries have established their national vision for a digital economy, drawing on national priorities as well as regional and global frameworks. The national vision is essential to have a common language among stakeholders to avoid miscommunication or misleading information. Most countries are also enacting various strategies, including digital economy strategies, to achieve the vision.

Zambia has set a clear agenda for digital transformation as a driver of improved service delivery and economic growth. The National Digital Transformation Strategy (NDTS) 2023-2027, guided by the National ICT Policy of 2023, reflects the ambition of the government to build an inclusive and digitally empowered economy. The NDTS was developed by the Ministry of Technology and Science. This strategy aims to integrate digital technologies across all sectors to enhance productivity, create jobs, and promote economic growth, aligning with Zambia's Vision 2030 to become a digitally empowered society. Structured around the five pillars of digital infrastructure, digital platforms, digital services, digital literacy and skills, and digital innovation and entrepreneurship, the NDTS offers a focused roadmap to expand digital services, boost productivity, and foster innovation across sectors. Grounded in principles such as good governance, inclusivity, and collaboration, its success will depend on coordinated action and sustained engagement from all stakeholders.

National vision

"An Integrated inclusive and digitally empowered nation by 2030."
National Digital Transformation Strategy 2023-2027

Digital transformation strategies

The development of digital strategies to accelerate digital transformation and benefit populations is based on:

- Driving digital transformation in the public sector or enabling access to efficient public services for citizens and the private sector by promoting concepts such as transparency, e-governance, laws and regulations, one-stop services and e-citizens.
- Achieving social goals such as improved education and healthcare that promote inclusion and diversity while enhancing digital skills across the workforce to support the integration of new technologies.
- Benefiting key economic sectors vital to employment and inclusion, such as mining, agriculture, energy, and healthcare, by transforming traditional industries, improving productivity, and promoting sustainable development to ensure successful participation in the global digital economy.
- Promoting environmental sustainability through consideration of digital innovation and entrepreneurship.

Digital transformation pillars			
Governance	Social	Economic	Environmental
Strategic pillar: Digital infrastructure	Strategic pillar: Digital services	Strategic pillar: Digital innovation and entrepreneurship	Strategic pillar: Digital platforms
Strategic pillar: Digital platforms	Strategic pillar: Digital literacy and skills		

The National Digital Transformation Strategy (NDTS) 2023-2027 aims to transform Zambia into a digitally empowered and inclusive society by 2030. Its primary objectives include enhancing digital infrastructure, promoting digital literacy, fostering innovation, and integrating digital technologies across all sectors to drive economic growth and improve public service delivery.

The strategy is spearheaded by the Ministry of Technology and Science, which is responsible for overseeing its implementation and ensuring alignment with national development goals. The ministry collaborates with various stakeholders, including other government agencies, the private sector, and international partners, to achieve the objectives of the NDTS. By focusing on these areas, the NDTS seeks to create a robust digital ecosystem that supports innovation, enhances service delivery, and contributes to the socio-economic development of Zambia.

The National Digital Transformation Strategy 2023-2027 also aligns with the African Union Agenda 2063, which envisions a prosperous, integrated, and digitally connected continent. By prioritizing digital infrastructure, skills, innovation, and inclusive access, the strategy contributes to realizing the Agenda 2063 goals of inclusive growth, regional integration, and a knowledge-driven economy, and helps position Zambia as an active player in the digital future of Africa.

In the next section of this report, ITU offers a variety of recommendations to support Zambia and its vision. These recommendations are targeted towards strengthening the executive programmes and related strategies to achieve the goals of Vision 2030. These recommendations include specific new measures, policies and initiatives that can propel the country and its stakeholders towards the national ambition of becoming a prosperous middle-income nation.

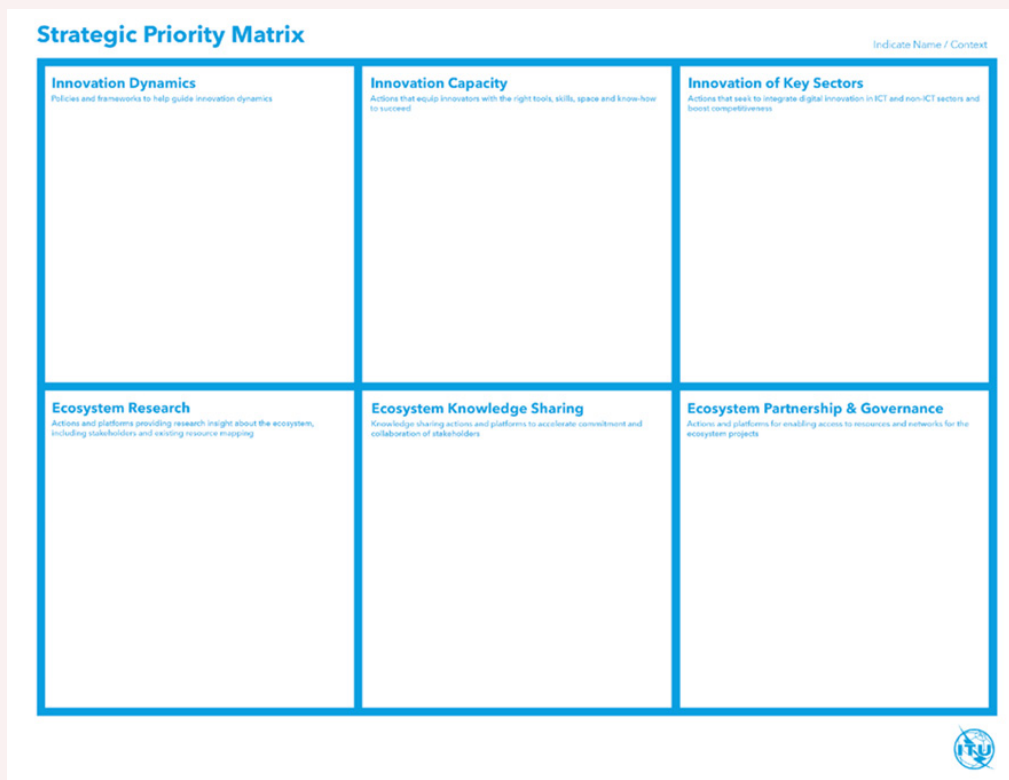
9 Recommendations

Understanding the strategic priority matrix

Identifying the most critical needs and solving them within resources in an ecosystem is an important consideration. Without prioritization and proper planning, success can be limited. Developing the capabilities of an ecosystem requires an agreement from stakeholders on key recommendations and key performance indicators to monitor them.

The strategic priority matrix identifies actions, programmes, policies and initiatives that must be in place to unlock the key enablers necessary for digital transformation. The strategic priority matrix helps to develop a high-priority roadmap that amplifies ecosystem good practices and fills in the gaps identified. This tool allows stakeholders to identify actions that need to be taken to support the ecosystem and propose missing elements as new complementary actions for the organic development of the ecosystem. The actions proposed need to be aligned with the national strategies of the country and should facilitate the upgrading of ICT policies and programmes. All stakeholders should agree on the strategic priorities.

Figure 5: Strategic priority matrix



Source: ITU

The opportunities and strategic priorities for the ecosystem outlined in this section were identified through group discussions with local stakeholders during co-creation workshops supported with detailed complementary information presented in Appendix 1.

Three strategic priorities guide the development of the innovation ecosystem. These focus on actions that enhance the nurturing environment and direct efforts toward key sectors:

- innovation dynamics;
- innovation capacity; and
- innovation in key sectors.

Three additional cross-cutting strategies priorities help mature the ecosystem through actions that strengthen knowledge and linkages within the ecosystem:

- ecosystem research;
- ecosystem knowledge sharing; and
- ecosystem partnership.

The Table below presents key recommendations aligned with these six strategic priorities, that will help develop and mature the ecosystem to achieve the national ambition for digital transformation.

Ecosystem strategies and recommendations			
Strategic priorities	Timeframe		
	Short-term (Year 1)	Medium-term (Year 2)	Long-term (Year 3 onwards)
Innovation dynamics (ID) <i>Policies and strategies to help guide innovation dynamics</i>	ID1: Streamline strategies related to digital innovation to reduce duplication, including the National Digital Transformation Strategy (2023-2027) and the Digital Strategy (2023-2026).	ID5: Promote domestic manufacturing through incentives and subsidies to reduce dependence on ICT imports.	ID8: Introduce flexible regulatory frameworks for emerging funding models such as crowdfunding and venture capital.
	ID2: Establish a public awareness campaign to promote one clear vision and strategy to foster digital innovation entrepreneurship.	ID6: Develop a policy to support and enhance angel investment networks.	ID9: Revise R&D policy to increase funding for public and private initiatives to foster collaboration between universities and industry.
	ID3: Revise customs policy and procedures to facilitate ICT hardware exports and imports.	ID7: Strengthen public procurement policy to create a more simplified bidding process to encourage broader participation.	ID10: Revise legal frameworks and policies to enhance the ease of doing business domestically.
	ID4: Provide funding and subsidies for educational institutions to procure modern ICT equipment.		ID11: Strengthen IP law to provide fast-track patent and trademark registration.
			ID12: Establish a Regulatory Sandbox for innovative technologies in Zambia to enable controlled testing of emerging solutions to foster collaboration.

(continued)

Ecosystem strategies and recommendations			
Strategic priorities	Timeframe		
	Short-term (Year 1)	Medium-term (Year 2)	Long-term (Year 3 onwards)
Innovation capacity (IC) <i>Actions that equip innovators with the right tools, skills, space and know-how</i>	IC1: Develop more soft infrastructures to support innovators and talents with holistic support services, including capacity development, funding, and networking to navigate the entrepreneurial journey.	IC4: Expand coverage of digital infrastructure at an expedited pace for high-speed Internet access. Invest in more physical infrastructure to enhance regional and global trade connectivity.	IC6: Develop a roadmap of projects for developing SME and start-up associations and networks for ICT.
	IC2: Integrate art, entrepreneurship, and ICT into early school education to nurture creativity, critical thinking, and problem-solving skills essential for preparing students for the demands of the 21 st -century economy.	IC5: Develop a sustainable funding mechanism for ecosystem programmes promoting digital entrepreneurship and innovation.	
	IC3: Establish a structured national-level mentorship programme to connect entrepreneurs with experienced industry leaders and diaspora to provide guidance, build capacity, and foster innovation within the entrepreneurial ecosystem of Zambia.		
Innovation of key sectors (IKS) <i>Actions that seek to integrate digital innovation in ICT and non-ICT sectors, and boost competitiveness</i>	IS1: Develop a programme to support and invest in alternative and renewable energy sources such as solar farms and thermal energy plants.	IS4: Develop a strategy and programmes that support start-ups and SMEs in gaining access to the subregional and global markets and attracting investment.	IS6: Strengthen value chains in critical sectors such as tourism and agriculture to boost efficiency, innovation, and market access.
	IS2: Develop a programme to support and invest in R&D for ICT hardware manufacturers.	IS5: Develop a programme to identify and pilot existing research or innovations in key sectors.	
	IS3: Develop a programme to support and incentivize talents to solve local problems and unlock domestic market opportunities across sectors.		

(continued)

Ecosystem strategies and recommendations			
Strategic priorities	Timeframe		
	Short-term (Year 1)	Medium-term (Year 2)	Long-term (Year 3 onwards)
Ecosystem research (ER) <i>Actions and platforms providing research insights about the ecosystem</i>	ER1: Develop a platform with products and services that maps stakeholders, resources, opportunities, and activities of the digital innovation ecosystem.	ER2: Identify priority research areas to strategically focus funds, incentives, and resources on initiatives that drive innovation, address national challenges, and align with long-term development goals.	ER3: Develop a platform with products and services that connect academia, private sector, and government, and support technology transfer.
			ER4: Leverage strategic foresight to understand and shape the future of priority economic sectors.
Ecosystem knowledge sharing (EKS) <i>Knowledge sharing actions and platforms to accelerate commitment and collaboration</i>	EKS1: Develop a flagship platform to identify and share knowledge about the opportunities and challenges of the digital economy and leverage the diaspora's knowledge, experience, resources and network to support local innovators.	EKS2: Develop a one-stop-shop platform with products and services to accelerate the commercialization of ideas to market.	EKS4: Develop a platform with products and services that connect academia, private sector, and government, and support technology transfer.
		EKS3: Create a roadmap of events for developing digital communities nationwide.	
Ecosystem partnership and governance <i>Actions and mechanisms for enabling access to resources and networks for the ecosystem projects</i>	EP1: Establish an Innovation Acceleration Centre to strengthen capacity to fast-track innovation and implement flagship projects with strategic partnerships.	EP2: Create a governing body for Innovation Hubs to ensure agility and compliance to quality standards.	

10 Next steps

Decisive and active interventions can help transform an ICT ecosystem, strengthening its capacity for innovation and enabling it to become a genuine driver for accelerated digital expansion in all aspects of society and to deliver tangible benefits in public, professional and personal lives.

Stakeholders, employing on co-creation processes with ecosystem priorities, shared recommendations that have informed the development of the priority projects.

By identifying the main obstacles and enablers already present within the ecosystem, this report provides the ideal platform for launching and developing high-impact flagship projects and initiatives. Such initiatives can build directly on the recommendations offered in this report and can be co-designed with ecosystem stakeholders. Each of these projects, designed to be of specific relevance to the country, has the potential to significantly accelerate digital transformation.

This digital innovation profile provides a valuable overview of both the ecosystem and the existing practices. The DIP is designed to raise awareness about the local challenges and opportunities, and engage all stakeholders in implementing flagship projects, which can foster an enabling environment for an ICT-centric innovation ecosystem, and so unlock the full potential of Zambia and ultimately help bridge the innovation gap.

A roadmap has been co-created with a broad range of stakeholders in the country, and the recommendations offered in this DIP are grounded in specific country-level evidence. The recommendations offered are intended to assist Zambia in integrating the stakeholders and their actions into a collaborative and knowledge-driven ecosystem working towards shared objectives to accelerate digital transformation in the country.

As a next step, further engagement will be essential to design, implement, monitor and evaluate actions outlined in the roadmap. Upon request, ITU can also provide Zambia with a distilled overview of the highest-priority actions, representing the immediate and essential steps needed to drive ecosystem change. ITU can also support the country in strengthening human and institutional capacities as well as governance mechanisms to advance and effectively implement the action roadmap, ensuring sustained progress in developing and reinforcing the digital innovation ecosystem in Zambia.

Appendices

Appendix 1: Ecosystem strategies and recommendations roadmap

These recommendations are inspired by the co-creation workshops in which all stakeholders participated. ITU can help turn each of these recommendations and strategies into concrete initiatives with suggestions for clearly defined roles for each stakeholder along with indicative key performance indicators (KPIs) to accelerate digital transformation.

The Table below provides an overview of the recommendations previously presented in section 9. It outlines the rationale for each recommendation, the proposed solution, its expected benefits for the innovation ecosystem, and its alignment with the pillars of the national vision. A non-exhaustive list of core stakeholders is also proposed, identifying potential champions across various roles. Relevant good practices, both direct and indirect, to inspire and inform potential implementation pathways, are detailed in Appendix 2.

Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 1	<p>Opportunity ID1: Streamline strategies related to digital innovation to reduce duplication, including the National Digital Transformation Strategy (2023-2027) and the Digital Strategy (2023-2026).</p>	<p>There is some duplication of effort, time, and resources due to the lack of clarity regarding roles, responsibilities, and ownership.</p>	<p>An integrated strategy and vision document that outlines clear roles, responsibilities, and ownership for each stakeholder.</p>	<p>Number of KPIs and milestones achieved.</p>	<p>Digital services Digital platforms Digital skills Digital innovation and entrepreneurship Digital infrastructure</p>	<p>Ministry of Technology and Science Ministry of Local Government and Rural Development ZICTA</p>	<p>Smart Specialization Strategy (EU)</p>
Innovation dynamics 2	<p>Opportunity ID2: Establish a public awareness campaign to promote one clear vision and strategy to foster digital innovation entrepreneurship.</p>	<p>More efforts are needed to ensure stakeholders are working together towards a common goal or direction. The ecosystem needs closer collaboration and clear direction.</p>	<p>A clearly communicated vision from the government to unite stakeholders.</p>	<p>Percentage increase in stakeholder awareness and knowledge of common vision.</p>	<p>Digital services Digital platforms Digital skills Digital innovation and entrepreneurship Digital infrastructure</p>	<p>Ministry of Technology and Science Ministry of Commerce Trade and Industry ZICTA Innovation Hubs</p>	<p>Smart Nation Initiative (Singapore)</p>

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 3	<p>Opportunities to address a particular ecosystem challenge</p> <p>ID3: Revise customs policy and procedures to facilitate ICT hardware exports and imports.</p>	<p>Export policies need to focus on ICT services and products and harmonize with regional regulations to extend the digital economy regionally and globally.</p>	<p>A revision of the policies and strategies to support the export of domestic ICT products.</p> <p>Simplify customs procedures for faster clearance of ICT products.</p>	<p>Number of amendments to policies and strategies in place to enhance the export of ICT products.</p> <p>Number of policies harmonized with regional regulations.</p> <p>Number of ICT products exported.</p>	<p>Digital services</p> <p>Digital platforms</p> <p>Digital innovation and entrepreneurship</p>	<p>Ministry of Commerce Trade and Industry</p> <p>Ministry of Finance and National Planning</p> <p>Zambia Development Agency</p>	<p>The Digital Export Development Strategy (Hungary)</p>
Innovation dynamics 4	<p>ID4: Provide funding and subsidies for educational institutions to procure modern ICT equipment.</p>	<p>Some educational institutions in Zambia still lack computers or Internet access, negatively impacting students' learning and education. Access to modern ICT equipment will help students develop essential technical and 21st-century skills.</p>	<p>A funding and subsidy policy to enable educational institutions to procure modern ICT equipment.</p>	<p>Number of education institutions that own computers with Internet access.</p> <p>Usage of ICT equipment in the classroom and for study.</p> <p>Education outcomes.</p>	<p>Digital skills</p> <p>Digital infrastructure</p>	<p>Ministry of Higher Education</p> <p>Ministry of Commerce Trade and Industry</p> <p>Ministry of Finance and National Planning</p>	<p>Digital Literacy Programme (Kenya)</p>

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 5	ID5: Promote domestic manufacturing through incentives and subsidies to reduce dependence on ICT imports.	Zambia has few domestic ICT manufacturers and relies on expensive ICT imports. A boost in local manufacturing would make ICT hardware more affordable to citizens and businesses.	A funding and subsidy policy to encourage and support local ICT hardware manufacturers.	Number of new ICT hardware manufacturing firms. ICT hardware imports Funding and subsidies available for ICT hardware manufacturing.	Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development Private sector	Manufacturing Support Programme (South Africa)
Innovation dynamics 6	ID6: Develop a programme to support and enhance angel investment networks.	Angel investments are rare and not specifically focused on digital innovation. This funding is essential to enable innovators to grow their businesses and contribute to the local innovation ecosystem.	A programme to support angel investors, including training and introductions to local entrepreneurs. Financial incentives to make angel investing an attractive proposition.	Number of business angels on the programme. Number of angel investments made in start-ups.	Digital innovation and entrepreneurship Digital skills	Ministry of Commerce Trade and Industry Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development Innovation Hubs	Startup Estonia Platform (Estonia)

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Ecosystem strategies and recommendations roadmap							
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Innovation dynamics 7	ID7: Strengthen public procurement policy to create a more simplified bidding process to encourage broader participation.	The ecosystem needs an agile procurement process, revisited documentation prerequisites, as well as more awareness and education to allow for start-ups to gain greater access to public procurement contract opportunities.	An agile procurement programme for start-ups/SMEs to have the ability to test their ideas, validate their market opportunities and grow into viable businesses.	Number of revised procurement processes. Number of revisited documentation prerequisites. Number of awareness and education sessions for start-ups and SMEs. Number of start-ups and SMEs applying for public procurement contracts. Number of start-ups and SMEs gaining public procurement contracts.	Digital services Digital platforms Digital innovation and entrepreneurship Digital skills	Zambia Public Procurement Authority Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development NTBC	Innovation Procurement Programme (Netherlands)

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Ecosystem strategies and recommendations roadmap							
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Innovation dynamics 8	ID8: Introduce flexible regulatory frameworks for emerging funding models such as crowdfunding and venture capital.	Few local investors are willing to take risks investing in ICT start-ups.	A framework that allows the development of new finance tools and modern investment instruments that encourage crowd funding and venture capital firms to invest in Zambia.	Number of crowd funding investments made in start-ups. Number of new investment funds accessible to digital startups and SMEs. Number of venture capital investments made.	Digital services Digital platforms Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development Securities and Exchange Commission	Venture Capital Investment Guarantee Programme by OSEO (France)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 9	<p>Opportunities to address a particular ecosystem challenge</p> <p>ID9: Revise R&D policy to increase funding for public and private initiatives to foster collaboration between universities and industry.</p>	<p>Lack of collaborative research and funding are hampering commercialization of innovation.</p>	<p>A revised policy and strategy to support the needs of academia and industry.</p> <p>Greater budget allocation for collaborative research and development.</p> <p>Create tax breaks and grants for companies investing in R&D.</p>	<p>Number of key sectors identified in policy to promote through research and innovation.</p> <p>Percentage increase of research spending.</p> <p>Number of collaborative R&D projects initiated.</p> <p>Number of IPs registered in Zambia.</p>	Digital innovation and entrepreneurship	<p>Ministry of Commerce Trade and Industry</p> <p>Ministry of Finance and National Planning</p> <p>National Institute for Scientific and Industrial Research</p> <p>Ministry of Education</p> <p>Consortium of universities</p> <p>Private sector</p>	<p>High-Tech Strategy (Germany)</p>

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 10	ID10: Revise legal frameworks and policies to enhance the ease of doing business domestically.	There is a need for laws and regulations to foster the creation, sustainability, and growth of startups and SMEs.	A dedicated policy for start-ups that focuses on their interest, support and growth. A set of revisions to regulations that expedite the process of registering a new business.	Number of policies, strategies and frameworks drafted to support SMEs and start-ups, exclusively. Number of SMEs and startups born in the ecosystem and attracted into the ecosystem. Increase in SMEs and startup contribution to GDP.	Digital services Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Commerce Trade and Industry PACRA	Federal Law on Small and Medium Enterprises (UAE)
Innovation dynamics 11	ID11: Strengthen IP law to provide fast-track patent and trademark registration.	Lack of awareness and understanding of the benefits of registering IP remains prohibitive for many innovators.	Revised IP law to simplify and fast-track patent and trademark registration. Support innovators with IP advisory services and subsidies.	Policy to simplify IP registration process. Number of new trademarks registered. Number of new patents registered.	Digital services Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry PACRA	National Institute of Industrial Property (Chile)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation dynamics 12	Opportunities to address a particular ecosystem challenge ID12: Establish a Regulatory Sandbox for innovative technologies in Zambia to enable controlled testing of emerging solutions to foster collaboration.	There is a perceived underutilization of technology in various traditional sectors, which if addressed can boost innovation and accelerate economic growth.	A Regulatory Sandbox established to pilot innovative technologies across key social and economic sectors.	Number of innovations enrolled for testing in the sandbox. Number of solutions commercialized.	Digital platforms Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development Innovation Hubs ZICTA	Tech Acceleration Lab (Singapore)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation capacity 1	IC1: Develop more soft infrastructures to support innovators and talents with holistic support services, including capacity development, funding, and networking to navigate the entrepreneurial journey.	Incubators and accelerators must be available and accessible to encourage innovators to start and scale new ventures.	A holistic and sustainable programme that offers capacity development, funding, and networking to start-ups from ideation to exit.	Number of new start-ups onboarded under the programme. Successful start-up after one year. Turnover of start-ups and investments raised. Number of jobs created in start-ups.	Digital infrastructure Digital innovation and entrepreneurship Digital skills	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development ZICTA Innovation Hubs Private sector	Block71 (Singapore)
Innovation capacity 2	IC2: Integrate art, entrepreneurship, and ICT into early school education to nurture creativity, critical thinking, and problem-solving skills essential for preparing students for the demands of the 21st-century economy.	The ecosystem needs more technical talent and 21st century skills to meet the future needs of employers. More innovators are needed to solve local problems and establish high growth start-ups.	An early school education curriculum implemented in all schools across Zambia that integrates art, entrepreneurship and technology.	Assessment of early childhood development status.	Digital skills	Ministry of Education Ministry of Technology and Science	Educational Reforms for ICT Integration (Finland)

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Ecosystem strategies and recommendations roadmap							
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Innovation capacity 3	IC3: Establish a structured national-level mentorship programme to connect entrepreneurs with experienced industry leaders and diaspora to provide guidance, build capacity, and foster innovation within Zambia's entrepreneurial ecosystem.	Entrepreneurs need experienced mentors to support and guide them through the entrepreneurial life cycle to navigate the "valley of death." Matching innovators with mentors can increase start-up success and growth rates.	Establish a structured national-level mentorship programme to connect entrepreneurs using a digital platform.	Number of entrepreneurs registered. Number of mentors registered. Number of matches.	Digital infrastructure Digital services Digital platforms Digital skills Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development Innovation Hubs Private sector	National Mentorship Movement (South Africa)
Innovation capacity 4	IC4: Expand coverage of digital infrastructure at an expedited pace for high-speed Internet access. Invest in more physical infrastructure to enhance regional and global trade connectivity.	Rural areas are not represented in the ecosystem due to limited access to high-speed Internet and connectivity.	Expand high-speed connectivity across rural areas.	Percentage increase in coverage of Internet connectivity in rural areas. Increases Internet usage by households.	Digital Infrastructure	Ministry of Technology and Science ZICTA Smart Zambia Institute Private sector	National Broadband Network (Australia)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation capacity 5	IC5: Develop a sustainable funding mechanism for ecosystem programmes promoting digital entrepreneurship and innovation.	The ecosystem needs adequate and sustainable financial resources, mapping and practices to fund entrepreneurship at all stages of the innovation journey.	A programme to develop a sustainable funding mechanism for ecosystem programmes promoting digital entrepreneurship and innovation.	A mapping of all sustainable financial resources and best practices. Number of sustainable financial resources available to the ecosystem.	Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development Private sector	Innovation Fund (Serbia)
Innovation capacity 6	IC6: Develop a roadmap of projects for developing SME and start-up associations and networks for ICT.	Zambia needs more associations and networks for start-ups and SMEs to provide opportunities for closer collaboration, peer learning, and networking.	A roadmap of projects for developing SME and start-up associations and networks for ICT.	Number of associations and networks. Participation in associations and networks. Outcomes of associations and networks.	Digital innovation and entrepreneurship	Ministry of Small and Medium Enterprise Development Ministry of Technology and Science Business Associations Private sector	Startup Estonia Platform (Estonia)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation of key sectors 1	IS1: Develop a programme to support and invest in alternative and renewable energy sources such as solar farms and thermal energy plants.	To develop a competitive renewable energy sector, the ecosystem needs a programme to support and invest in alternative and renewable energy sources such as solar farms and thermal energy plants.	A programme to support and invest in alternative and renewable energy sources such as solar farms and thermal energy plants.	Number of companies in the value chain. Percentage increase in the GDP contribution of green energy. Percentage increase in adoption of green energy.	Digital infrastructure Digital skills Digital innovation and entrepreneurship	Ministry of Energy Ministry of Commerce Trade and Industry Ministry of Finance and National Planning Ministry of Small and Medium Enterprise Development Private sector	Noor Solar Programme (Morocco)

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Innovation of key sectors 2	IS2: Develop a programme to support and invest in R&D for ICT hardware manufacturers.	To develop an ICT hardware manufacturing ecosystem needs a programme to support and invest in R&D.	A programme to support and invest in R&D for ICT hardware manufacturers.	Number of innovations launched. Number of startups created. ICT hardware contribution to GDP.	Digital skills Digital innovation and entrepreneurship	Ministry of Science and Technology Ministry of Commerce Trade and Industry National Institute for Scientific and Industrial Research Ministry of Small and Medium Enterprise Development Innovation Hubs	Torch Programme (China)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation of key sectors 3	IS3: Develop a programme to support and incentivize talents to solve local problems and unlock domestic market opportunities across sectors.	There are few start-ups solving unique local problems with innovative solutions. There is a need to integrate and link all domestic market opportunities and growth possibilities and support innovators to access them.	A supportive programme for local talents to unlock domestic market opportunities.	Number of innovators operating in domestic markets. Number of platforms linking domestic market opportunities.	Digital skills Digital innovation and entrepreneurship Digital services	Ministry of Science and Technology Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development Innovation Hubs	MIT's Regional Entrepreneurship Acceleration Programme (United States)
Innovation of key sectors 4	IS4: Develop a strategy and programmes that support start-ups and SMEs in gaining access to the subregional and global markets and attracting investment.	Companies need support to access regional and global markets and attract investment to scale and grow.	An enhanced support programme, mentorship and networks for export and investment raising.	Number of participants on the programme. Number of companies exporting.	Digital skills Digital innovation and entrepreneurship Digital services	Zambian Development Agency Ministry of Small and Medium Enterprise Development Private sector	The Global Innovation Alliance (Singapore)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Innovation of key sectors 5	IS5: Develop a programme to identify and pilot existing research or innovations in key sectors.	The ecosystem needs to identify and capitalize on existing research and innovation from around the world to maximize impact and reduce time to market in the local context.	A programme that identifies and pilots existing research and innovation in key sectors in local contexts.	Number of research projects identified to pilot. Number of pilots successfully launched. Number of pilots commercialized.	Digital skills Digital innovation and entrepreneurship	Ministry of Technology and Science National Institute for Scientific and Industrial Research Consortium of Universities	Innovate UK's Innovation Funding (UK)
Innovation of key sectors 6	IS6: Strengthen value chains in critical sectors such as energy, manufacturing, tourism and agriculture to boost efficiency, innovation, and market access.	To become competitive in critical sectors, the ecosystem needs to strengthen and promote its value chain.	Enhanced and strengthened the value chain for the green energy sector.	Number of companies in the value chains. Percentage increase in the GDP contribution of critical sectors.	Digital innovation and entrepreneurship Digital skills	Ministry of Commerce Trade and Industry Ministry of Energy Ministry of Small and Medium Enterprise Development ZICTA	Silicon Valley (US)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem research 1	ER1: Develop a platform with products and services that maps stakeholders, resources, opportunities, and activities of the digital innovation ecosystem	Platforms and partial mapping of the ecosystem exists but more information is needed to understand its current strengths and gaps to maximize the use of scarce resources, improve efficiencies and build on its strengths.	A digital innovation ecosystem map with reliable and up-to-date information to foster awareness, connections and collaborations between stakeholders.	Number of stakeholder groups mapped. Number of sectors mapped. Number of stakeholders mapped.	Digital platforms Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development ZICTA	StartupJo Mapping (Jordan)
Ecosystem research 2	ER2: Identify priority research areas to strategically focus funds, incentives, and resources on initiatives that drive innovation, address national challenges, and align with long-term development goals and national vision.	Zambia needs to identify strategically important research areas on which to focus funds, incentives, and initiatives to maximize impact and alignment with development goals.	A research project that identifies strategically important research aligned to development goals and the national vision.	Identified research areas. Funds and incentives aligned to research areas. Successful initiatives in identified research areas.	Digital innovation and entrepreneurship	Ministry of Technology and Science National Institute for Scientific and Industrial Research ZICTA	Research and Development (R&D) Tax Incentive Programme and Decadal Plan for Science, Technology and Innovation (STI) (South Africa)

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Ecosystem strategies and recommendations roadmap							
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Ecosystem research 3	ER3: Develop a platform with products and services that connect academia, private sector, government and support technology transfer.	The ecosystem would benefit from a shared platform that connects all stakeholders via common products and services, supports tech transfer to commercial research, and addresses real industry issues.	A platform that connects academia, the private sector and government to promote the activation of the Triple Helix model.	Number of stakeholders onboarded on the platform from public, private sectors and academia. Number of knowledge exchange, training, and capacity building sessions hosted for the stakeholders. Number of collaborative projects and initiatives between the member stakeholders. Number of commercialised projects	Digital platforms Digital services Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Innovation Hubs Private sector Academia	Innovation and Technology Assistance Programme (ITAP) (Thailand)

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Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem research 4	ER4: Leverage strategic foresight to understand and shape the future of priority economic sectors.	Zambia needs strategic foresight to understand and shape the future of priority economic sectors. This will help to anticipate future resources and skills needs, particularly in ICT and entrepreneurship.	A platform that connects stakeholders to collaborate and gather insights, validate future scenarios and identify gaps.	Number of strategic foresight exercises carried out.	Digital innovation and entrepreneurship Digital skills Digital platforms	ZICTA Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development Private sector Academia	Strategic Foresight for ICT and Entrepreneurship Skills (Netherlands)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem knowledge sharing 1	EK1: Develop a flagship platform to identify and share knowledge about the opportunities and challenges of the digital economy and leverage the diaspora's knowledge, experience, resources and network to support local innovators.	Zambia needs a central platform accessible to citizens and businesses to share knowledge about the digital economy and leverage the diaspora to support local entrepreneurs.	A flagship platform to identify and share knowledge about the opportunities and challenges of the digital economy and leverage the diaspora's knowledge, experience, resources and network to support local innovators.	Number of stakeholders mobilized to engage in knowledge sharing platforms. Number of local, regional and global mentors engaged to share knowledge and guidance. Number of regional or global strategic partnerships established to enable the transfer of knowledge and sharing of best practices.	Digital platforms Digital innovation and entrepreneurship Digital skills	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development ZICTA Private sector Innovation Hubs	TechCrunch (United States)

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Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem knowledge sharing 2	EK2: Develop a one-stop-shop platform with products and services to accelerate the commercialization of ideas to market.	The ecosystem needs to democratize access to resources, information regarding stakeholders, transformative impact, activities, and opportunities to commercialize ideas in high-growth markets.	A comprehensive platform offering products and services designed to accelerate the commercialization of ideas to market through a Triple Helix collaboration approach.	Number of products and services listed on the platform. Number of collaborations and connections formed. Number of research projects completed. Number of ideas commercialised.	Digital platforms Digital innovation and entrepreneurship Digital skills	Ministry of Commerce Trade and Industry Ministry of Small and Medium Enterprise Development Ministry of Technology and Science Private sector Innovation Hubs	Startup India Hub (India)

(continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest to be involved in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem knowledge sharing 3	EK3: Create a road-map of events for developing digital communities nationwide.	The ecosystem must work together to ensure innovation events are joined up, addressing fundamental challenges, and results and actions are disseminated to eliminate duplication of efforts and redundancies of opportunities offered.	A digital platform which lists a road-map of holistic events and a suite of services for developing digital communities.	Number of events listed. Number of event hosts listed. Number of impact reports published. Number of participants engaged. Percentage increase in platform engagement.	Digital platforms Digital innovation and Entrepreneurship	Ministry of Commerce Trade and Industry ZICTA Private sector Innovation Hubs	MYStartup Platform (Malaysia)
Ecosystem partnership and governance 1	EP1: Develop a Regional Innovation Centre to strengthen the governance and the capacity to develop, monitor and implement flagship projects with strategic partnerships.	The ecosystem needs effective, accountable leadership to align common understanding and concerted digital innovation efforts around a clear plan of implemented strategies.	An effective governing body with the capacity to develop, monitor, and implement flagship projects through strategic partnerships.	Number of Board members. Number of meetings held between the Board. Number of initiatives approved by the Board.	Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Technology and Science Private sector	Network of Acceleration Centres (ITU)

(continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	Opportunities to address a particular ecosystem challenge	Opportunity brief Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using product or service.	Product or service to develop Proposed solutions to the ecosystem challenge that meet the needs of users	Ecosystem outcomes How to know if the ecosystem challenge is solved; what will be measured	National outcomes Key performance indicators (KPIs) established by the country	Champions Core stakeholders with high power and interest in this opportunity	Good practice Good practices nationally and internationally to inform the course of action.
Ecosystem partnership and governance 2	EP2: Create a governing body for Innovation Hubs to ensure agility and compliance to quality standards.	The ecosystem needs a governing body to oversee the operation and development of Innovation Hubs across the country to provide high-quality holistic support for innovators.	A governing body for Innovation Hubs to ensure agility and compliance to quality standards.	Quality and assurance standards for Innovation Hubs.	Digital services Digital innovation and entrepreneurship	Ministry of Commerce Trade and Industry Ministry of Technology and Science Private sector Innovation Hubs	Ghana Digital Centres Limited (Ghana)

Appendix 2: Good practices

Good practices

To develop the recommendations, it is necessary to draw inspiration from good practices used in other ecosystems without necessarily copying them.

Good practice has been tested to produce an impact based on evidence and positive results and can be scaled up and replicated. Good practice is needed to help develop flagship projects, to benchmark the strengths and weaknesses of a practice, and to initiate evidence-based policy or programme development. Good practice allows actors to effortlessly add value to initiatives in their ecosystems. However, good practice should not be reproduced "as is" because every ecosystem and every project is different.

ITU has developed a database of good practices, a framework to better develop these recommendations in the ecosystem of a country. Stakeholders can choose to find inspiration from these best practices to strengthen their existing initiatives or develop new ones.

- 1) [Smart Specialization Strategy \(European Union\)](#): The Smart Specialization Strategy (S3) is an innovative approach adopted by European Union countries to boost regional innovation and economic development. The S3 focuses on identifying and leveraging the unique assets and strengths of each specific region to drive sustainable growth and competitiveness. The S3 adopts a bottom-up approach where stakeholders collaboratively identify niche areas with potential for competitive advantage and innovation; and this data is used to inform decisions, ensuring that strategies are grounded in regional capabilities and opportunities.
- 2) [Smart Nation \(Republic of Singapore\)](#): The Smart Nation initiative developed by Singapore is a comprehensive vision that aims to transform the country through technology. This vision is clearly communicated across various sectors, ensuring alignment of strategies and efforts towards achieving a tech-driven, efficient, and sustainable nation. The initiative is spearheaded by the Office of the Prime Minister, demonstrating high-level commitment, and uses multiple platforms, including websites, public campaigns, and educational programmes, to disseminate the vision widely. Regular forums, workshops, and feedback sessions with citizens, businesses, and public sector entities to ensure alignment and buy-in.
- 3) [The Digital Export Development Strategy \(Hungary\)](#): The overall objective of the Digital Export Development Strategy is to intensify the growth of digital product exports to develop strong digitization knowledge in Hungary.
- 4) [Digital Literacy Programme \(Kenya\)](#): Launched in 2016, the Digital Literacy Programme is a collaborative effort between the Ministry of Education, the Ministry of ICT, and the Ministry of Industrialization. Its goal is to enhance digital learning in public primary schools by providing devices (tablets and laptops), installing digital content, training teachers, and building ICT infrastructure.
- 5) [Manufacturing Support Programme \(South Africa\)](#): The Manufacturing Support Programme is available to South African registered entities engaged in manufacturing and has provided financial incentives to support manufacturing projects, including those in the ICT sector. These incentives aim to promote operational efficiency, competitiveness, and localization by using locally produced inputs and machinery. Additionally, South Africa has

established itself as a regional tech hub, with cities such as Cape Town and Johannesburg attracting significant startup funding and hosting subsidiaries of major international tech companies. This environment has fostered growth in the ICT sector, contributing to the technological advancement of South Africa.

- 6) [Startup Estonia Platform \(Republic of Estonia\)](#): The Startup Estonia platform exemplifies a successful model for creating an angel investment network that connects investors with high-potential startups and fosters entrepreneurial growth. It features a centralized online platform with detailed startup profiles, advanced matching algorithms, and a comprehensive resource centre offering educational materials and investment guides. The platform organizes networking events, pitch days, and webinars to facilitate connections, and provides due diligence support, mentorship, and advisory services. It includes investment tracking and reporting features, incentive schemes, and community-building initiatives. Additionally, it offers legal and regulatory support to help investors navigate compliance and IP considerations.
- 7) [Innovation Procurement Programme \(Kingdom of the Netherlands\)](#): The procurement programme for innovation in the Netherlands supports startups and SMEs by integrating their innovative solutions into public sector procurement. It employs pre-commercial procurement to acquire R&D services and solutions still in development, allowing startups to test and refine their innovations. The programme uses a competitive dialogue approach to involve startups and SMEs early in the procurement process, facilitating iterative development and feedback. Additionally, it fosters innovation partnerships between startups, SMEs, and public sector entities, co-developing and testing new solutions to ensure they align with market and regulatory requirements.
- 8) [The Venture Capital Guarantee programme of OSEO \(France\)](#): The mission of OSEO was to support growth and innovation for enterprises through assistance and financial support to French SMEs in various phases of their life cycle: start-up, innovation, development, business transfer/buy-out. OSEO has since merged with other public investment entities to form Bpifrance, the French public investment bank.
- 9) [High-Tech Strategy \(Germany\)](#): The High-Tech Strategy aims to position the country as a global leader in innovation by promoting R&D across high-tech sectors. The identification of key areas of focus is aimed at channelling resources effectively and creating high-impact innovations. There has been a substantial increase in budget allocation for research and innovation, including direct funding for institutions, universities, and private sector R&D. The encouragement of collaboration between public research institutions and private companies drives innovation and commercialization of outcomes. Overall, a strong policy framework, including tax incentives for R&D, streamlined regulatory processes, and intellectual property (IP) protection encourages innovation.
- 10) [Federal Law on Small and Medium Enterprises \(United Arab Emirates\)](#): Federal Law No. 2 of 2014 established the National Programme for Small and Medium Enterprises and Projects under the Ministry of Economy. The national programme aims to support UAE entrepreneurs to strategize and satisfy their needs, through various incentives, measures and regulations, as well as grow and sustain their businesses in collaboration with all stakeholders.
- 11) [National Institute of Industrial Property \(Chile\)](#): INAPI Express, led by the National Institute of Industrial Property, is a fast-track system for patent and trademark registration that significantly reduces processing time and improves accessibility for innovators. The initiative prioritizes technological and digital innovation, offering simplified procedures, online platforms, and tailored support for startups and SMEs. By accelerating protection for tech-related IP, INAPI strengthens the innovation ecosystem and encourages commercialization. This makes the INAPI Express system an interesting reference as Zambia also intends to strengthen IP law and enable fast, reliable registration systems that support digital entrepreneurship and innovation.

- 12) [Tech Acceleration Lab \(Singapore\)](#): Launched in 2021 by the Infocomm Media Development Authority (IMDA), the Tech Acceleration Lab (TAL) is a regulatory sandbox initiative that enables companies in Singapore to prototype and deploy innovative tech solutions in a controlled, low-risk environment. TAL facilitates collaboration between government, industry, and tech providers, helping de-risk innovation and accelerate adoption. It provides regulatory support, testing facilities, and technical guidance, allowing emerging technologies to be evaluated before full-scale rollout. This model aligns well with the goal of Zambia to foster collaboration and safe experimentation through a Regulatory Sandbox for innovative technologies.
- 13) [Block71 \(Singapore\)](#): A collaboration between NUS Enterprise in Singapore and Salim Group in Jakarta to build on the success of BLOCK71 in Singapore and establish a global network of business hubs to help start-ups penetrate into different economies. BLOCK71 is an ecosystem builder and global connector intended to function as a catalyst and aggregate start-up communities, providing opportunities for growth and access to new markets. At the same time, start-ups can leverage on the co-working space and incubation services such as mentoring, networking sessions, hot-desking facilities, as well as overseas grant support or start-up funding to kick-start their expansion plans.
- 14) [Educational Reforms for ICT Integration \(Finland\)](#): In Finland, the forward-thinking national education system includes significant efforts to integrate ICT skills development from an early age. ICT skills are integrated across subjects rather than taught as a standalone subject. This ensures that students develop digital literacy in a holistic manner. There is an emphasis on project-based and problem-solving approaches that encourage students to use ICT tools creatively and collaboratively; and continuous professional development for teachers to ensure they are well-equipped to deliver lessons effectively. Additionally, collaboration with tech companies provide up-to-date resources, tools, and real-world insights into the classroom.
- 15) [National Mentorship Movement \(South Africa\)](#): The National Mentorship Movement (NMM) is a structured, digital, and inclusive mentorship initiative that connects entrepreneurs with experienced professionals and industry leaders, including those in the diaspora. Designed to address the gaps in entrepreneurial support, NMM uses a digital platform to match mentors and mentees based on sector, needs, and experience level. The programme includes structured onboarding, progress tracking, and mentorship tools to ensure impact and accountability. It provides a strong model for Zambia to establish a national mentorship programme that fosters capacity-building, innovation, and long-term startup success.
- 16) [National Broadband Network \(Australia\)](#): The National Broadband Network (NBN) is a significant infrastructure project in Australia, aiming to deliver high-speed Internet nationwide, including in remote and rural areas. It features a nationwide rollout to extend connectivity across all regions, leveraging public-private partnerships to fund, build, and manage the network. The deployment of the network is phased, prioritizing areas based on demand and need to ensure timely expansion. Additionally, the NBN provides subsidies and support for infrastructure development and adoption of broadband services for digital literacy initiatives, particularly in underserved rural and remote areas.
- 17) [Innovation Fund \(Republic of Serbia\)](#): The vision of the Innovation Fund is to, as a pivotal state actor in the development of the innovation system, contribute to the economic growth of Serbia by supporting innovation, strengthening the link between science and economy, and establishing and strengthening new and existing companies with innovative potential, through a range of financial instruments.
- 18) [Noor Solar Programme \(Kingdom of Morocco\)](#): This initiative offers a model of how public-private partnerships and targeted investment programmes can catalyse the development of a competitive renewable energy sector, and particularly solar energy in emerging economies. Launched by the Moroccan Agency for Sustainable Energy (MASEN) in partnership with the Ministry of Energy and international investors, the Noor Programme is one of the world's largest concentrated solar power (CSP) initiatives. It includes a pipeline

of solar and hybrid renewable energy projects that are part of the National Energy Strategy of Morocco to generate 52 per cent of its electricity from renewables by 2030.

- 19) [Torch High Technology Industry Development Programme \(China\)](#): This Torch sub-programme is focused on R&D and industrialization of ICT hardware. The programme successfully catalysed the development of China's globally competitive ICT hardware sector, including semiconductors, telecommunication equipment, and computing devices through state-supported R&D, tech transfer, and startup incubation.
- 20) [Regional Entrepreneurship Acceleration Programme \(United States\)](#): The Regional Entrepreneurship Acceleration Programme (REAP) at the Massachusetts Institute of Technology (MIT) aids regions in crafting strategies to foster innovation by focusing on local strengths and sectoral priorities. It organizes thematic workshops and seminars to engage stakeholders in pinpointing key innovation opportunities, and encourages collaboration among entrepreneurs, experts, and leaders. Employing data-driven insights and benchmarking, REAP validates and aligns thematic areas with both local needs and global trends. REAP also offers tailored support for startups, including funding, mentorship, and market access, to promote the development of solutions addressing local challenges.
- 21) [The Global Innovation Alliance \(Singapore\)](#): The Global Innovation Alliance (GIA), coordinated by Enterprise Singapore, is a network of international partners and programmes that helps startups and SMEs expand into subregional and global markets. GIA provides structured support for internationalization through market immersion programmes, business matching, mentorship, and investment-readiness support. It connects entrepreneurs with overseas corporates, innovation hubs, and investors to facilitate entry and scale in new markets. This model offers a strong reference for efforts in Zambia to support startups and SMEs in accessing international opportunities and attracting investment for growth.
- 22) [Innovation Funding \(United Kingdom of Great Britain and Northern Ireland\)](#): The Innovation Funding scheme from Innovate UK provides funding programmes that support the identification, piloting, and commercialization of research and innovation across key sectors. Its key practices include challenge-led innovation, focusing on projects that address specific industry challenges and align with market needs. The programme promotes collaborative pilots by encouraging partnerships between researchers, businesses, and public sector organizations, enhancing the credibility and impact of innovations. Additionally, Innovate UK offers support for scaling successful pilots with further funding, market intelligence, and business development resources, facilitating the transition from pilot to commercial success.
- 23) [Silicon Valley \(United States\)](#): Silicon Valley in California is a renowned hub for technology companies and startups, exemplifying how clusters can enhance the value chain in technology and innovation sectors. It fosters a collaborative environment that encourages cooperation among companies, research institutions, and investors, creating a dynamic ecosystem for innovation and growth. The region offers specialized services, including access to talent, venture capital, and technical expertise, which addresses critical challenges and strengthens the value chain. Networking opportunities, such as events, meetups, and conferences, facilitate knowledge sharing and partnerships, driving further innovation within the cluster.
- 24) [StartupJo \(Hashemite Kingdom of Jordan\)](#): Startup Jordan is an interactive and evolving platform that comprehensively maps the startup ecosystem, including stakeholders, resources, and opportunities. It features a dynamic directory of key stakeholders—entrepreneurs, investors, accelerators, and service providers—facilitating connections and partnerships. Regularly updated by ecosystem stakeholders themselves, the platform also lists resources such as funding options and mentorship programmes, and provides details on events, networking opportunities, and innovation challenges. Interactive visualisation tools and data insights enhance understanding of ecosystem dynamics and trends, aiding informed decision-making and identifying emerging opportunities.

- 25) [Research and Development \(R&D\) Tax Incentive Programme and Decadal Plan for Science, Technology and Innovation \(STI\) \(South Africa\)](#): The R&D Tax Incentive Programme and Decadal Plan for STI work in tandem to focus national efforts on priority research areas that drive innovation and economic transformation in South Africa. The Decadal Plan sets long-term research priorities aligned with national development goals, while the tax incentive encourages private sector investment in R&D. Together, they enable strategic allocation of resources and create stronger public-private linkages. This approach aligns closely with the aim in Zambia to prioritize research funding and incentives that address national challenges through innovation.
- 26) [Industry Innovation and Technology Assistance Programme \(Thailand\)](#): The Industry Innovation and Technology Assistance Programme (ITAP) is a mechanism to provide technical experts from a pool of over 1 300 highly experienced and qualified technical experts from universities and S&T agencies to assist businesses to increase their value through better product matching with new markets. The scope of the ITAP programme includes providing experts to identify technical solutions and facilitate consultations to ensure successful design and implementation. The support ranges from product design, product development, product and process certification, and qualification on industry standards, process improvement, and digital transformation.
- 27) [Strategic Foresight for ICT and Entrepreneurship Skills \(Netherlands\)](#): The Netherlands employs strategic foresight to anticipate future skills needs, particularly in ICT and entrepreneurship. Stakeholders collaborate to gather insights, analyse labour market trends, map existing skills in the environment, validate future scenarios, and identify future skill gaps. Consequently, educational curricula and training programmes are designed to address these gaps, ensuring that graduates and professionals acquire the skills necessary for future ICT and entrepreneurial challenges. Mechanisms are established for regular monitoring and adjustment of skills development strategies while industry collaboration ensures training and education programmes remain aligned with market needs.
- 28) [TechCrunch \(United States\)](#): TechCrunch is a prominent technology media platform that delivers news, success stories, and analysis about the digital economy and startups. It features articles and interviews with successful entrepreneurs and startups, showcasing their journeys and providing inspiration and practical insights. TechCrunch also publishes detailed industry reports and analyses on trends and opportunities within the digital economy, offering valuable information on market dynamics and emerging prospects. Additionally, it organises events and conferences where industry leaders and innovators share their experiences and knowledge, providing opportunities for networking and learning.
- 29) [Startup India \(Republic of India\)](#): The Startup India initiative is a comprehensive programme designed to support and foster entrepreneurship within India. It offers financial support through grants, subsidies, and tax incentives to help startups access necessary capital and resources. The initiative includes incubation and acceleration programmes that provide mentorship, training, and resources to early-stage startups, aiding their market entry and scaling efforts. Startup India facilitates networking and partnerships between startups, industry experts, and established businesses to connect with potential partners and investors. Additionally, the initiative includes market access programmes, offering support through trade fairs, exhibitions, and guidance on regulatory and market entry challenges.
- 30) [MYStartup Platform \(Malaysia\)](#): Initiated by the Ministry of Science, Technology, and Innovation (MOSTI) and powered by Cradle Fund, the MYStartup Platform serves as a national digital hub that maps and coordinates innovation events, services, and ecosystem actors in Malaysia. It provides a centralized roadmap of programmes, funding opportunities, and community-building activities to strengthen the startup and digital innovation ecosystem. The platform enhances visibility, reduces duplication, and fosters collaboration, making it a strong reference for Zambia and the goal to develop a nationwide roadmap of events for building digital communities.

- 31) [Network of Acceleration Centres \(ITU\)](#): Developed by ITU-D, the flagship Network of Acceleration Centres, one of the primary vehicles of the Innovation and Entrepreneurship Alliance for Digital Development, is committed to driving digital transformation through a unique ecosystem-thinking approach, and enhancing capabilities to boost innovation, entrepreneurship, and the digitalization of economies.
- 32) [High-Tech Strategy \(Federal Republic of Germany\)](#): The High-Tech Strategy aims to position the country as a global leader in innovation by promoting R&D across high-tech sectors. The identification of key areas of focus is aimed at channelling resources effectively and creating high-impact innovations. There has been a substantial increase in budget allocation for research and innovation, including direct funding for institutions, universities, and private sector R&D. The encouragement of collaboration between public research institutions and private companies drives innovation and commercialization of outcomes. Overall, a strong policy framework, including tax incentives for R&D, streamlined regulatory processes, and IP protection encourages innovation.
- 33) [National Network of Incubators \(Portugal\)](#): The National Network of Incubators (RNI), coordinated by Startup Portugal, serves as a formal governance and accreditation mechanism for incubators and innovation hubs across the country. It sets minimum service standards, ensures quality compliance, and aligns hub activities with national innovation goals. Through structured accreditation, performance monitoring, and access to public programmes, RNI promotes agility while maintaining accountability. This model offers a strong reference for Zambia to establish a governing body that ensures quality, coordination, and strategic alignment among its innovation hubs.
- 34) [Ghana Digital Centres Limited \(Ghana\)](#): The Tech Hub Network, supported by GDCL, serves as a coordinated governance framework for innovation hubs and tech centres across Ghana. It promotes standardization, collaboration, and quality service delivery by aligning member hubs to national digital transformation objectives. GDCL sets operational benchmarks, facilitates public-private partnerships, and provides capacity-building support to improve service offerings and scale innovation support nationwide.

Appendix 3: Methodology

This study was carried out using a framework developed by ITU for the diagnosis and development of ecosystems centred on ICTs. The framework provides a structured approach to conducting rapid ecosystem diagnostics, identifying key strengths and gaps, and formulating evidence-based recommendations to support ICT-centric innovation.

Designed for policy-makers, decision-makers, innovators, and ecosystem builders, the methodology combines analytical tools with participatory processes to ensure that findings are grounded in both data and stakeholder perspectives. Through a step-by-step process, the framework supports co-creation with ecosystem actors, enabling the development of tailored ecosystem blueprints and flagship initiatives that build on existing good practices while addressing identified challenges.

By equipping stakeholders with practical tools and shared analytical language, the methodology aims to support more coordinated, inclusive, and sustainable digital innovation ecosystems, helping communities translate strategic ambitions into actionable and impactful initiatives.

You can access the toolkit here: bit.ly/DIPtoolkit

Appendix 4: Key words and definitions

This section provides definitions of key terms used throughout the report. These terms are essential to understanding the concepts, frameworks, and methodologies that underpin the analysis and recommendations of the report. The terms are listed in the order in which they appear in the report, ensuring easier cross-referencing for the reader. Together, they form a shared vocabulary to support clarity and coherence across all stakeholder discussions.

Key word	Definition
Advanced digital skills	Higher-level competencies in areas such as programming, data analytics, artificial intelligence, cybersecurity, and digital content creation, enabling individuals to participate in the digital economy and tech innovation.
Basic digital skills	Fundamental abilities needed to use digital devices and the Internet safely and effectively, including browsing, emailing, word processing, and online safety.
Broadband	A high-capacity transmission technology that delivers high-speed Internet access, enabling fast data transfer and continuous online connectivity.
Capacity for innovation (IC) with digital	Measures that ensure the presence of well-developed infrastructure, talent, and digital tools within the ecosystem. These capacities provide innovators with the skills, spaces, and technical know-how necessary for successful digital transformation.
Digital economy	The digital economy encompasses a wide range of economic activities that rely on digitized data and knowledge as core production factors. It includes e-commerce, digital services, and the use of digital technologies across all sectors.
Digital transformation	Digital transformation is the integration of digital technologies across all areas of an organization or sector, fundamentally altering how services are delivered, how value is created, and how operations are conducted to meet evolving needs.
Dynamics of innovation (ID) with digital technology	Measures that establish and support the broader environment for innovation. This includes regulatory frameworks, institutional structures, and cultural mindsets that enable the development and scaling of innovative projects, products, and services.
Entrepreneurship	Entrepreneurship refers to the process of designing, launching, and running a new business, typically a startup. In the context of digital innovation, it also includes leveraging technology to solve problems, scale solutions, and create economic and social value.
Innovation	Innovation refers to the creation and application of new ideas, technologies, or methods that significantly improve products, services, or systems. It is a key driver of economic development and competitiveness.
Innovation ecosystem	An innovation ecosystem is the network of institutions, stakeholders, resources, and policies that support and enable innovation. It includes startups, corporates, investors, universities, government bodies, and support organizations working in collaboration.

(continued)

Key word	Definition
Innovation in key sectors (IS) with the contribution of digital	Measures that apply innovation to strategic economic sectors, enabling startups and SMEs to extend their impact, scale beyond niche markets, and drive transformation across industries.
Knowledge sharing in the digital ecosystem (EK)	Mechanisms and tools that facilitate the exchange of knowledge, insights, and best practices across the ecosystem to foster collaboration and accelerate innovation.
Mobile network generations	Mobile network generations refer to the evolution of wireless communication technologies, each offering improved speed, capacity, and capabilities. 2G introduced digital voice and SMS; 3G enabled mobile Internet and multimedia; 4G brought high-speed data for video and app usage; and 5G delivers ultra-fast, low-latency connectivity to support advanced technologies such as IoT and smart systems. Each generation builds on the previous, enhancing mobile communication and enabling broader digital transformation.
Partnership and governance in the digital ecosystem (EP)	Measures that support the development of public-private partnerships and governance models focused on ecosystem-wide collaboration. These mechanisms also provide access to networks and strategic resources.
Research in the digital ecosystem (ER)	Tools and approaches used to generate knowledge about the digital innovation ecosystem, including mapping actors, identifying available resources, and uncovering gaps and opportunities.
Strategies	Strategies define the core directions for achieving the objectives of the vision. They guide transformation by aligning sectoral development with digital innovation and should include roles for both digital and non-digital actors. Each strategy should be underpinned by a theory of change to coordinate stakeholder contributions.
Theory of change and indicator development	A framework that outlines how specific actions lead to desired outcomes and impact. It includes mechanisms for stakeholder alignment and progress measurement, enabling clearer accountability and strategy refinement.
Unicorn	A unicorn is a privately held startup valued at over USD 1 billion. These companies are often seen as indicators of a thriving and scalable innovation ecosystem.
Valley of death	The critical phase after ideation where a startup requires significant support and investment but has yet to demonstrate financial viability. Many ventures fail during this stage due to resource constraints and high risk.
Vision	A vision is an aspirational statement that defines an ideal future state to be achieved. It provides direction, mobilizes stakeholders, and guides long-term planning and collaboration.

Appendix 5: Abbreviations and acronyms

This section presents a list of acronyms and abbreviations used throughout the report. All entries are arranged alphabetically for ease of use and clarity.

Key Word	Definition
ACCA	Association of Chartered Certified Accountants
ARIPO	African Regional Intellectual Property Organization
BDT	ITU Telecommunication Development Bureau
BPO	Business Process Outsourcing
CEEC	Citizens Economic Empowerment Commission
CSR	Corporate Social Responsibility
EU	European Union
FDI	Foreign Direct Investment
FNB	First National Bank
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICT	Information and Communication Technologies
ICTAZ	Information and Communications Technology Association of Zambia
IDF	Investment Development Fund
IP	Intellectual Property
IPO	Initial Public Offering
ITU	International Telecommunication Union
MSME	Micro, Small, and Medium enterprises
MTN	Mobile Telecommunications Network
NIPP	National Intellectual Property Policy
NTBC	National Technology and Business Centre
PACRA	Patents and Companies Registration Agency
PPDF	Public Private Dialogue Forums
R&D	Research and Development
SDG	Sustainable Development Goals
SEZ	Special Economic Zone
SHE	SHE Entrepreneur
SME	Small and Medium Enterprises

(continued)

Key Word	Definition
SZI	Smart Zambia Institute
TDAU	Technology Development and Advisory Unit
TMO	Technology Management Office
UKAid	United Kingdom Department for International Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	United States Agency for International Development
USF	Universal Service Fund
WIPO	World Intellectual Property Organization
ZACCI	Zambia Chamber of Commerce and Industry
ZAMREN	Zambia Research and Education Network
ZBAN	Zambia Business Angels Network
ZCAS	Zambia Centre for Accountancy Studies
ZICTA	Zambia Information and Communications Technology Authority
ZMW	Zambian Kwacha
ZTE	Zhongxing Telecommunications Equipment Corporation

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