An Enabling Business Environment for the Digital Transformation of the Economy

Business Environment Working Group

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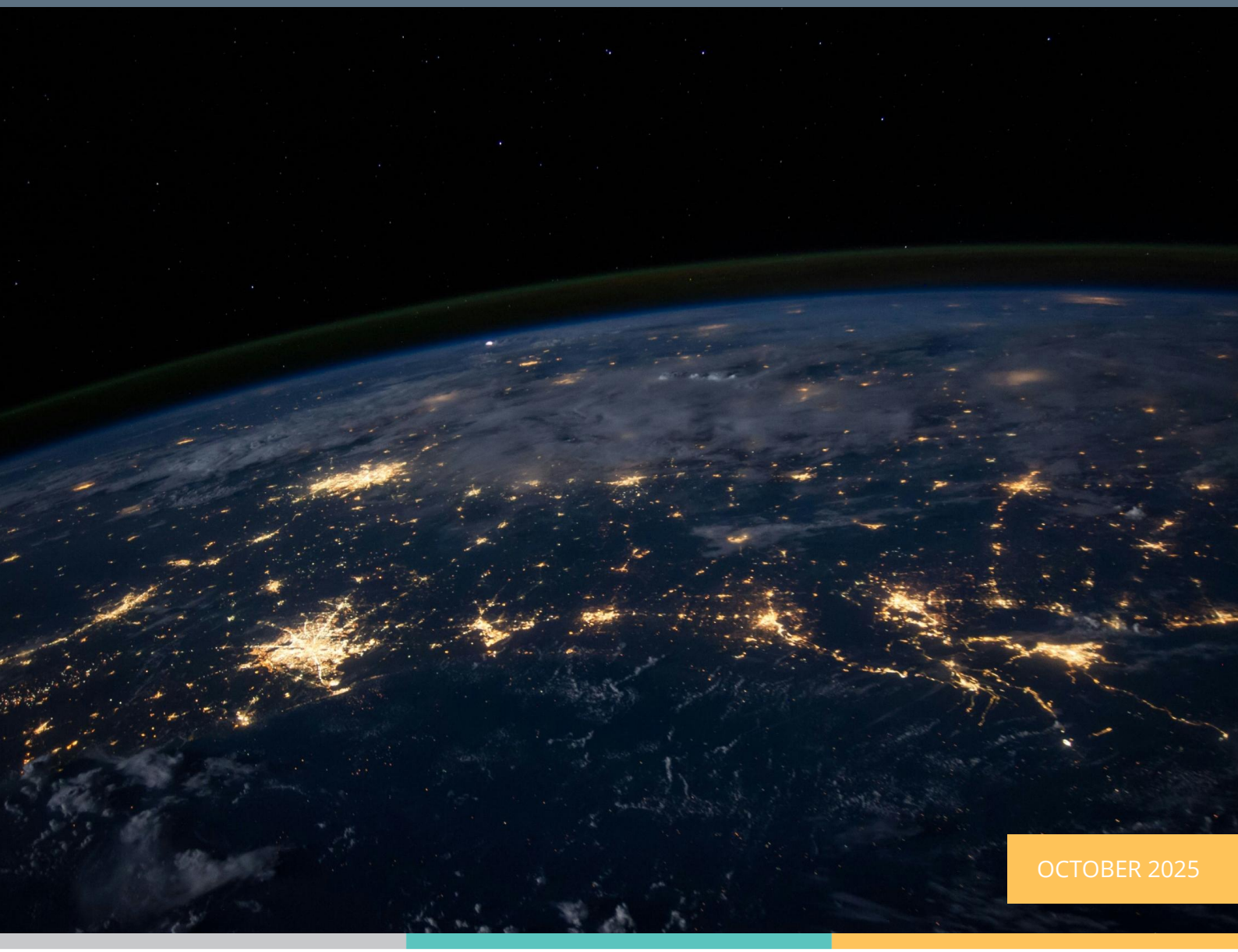

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Executive Summary

Digital transformation presents many opportunities for private sector development (PSD) and economic growth. It offers new productivity enhancements for businesses and new products and services for consumers and society. However, it also presents challenges and threats that, if not addressed, can undermine its promised potential.

This report examines how donor and development agencies can support business environment reforms that contribute to the digital transformation of developing and emerging economies.

Emerging digital technologies, enabled by telecommunication and internet access, include artificial intelligence (AI), cloud computing, smart grids, the Internet of Things (IoT), and blockchain. These technologies can lower production costs, enhance exchanges like trading goods and services, and facilitate the dissemination of ideas and knowledge, fostering further innovation and growth. The development and application of digital technologies can pave the way to transform and diversify the economy while improving living standards and stimulating economic growth. These pathways create engines of increased productivity that drive broader opportunities across the economy and open new markets for individuals at the lower end of the income distribution.

Donor and development agencies can support PSD and the transition towards a digital economy by supporting business environment reforms (BER) that use digital technology and create more conducive conditions for inclusive economic growth. This report briefly reviews the use of digital technologies in BER before considering four themes when developing a policy, legal and regulatory framework for the digital economy:

- **Digital Infrastructure.** Developing country governments can support digital transformation through policy reforms that improve public and private investments in digital infrastructure, including access to mobile and fixed networks, developing next-generation access networks, household and business uptake dynamics, secure server infrastructure, and the necessary foundations for the IoT. Support for digital transformation often requires an overarching policy framework incorporating digital infrastructure, among other complementary development interventions.
- **Empowering society.** This emphasises the changing role of the digital economy in people's lives, how they access and utilise digital technologies, and their capacity to fully leverage their potential. It encompasses internet usage, education, financial inclusion, and engagement with government. Developing country governments and their development partners can improve the access to and use of digital technologies by all groups in society, including micro, small and medium-sized enterprises, rural communities and vulnerable and marginalised groups.
- **Innovation and technology adoption.** This theme focuses on advancements in digital technologies, new digitally enabled business models, the role of ICTs as a driver for innovation, and the uptake of ICTs and other emerging technologies by businesses. As governments and their development partners support inclusive PSD, they focus on bridging the digital divide and leveraging ICTs for economic growth. This includes supporting ICT adoption by businesses, nurturing the use of AI and emerging technologies, and supporting research and development.

- **Jobs and growth.** Exploring how digital technologies drive economic growth and job creation through labour market and employment opportunities, investments in ICTs, value addition, international trade, e-commerce, and productivity improvements. This includes e-commerce and trade, using ICT to promote value addition and productivity, investing in ICT and using digital technologies to integrate into global supply chains more effectively.

Donor and development agencies aim to achieve several interconnected objectives when supporting the transition to digitised economies in developing countries:

- Building foundational digital infrastructure to expand inclusive access to affordable, reliable internet and mobile networks, particularly in underserved rural and marginalised communities.
- Strengthening policy and regulatory frameworks by enhancing norms, standards, and regulations to allow domestic digital firms to thrive. This includes supporting data governance laws, cybersecurity protocols, and regulatory sandboxes for fintech, as well as ensuring competition policies effectively prevent excessive market power concentration and maintain affordable digital products and services through healthy competition.
- Promoting inclusive digital ecosystems to reduce inequalities by targeting women, youth and marginalised groups through initiatives like digital skills training and inclusive financial systems, including universal service obligations for internet providers.
- Fostering innovation and entrepreneurship by reducing barriers to market entry to facilitate innovation and investing in open-source platforms to enable localised solutions.
- Enhancing global and regional collaboration, fostering alliances with international organisations and supporting cross-border initiatives, such as regional digital courts.
- Mitigating digital risks, including e-waste management, cybersecurity threats and labour market disruptions through capacity-building and policy guidance.

Finally, this report identifies the following research gaps and opportunities:

- Anticipatory governance for emerging technologies, including the need for adaptive regulations and foresight tools to manage risks such as cybersecurity threats and equity gaps, as well as regulatory sandboxes for experimental governance of AI and blockchain applications in low-resource settings and on ethical frameworks for equitable access to emerging technologies, addressing the risks of monopolisation by advanced economies.
- Context-specific metrics and definitions, including formulating localised metrics to capture informal digital sectors (e.g., mobile money ecosystems) and standardised definitions for cross-country comparisons, balancing global norms with regional needs.
- Inclusive innovation ecosystems that explore gender-sensitive regulations to ensure equitable participation in digital labour markets and subsidies for rural digital infrastructure, addressing barriers like high 5G deployment costs in least-developed countries.
- Adaptive legal frameworks, including agile legislation for cross-border data flows and digital taxation and capacity-building for judicial systems to handle cybercrime and AI-related disputes.
- Ethical AI and algorithm accountability.
- Digital sovereignty.
- Economic models in the digital age: how the digital economy disrupts traditional economic models and what new paradigms will emerge.

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Acronyms

AI	Artificial intelligence
BER	Business environment reform
DCED	Donor Committee for Enterprise Development
FAO	Food and Agriculture Organisation
FIG	International Federation of Surveyors
G2B	Government-to-business
G2G	Government-to-government
ICT	Information and communications technology
IoT	Internet of Things
ILO	International Labour Organization
OECD	Organisation for Economic Cooperation and Development
PSD	Private sector development
SDG	Sustainable Development Goals
UN	United Nations

Introduction

This report examines how donor and development agencies can support business environment reforms that contribute to the digital transformation of developing and emerging economies. Digital transformation presents many opportunities for private sector development (PSD) and economic growth. It offers new productivity enhancements for businesses and new products and services for consumers and society. However, it also presents challenges and threats that, if not addressed, can undermine its promised potential.

Donor and development agencies collaborate with governments, businesses, and civil societies in developing and emerging economies to foster economic growth and alleviate poverty while working towards the United Nations (UN) Sustainable Development Goals (SDGs). Their support for PSD aims to enhance market functionality, ensuring vibrant and equitable opportunities for impoverished individuals on a large scale while contributing to an improved quality of life.

Supporting business environment reform (BER) contributes to this process by creating more conducive conditions for private enterprises to start and grow. The opportunities created by new digital technologies improve the productivity and profitability of private enterprises and the functioning of the business environment. Digital technologies transform how business is done and how governments govern.

The DCED (2008) guidelines on BER provide an overview of good practices. They define the business environment as a subset of the investment climate, consisting of a complex of policy, legal, institutional, and regulatory conditions governing business activities. This definition includes the nature of the relationship between public, private and civil actors and how these actors interact. Where the investment climate has an overall effect on private sector activities, the business environment is directly affected by national, provincial and local government decisions.

Developing country governments, with the support of donors and development agencies, undertake BER because of its significant influence on the development of the private sector, leading to economic growth, the generation of livelihoods and the creation of jobs. BER changes the behaviour of private enterprises by:

1. Reducing business costs to allow firms to increase profits, which may be further invested to increase market share, output, and employment.
2. Reducing risks and uncertainty to improve the quality and stability of government policies, laws and regulations to reduce the cost of capital and increase the number of attractive investments in the market.
3. Increasing competitive pressures to allow firms to become more competitive by making market entry easier, stimulating efficiency, and innovating market incentives.

The next chapter defines the concepts of digitisation and digital transformation before looking at the challenges and opportunities of digital transformation. It describes the role BER can play in supporting this transformation, providing a framework for the discussion that follows.

Chapter 3 focuses on the specific contributions BER can make to the digital transformation of developing and emerging economies. It examines how digitisation is being used to improve the functionality of the business environment based on the common functional areas of BER defined by the DCED. It then considers BER's role

in supporting the transition towards a digitalised economy and considers some issues of concern for developing and emerging economies.

Chapter 4 considers the role of donors and development agencies in supporting BER for digital transformation. This chapter emphasises their contribution to fostering changes in the national business environment that support digital transformation.

Chapter 5 identifies the questions that can serve as a basis for future research, identifying gaps and opportunities.

1. The opportunities and challenges of digital transformation

This chapter considers the opportunities and challenges of digital transformation for PSD in developing and emerging economies. It begins by describing a pathway that shows how digital technologies can drive socio-economic development through enhanced productivity and job creation. It then considers how donor and development agencies have turned their attention to the role of BER in digital transformation. This sets the scene for a fuller examination of this topic in Chapter 3.

1.1 The opportunities of digital transformation

While there are many definitions, it is generally understood that digital transformation refers to the impact of digital technologies and data and their use on existing and new activities. This transformative change is accelerating worldwide across all economic sectors (Tapscott 1997).[1] Digitalisation is the process of technological change through the adoption of digital technologies.[2]

The digital transformation has roots in earlier technological shifts, such as the pre-internet era from the 1950s to the 1980s, when foundational innovations like microchips and early computing laid the groundwork for later digitalisation. The internet's public availability in the 1990s and mobile revolutions in the 2000s accelerated adoption, but systemic economic and social benefits lagged behind technological advancements. While digital tools like mobile phones and the internet spread rapidly, their developmental dividends—such as inclusive growth, job creation, and equitable service delivery—are still emerging and require complementary reforms.

The coronavirus pandemic (2020–2022) acted as a catalyst for digital transformation, forcing rapid adoption of digital solutions (e.g., remote work, e-commerce). However, this accelerated uptake highlighted existing inequalities rather than creating a new phenomenon. Thus, while digital technologies have evolved over decades, the systemic integration of these tools into development strategies—and the realisation of their full potential—remains an ongoing challenge, making pursuing "digital dividends" a contemporary priority.

Emerging digital technologies have been enabled by telecommunication and internet access and range from artificial intelligence (AI) to cloud computing, from smart grids and the Internet of Things (IoT) to blockchain. These technologies can reduce production costs, make exchanges, such as trading goods and services, more efficient, and allow spreading ideas and knowledge, thus promoting further innovation and growth. While the information and communications technology (ICT) sector plays an essential role in this transformation, the most significant impact occurs when digital technologies are adopted in other sectors of the economy, such as the agriculture, manufacturing, and retail sectors. Various authors have described the pathways through

[1] Tapscott (1997) describes the digital economy as an umbrella term for the myriad ways that digital technologies have irreversibly altered traditional economic functions and structures.

[2] Digital technology refers to the use of digital tools, systems, and processes for creating, storing, processing, and communicating information. It encompasses various technologies, including software, hardware, internet technologies and digital platforms.

which digital technologies transform and diversify the economy, while improving living standards and driving economic growth.[3]

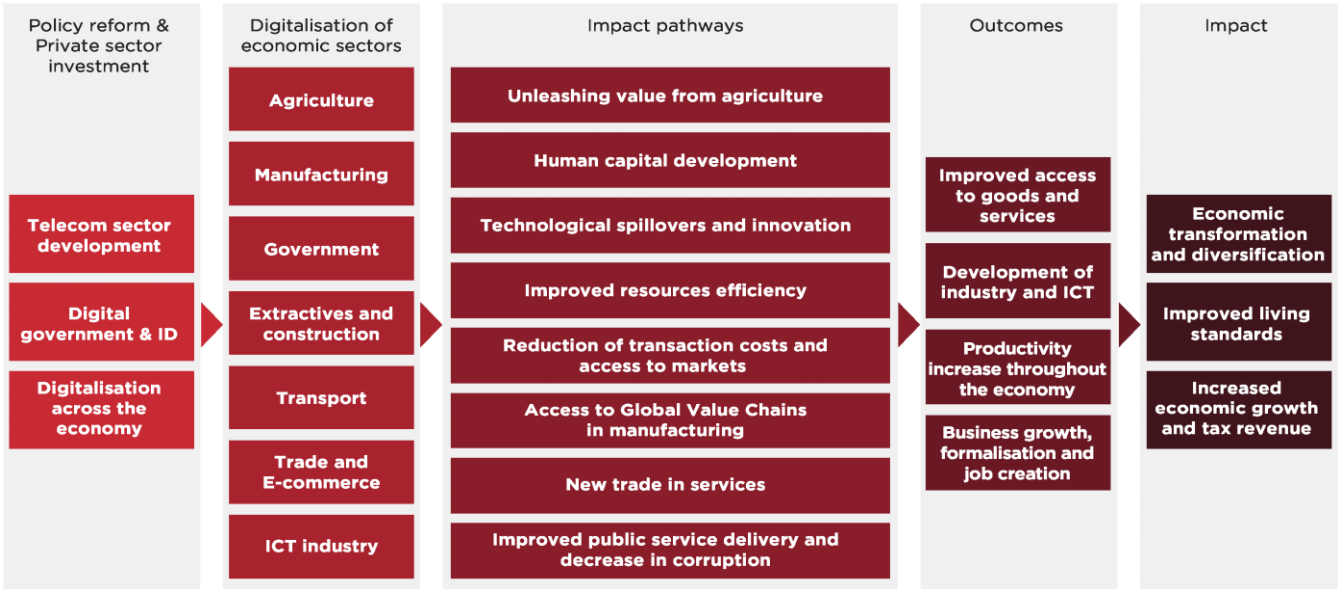
One such pathway has been defined by the Pathways for Prosperity Commission (2018), which identified five technology-enabled pathways to help drive inclusive growth: [4]

1. Raising value from agriculture.
2. Extending global value chains to include more complex processes (i.e., higher-value manufacturing).
3. Creating new global trade in services.
4. Linking the informal sector to the formal economy.
5. Creating diverse and connected domestic economies.

These pathways "build engines of increased productivity to drive broader opportunities across the economy, and open up new markets for people at the bottom end of the income distribution."

The study of digital transformation in African economies, GSMA (2024), began by analysing how digital technologies can drive socio-economic development through enhanced productivity and job creation. This included how digital technologies can improve government functions and unlock economic value through policy reform. See Figure 1.

Figure 1 Digital pathways to economic transformation



SOURCE: (GSMA 2024)

Digitisation helps increase firm productivity, and higher levels of technology adoption improve labour productivity. By understanding how technological changes work in a sector, it is possible to identify innovations that create jobs and enhance productivity not through automation but by creating new tasks and efficiencies per worker.

[3] See Pathways for Prosperity Commission (2018), GSMA (2024).

[4] The Pathways for Prosperity Commission on Technology and Inclusive Development was launched in January 2018. Hosted and managed by Oxford University's Blavatnik School of Government, the Commission collaborated with international development partners, developing country governments, private sector leaders, emerging entrepreneurs and civil society to catalyse conversations and encourage the co-design of country-level solutions aimed at making frontier technologies work for the benefit of the world's poorest and most marginalised men and women. See: https://pathwayscommission.bsg.ox.ac.uk

The World Development Report of 2016, entitled *Digital Dividends*, describes how digital technologies promote development through three main mechanisms:

- **Efficiency**. Lowering transaction costs and improving productivity.
- **Innovation**. Enabling new products and services.
- **Inclusion**. Expanding access to services for marginalised groups.

Digital technologies contribute to private sector growth by lowering information and transaction costs, which enables businesses to enhance their productivity and competitiveness. They also facilitate innovations such as e-commerce platforms (e.g., Alibaba) and digital payment systems (e.g., M-Pesa), transforming markets by boosting efficiency, reducing coordination costs and promoting financial inclusion. Moreover, the Internet encourages trade, better capital utilisation, and increased competition among firms, driving economic growth.

Thus, the World Development Report of 2016 proposes three policy objectives related to digitalisation (World Bank 2016):

1. A business environment where firms can leverage the internet to compete and innovate for the benefit of consumers.
2. Workers, entrepreneurs, and public servants with the right skills to take advantage of opportunities in the digital world.
3. An accountable government that effectively uses the internet to empower its citizens and deliver services.

This sets the context for the current report. BER can both benefit from and contribute to the digitalisation of the economy. Digitalisation can create new opportunities for private sector development in developing and emerging economies, leading to increased private investment, firm competitiveness, economic growth, and more productive and decent employment for women and men.

1.2 Tools for assessing the business environment for digital transformation

Donor and development agencies have turned their attention to the role of BER in digital transformation. Indeed, this is not a new topic for the DCED, which commissioned research in 2020 into new technologies in regulatory delivery. This research highlighted that the collection and use of data are the most fundamental elements in the transformation of regulatory processes (PRISM Institute and World Bank Group 2020). In 2021, a second DCED research project examined using new technologies for public-private dialogue (PPD) (Nielsen 2021).

Many international development agencies apply tools to monitor and assess the status of digital transformation worldwide. For example, the Organisation for Economic Co-operation and Development's (OECD's) Going Digital Toolkit benchmarks countries across seven policy dimensions (e.g., access, use, innovation, trust, and jobs) using 33 indicators to provide a nuanced understanding of digital transformation. It offers visualisations for international comparisons and links indicators to relevant policy levers, enabling policymakers to assess progress and identify areas for improvement. The toolkit integrates data from various sources and focuses on e-skills, digital trade, IoT adoption, and cloud computing.[5] The OECD also employs

[5] See OECD (2019)

a distributed microdata approach to analyse firm-level surveys across multiple countries. This method uses a standard statistical code executed locally by national experts to ensure consistency while respecting country-specific contexts. This approach has been used to study AI adoption across 11 countries, linking digital technology use to productivity outcomes such as employment and turnover.

The United Nations Conference on Trade and Development (UNCTAD) has developed several assessment tools to support countries in navigating digital transformation and e-commerce development. The most prominent is the eTrade Readiness Assessments, a diagnostic tool for identifying opportunities, barriers, and policy solutions for digital trade and e-commerce growth. This tool evaluates seven critical areas: e-commerce infrastructure, payment solutions, trade logistics, legal/regulatory frameworks, skills development, access to finance, and consumer trust. It provides an action matrix with prioritised recommendations to address gaps in digital readiness.[6]

The United Nations Development Programme developed the Digital Readiness Assessment, a diagnostic tool designed to help countries evaluate their readiness for digital transformation and identify actionable pathways to leverage digital technologies for sustainable development. This offers a high-level overview of a country's digital strengths, weaknesses, and opportunities, emphasising enabling digital technologies to advance the SDGs. It specifically targets areas where 70 percent of SDG goals can benefit from digital solutions. The DRA promotes a whole-of-society approach to inclusivity by engaging governments, private sector actors, civil society, and citizens to ensure no one is left behind.[7]

The G20 has developed a Toolkit for Measuring the Digital Economy. This framework aims to assist member countries in assessing digital transformation and tackling measurement challenges. The toolkit seeks to compile a standard set of existing indicators and methodologies to create comparable metrics for cross-country analysis of the digital economy. It offers evidence for policy guidance, identifies measurement gaps, and establishes a consensus agenda to support evidence-based policymaking, enabling accurate diagnostics of digital economy challenges and opportunities. The toolkit demonstrates the impact of the digital economy on national statistics through collaboration with international organisations (e.g., OECD). It is utilised in Section 3.2 to organise the discussion on how BER can facilitate the transition towards a digitised economy.

Finally, in 2024, the World Bank launched the first B-READY report (World Bank 2024). The *Business Ready* (B-READY) project aims to build a comprehensive instrument panel that, by 2026, will "enable about 180 economies to dial in the precise settings needed for a vibrant private sector development—the combination of conditions that will reduce poverty, advance shared prosperity, and speed up the transition to a low-carbon economy." B-READY looks at digital adoption by either governments or businesses as a cross-cutting theme anchored in specific areas of the business environment. It considers more than 400 variables on digital adoption spanning the three pillars embedded within all B-READY topics except Labour.[8] Digital adoption by governments includes, among other aspects, the availability of digital public services, which can save time and reduce the administrative burden on entrepreneurs.

[6] See the UNCTAD eTrade Readiness Assessments website.

[7] See the UNDP Digital Readiness Transformations website

[8] The 10 READY topics are organised within three pillars. Pillar 1, Regulatory Framework, covers the rules and regulations that firms must follow as they open, operate (or expand), and close (or reorganise) a business. Pillar 2, Public Services, spans the facilities governments provide to support compliance with regulations and the institutions and infrastructure enabling business activities. Pillar 3, Operational Efficiency, captures the ease of compliance with the regulatory framework and the effective use of public services directly relevant to firms. Digital adoption by governments is covered by nine topics under Public Services (Pillar 2). Digital adoption by businesses is measured by three topics (Utility Services, Financial Services, International Trade) under Regulatory Framework (Pillar 1) and by four topics (Utility Services, Financial Services, International Trade, Taxation) under Operational Efficiency (Pillar 3).

2. Digitisation and business environment reform

This chapter is divided into three sections. The first section examines how digitisation improves the functionality of the business environment based on the common functional areas of BER defined by the DCED. The second considers BER's role in supporting the transition towards a digitalised economy, with attention given to the most common strategic themes. The third section focuses on some issues of concern for developing and emerging economies.

2.1 Digitisation to improve business environment functionality

The DCED (2008) guidelines on BER recognise several "functional areas" of BER that donor and development agencies have typically focused on. While BER can focus on general business environment issues, most reforms are concentrated on these functional areas. Below is a summary of how digitisation is used to support BER in developing and emerging economies.

2.1.1 Simplifying business registration and licensing procedures

Digitisation simplifies registration and licensing processes, typically by linking or consolidating multiple procedures. The APEC Digital Economy Steering Group promotes an enabling regulatory and policy environment for digital licensing and permitting. This comprises facilitative laws and regulations and government incentives to increase the uptake of digital licensing and permitting processes. While governments sometimes digitalise paper-based processes in their entirety without efforts to simplify and streamline the licensing and permitting processes, this does little to help the digital medium's ease of use and encourage widespread adoption of the digital licensing and permitting process. Recommended policy reforms include only accepting online licensing and permitting applications, making it cheaper to apply for permits online than in person, providing certificates and awards for employees who have undertaken digital training, and introducing facilitative regulations (APEC Digital Economy Steering Group 2022).

In Chile, the *Empresa en un Día* streamlines enterprise registration through a platform established by the Chilean Ministry of Economy, Development and Tourism. Registration in the business registry, the public deed, and the publication in the official gazette can be achieved by completing a digital form. Since 2013, over 70 percent of companies have been established through this digital platform. A company can commence operations immediately upon receiving the tax identification number assigned by the platform (International Labour Organization 2021).

2.1.2 Improving tax policies and administration

Digitalisation can improve tax enforcement technology by collecting more reliable information on taxpayers' economic outcomes. It can also enhance the equity-efficiency trade-off by implementing more complex tax

systems to better target income redistribution. This allows governments to lower tax rates to collect the same revenue or redistribute the same income as in the current tax system. For example, introducing e-invoicing in Peru has improved tax compliance. Firm sales, purchases and value-added tax grew by over five percent in the first year (Bellon, Chang et al. 2019).

The OECD (2020) describes the current digital transformation of tax administration as Tax Administration 3.0. This process creates an opportunity to address some of the structural limitations of the current tax administration system, moving away from sequential taxpayer-facing processes and integrating taxation processes into the systems taxpayers use in their daily lives and businesses. This increases compliance-by-design outcomes, creating "step-change reductions in compliance costs for taxpayers."

The Asian Development Bank (2022) describes how many tax administrations in Asia started the digitisation process by automating essential functions (i.e., electronic registration and filing) and moved to the next stage in digital transformation. This involved enabling real-time transaction data to flow directly into the tax administration (e.g., through a cash register function or an online accounting system linked to the tax administration data collection system). This represents a significant step toward seamless, continuous data flow, raising compliance rates and significantly lowering compliance and administrative costs.

Digital platforms have been identified as a possible area for improvement of the international tax concept that allocates jurisdictional tax claims over multinational companies' profits based on physical presence. This raises issues such as enforcement, where to tax non-resident e-commerce businesses, how to assess intragroup transactions, how to classify digital goods, how to identify taxpayers and where and how to collect consumption tax (United Nations Conference on Trade and Development 2019).

Jacobs (2017) argues that digitalisation "holds the promise of improving the tax enforcement technology." It can improve tax systems, increase economic efficiency, and promote equity in countries with good institutions, well-functioning democracies, enforcement of the rule of law, and strict protection of citizens' privacy. However, increased levels of digitalisation may prove counterproductive in countries with bad institutions, more significant corruption, more authoritarian regimes, little or no rule of law, and no protection of the privacy of its citizens. Indeed, greater use of information can also enable bad governments to realise bad policy objectives better.

2.1.3 Improving labour laws and administration

Digitisation is changing the world of work. It creates new demands for skills development and infrastructure. Increasingly, people are employed on digital labour platforms. From a BER perspective, these changes challenge labour policies, regulations and international labour standards. Issues related to jobs and skills are often overlooked in regulations governing the digital economy. The recent exponential growth of digital economies means that appropriate employment policies and regulations have not been able to keep pace, which will be a key challenge over the coming years (International Labour Organization 2022).

Digitisation has enabled remote work, flexible schedules and streamlined administrative processes. Digital tools simplify compliance, facilitate cross-border hiring, and improve access to government services, making labour administration more efficient (Comply360 2025). The digital transformation of the labour market has created new job profiles, especially in technology, data analysis and platform management (Charles, Xia et al. 2022). It has also enabled greater work-life balance and productivity growth for some workers (Guryeva 2022). However, De Stefano (2015) highlights the challenges digital gig workers face, from unpredictable incomes to the absence of employment benefits, drawing attention to the need for new labour regulations in the digital age. The gig economy has shifted the labour market towards more flexible, project-based work.

While this offers autonomy and skill development for some, it often results in fewer full-time positions and greater job insecurity. Platform work is associated with job insecurity, lack of benefits, and limited opportunities for career advancement. Many gig workers face unstable incomes and minimal legal protections, increasing the risk of social dumping and labour market segmentation (Eurofound 2021).

There are several improvements brought by digitisation in labour laws and administration. The adoption of ICT in labour administration has enhanced transparency, improved data management, and facilitated service delivery. E-government initiatives have made it easier for both employers and employees to access information and resolve disputes. However, digitisation has also brought about challenges. In blurring work boundaries, remote work and digital platforms often blur the line between personal and professional time, complicating the enforcement of overtime and workplace protections. The rise of the gig economy has exposed gaps in traditional labour laws, which were designed for permanent, full-time employment. Gig workers are often classified as independent contractors, leaving them without access to social security, benefits, or collective bargaining rights (International Labour Organization 2021).

Finally, labour administration faces hurdles such as insufficient ICT training, cybersecurity threats, and the need for interoperable digital systems. There is also a risk of overreliance on technology, which can lead to deskilling and reduced human oversight (Guryeva 2022). Existing legal frameworks are insufficient for protecting gig workers. There is a growing call for hybrid employment models, updated legal classifications, and enhanced regulatory frameworks to ensure fair treatment and social protection for all workers in the digital economy (Kocher 2022).

2.1.4 Improving the overall quality of regulatory governance

The rise of digital technology has enhanced government efficiency and information accessibility, enabling greater public engagement in the regulatory process. Leveraging advancements in digital technology in regulatory development can simplify and improve regulatory management. Modernising governance draws on digital tools like big data and blockchain to facilitate data sharing from multiple sources while encouraging innovation through data analysis.

Hanisch, Goldsby et al. (2023) write that as organisations coalesce into ever-larger value networks, governance mechanisms for exchange by participants in digital environments are crucial. This highlights the need to regulate control, coordination, incentives, and trust to enable new forms of organising, value creation and value capture.

Digitisation has been widely adopted in various fields to enhance regulatory governance. The DCED study conducted in 2020 on the use of new technologies in regulatory delivery underscored that data collection and use are the most fundamental components in transforming regulatory processes. AI and its associated applications are increasingly employed across numerous regulatory processes, drawing on diverse data sources. Regulators are starting to acknowledge the importance of timely, reliable data through innovative data-gathering techniques (e.g., IoT, Remote Sensing) and data aggregation and transmission technologies such as blockchain as essential for supporting AI-driven applications. Additionally, digital financial transactions facilitate governments in enforcing laws and regulations, including tax collection (Klapper, Miller et al. 2019).

The ASEAN Economic Ministers meeting in 2020 called on governments to develop a conducive regulatory environment that “maximises the benefits generated by the provisions of digital government services both for the enterprises, in terms of reduction of the administrative burdens, as well as for the public administration (simplification of procedures, lower administrative costs and better data and information

collection)." This included the review of administrative processes and adopting new technological and organisational solutions to simplify procedures (Association of Southeast Asian Nations 2020).

In 2024, the Korean government introduced the Regulatory Information Portal (http://better.go.kr) to increase transparency in regulatory reform. The public and firms can access regulatory information or submit their opinions online through the portal. The portal provides information on regulatory proposals and the entire regulatory revision process. In addition, the Regulatory Reform *Sinmungo* allows citizens and stakeholders to file petitions on regulatory reform. This system serves as a one-stop shop that integrates all existing channels of the regulatory petition in all administrative agencies. Regulatory impact analysis statements are also made available to the public on the portal during the advance notice of proposed legislation (Organisation for Economic Co-operation and Development 2017).

2.1.5 Improving land titles, registers and administration

Modern land registries standardise land administration by integrating complete documentation of property rights into a broader, fully coordinated and automated land information system (C. Lemmen, P. van Oosterom et al. 2015). The digitisation of land titles, registers and administration systems enables increased interplay among the different significant functions of land administration (i.e., cadastre, land tenure, land use planning, urban development and geospatial information management). It creates a holistic perspective that strengthens the contribution to the SDGs to which land administration is fundamentally linked.[9] The International Federation of Surveyors (FIG) and the UN Food and Agriculture Organisation (FAO) report that the land sector is accelerating towards fully digital operating environments, "establishing dynamic capabilities to sense digital opportunities, seize them and continuously transform business processes." Future land administration systems require more intelligence, interoperability, inclusivity, interactivity, incorporation, and investment (FAO, UNECE et al. 2022).[10]

The Indian State of Karnataka's Bhoomi project established a framework for computerising land records in collaboration with the Federal Rural Development Ministry. Paper-based records were first digitised and further sourced into a digital land record system. Aided by the accelerated digitalisation of entire processes, Bhoomi significantly reduced inefficiency and corruption and improved service delivery, and transparency was increased by a biometric identification of all system operators. Land records can be accessed at subdistrict offices through a centralised digital infrastructure, allowing instant printing and interaction with digital land records. End-user devices with internet access can access rights, tenancy and crop records. As of July 2021, more than 30 million applications were received, and almost 20 million were approved (FAO, UNECE et al. 2022).

In the Philippines, the World Bank-funded Support to Parcellation of Lands for Individual Titling project improves parcelling procedures with digital technologies.[11] It applies KoBo Toolbox forms, free and open-

[9] GRAIN, a small non-government organisation working with smallholder farmers, says there are dangers associated with the digital integration of cadastres and land registries. Digitisation enables public and communal lands to be reclassified. Through cadastres, rural properties can be included on registries that provide access to public policies and funding, which, in turn, can be used as a basis to issue individual property titles. However, large landowners are then able to grab the lands of indigenous, traditional and peasant communities and sell them onwards to an increasingly transnational elite.

[10] To do this, they may need to explore 'As-a-Service', 'Platform' and 'Distributed' operational models, significantly if these can enhance transparency, accountability, reliability, ease of use, collaboration, cooperation, and leadership. Redesigns must be fit-for-purpose and improve land-related decision-making, land tenure security, property valuation/taxation, land use planning, land development, and land dispute minimisation.

[11] This project is implemented by the Department of Agrarian Reform, Department of Environment and Natural Resources and Land Registration Authority.

source Android software that significantly speeds up the process. The process is paperless, portable and efficient (Department of Agrarian Reform 2021).[12]

The digitisation of land titles and register systems also opens the possibility of using blockchain technology. With blockchain, trust is embedded in the technology. Participants can see changes to the ledger and access its records in real time, knowing the information has been secured and immutable since it was initially added. However, there are several fundamental challenges. The two biggest hurdles are that inputs must be accurate and digital. Most developing countries still operate with paper-based cadastres that are largely incomplete, leaving the significant challenge of digitising and updating records to reflect property and ownership characteristics accurately (Kriticos 2019).[13]

2.1.6 Simplifying and speeding up access to commercial courts and alternative dispute resolution mechanisms

Digital technologies are changing how commercial disputes are managed by improving court access and system efficiency. Due to the nature of the disputes and the need for fast and effective resolution, online courts for small claims on commercial disputes are an appropriate area to begin the digital transformation of courts. While there are few fully functional online courts, there are many jurisdictions where certain essential elements of online courts exist, such as case management systems and online payments of court fees (European Bank for Reconstruction and Development 2020).

With support from the EU, the Commercial High Court of Colombo in Sri Lanka launched a Commercial High Court webpage in June 2024. The website is a comprehensive digital platform designed to enhance the transparency and accessibility of the court's operations. It features up-to-date access to the latest judgments, orders, daily court lists, and important notices to the public. The site also hosts amendments to Acts and Regulations relevant to the Commercial High Court processes (United Nations Development Programme 2024).

Singapore introduced a Community Justice and Tribunal System in 2017 as an online case filing and management system for small claims. This was later expanded to community and employment disputes. The system offers several online tools, including pre-filing assessment, filing system, case management, and case tracking system. The platform provides a digital adjudication for small claims, community disputes and employment claims. At the Supreme Court level, the Electronic Filing System was further developed through an E-litigation module, which offered a modernised online court environment for case management, online tools for litigants and a negotiation platform. The Law Society of Singapore has published a SmartLaw Guide to help attorneys digitally transform their practice (European Bank for Reconstruction and Development 2020).

2.1.7 Broadening public-private dialogue processes with a particular focus on including informal operators, especially women

The DCED research on using new technologies for PPD (Nielsen 2021) argued for better coordination and transparency of information in both the public and private sectors. Digital technology could increase the

[12] Instead of bringing paper and pen into the field, documenters use a smartphone application to directly encode information into environmental and social safeguard forms and upload soft copy attachments.

[13] A systematic review of 37 studies into the use of blockchain in land administration found that institutional factors have proven to be issues that can hinder the successful adoption of technological innovations such as blockchain-based land administration. The factors were divided into three dimensions: regulatory, organisational and cultural environment (Ansah, Voss et al. 2023).

speed of feedback loops between the two sides, allowing for faster reform and the opportunity to make feedback more inclusive, allowing more private sector representatives to participate. The research report suggests that many of the challenges of PPD, such as including more stakeholders, transparency of processes, sharing results of consultations, etc., are at least partially managed through technology.

2.1.8 Enabling better access to finance

Digital financial services can promote financial inclusion by eliminating geographical and market barriers (e.g., facilitating payments, savings, borrowing, and investment and providing individuals and households with accessible and affordable financial channels). The entry point for digital financial services often begins with digital payments, which lay the foundation for additional products and use cases. Establishing a robust digital financial services ecosystem requires progressive legal and regulatory frameworks, resilient financial infrastructures, and the development of cost-effective delivery channels through agents, point-of-sale devices, and mobile phones.

The World Bank (2024) B-Ready Report indicates that the leading economies in providing financial services are distinguished by their advanced digital systems, highlighting the importance of digital development in driving financial progress. Borrowers (i.e., firms and individuals), banks and other financial institutions have online access to data from credit reporting agencies and collateral registries, facilitating lending decisions and improving access to finance. Digitalisation enhances the operational efficiency of service provision, promotes accessibility for SMEs and improves transparency and accountability—possibly creating a more inclusive, more streamlined public service delivery system.

A study into the use of digital technologies by smallholder farmers in sub-Saharan Africa found that various digital technologies are employed, including digital extension services and digital marketing of agricultural products, which improve access to information and markets and enhance productivity. However, poor internet connectivity, low digital literacy, inadequate infrastructure, and affordability impede progress. Gender disparities further limit the equitable distribution of digitalisation benefits (Choruma, Dirwai et al. 2024).

2.2 BER's role in supporting the transition towards a digitalised economy

While the previous section examined how digitisation has contributed to improving the business environment for PSD, this section considers how BER can support the broader transition towards a digitised economy. The G20 has produced a Toolkit for Measuring the Digital Economy that combines different approaches and indicators to monitor digital transformation. It spans four themes that are used to organise this section: infrastructure, empowering society, innovation and technology adoption, and jobs and growth.

2.2.1 Digital infrastructure

Developing country governments can support digital transformation through policy reforms that improve public and private investments in digital infrastructure. Infrastructure refers to the physical, service and security frameworks supporting the digital economy, including access to mobile and fixed networks, developing next-generation access networks, household and business uptake dynamics, secure server infrastructure, and the necessary foundations for the IoT. Digital infrastructure, including affordable, high-speed internet, is crucial for connectivity and promoting the economy's digital transformation. It

encompasses various elements, including connectivity (such as with high-speed internet and internet exchange points), data repositories (such as data centres and clouds), and IoT (such as computers, mobile devices, voice-activated devices, sensors, geospatial instruments, machine-to-machine communications, vehicle-to-vehicle communications).

The G20 Toolkit addresses several key issues under the infrastructure pillar, which are crucial for assessing and developing the digital economy. This includes investing in broadband and the rise of mobile broadband, tracking the expansion of both fixed and mobile broadband networks, and tracking the adoption rates among populations. The toolkit recognises the growing importance of mobile broadband, especially in areas where fixed infrastructure may be lacking. The toolkit also emphasises the need for higher Internet speeds. As digital services become more sophisticated and data-intensive, the demand for faster connections increases. Similarly, the affordability of Internet access is essential as high costs can be a significant barrier to digital inclusion. This includes household access to computers and the Internet.

While less than half the population in least-developed countries (LDCs) can access 4G mobile network coverage, which is crucial for supporting digital trade, there are examples of reform. Peru has introduced regulatory reforms to encourage competition and reduce fees in the ICT sector, and Ghana has invested significantly in ICT infrastructure, boosting internet penetration and financial inclusion (United Nations Conference on Trade and Development 2023).

Infrastructure for the IoT is also becoming increasingly important as more devices connect. Similarly, secure server infrastructure is essential for protecting digital transactions and data.

Digital platforms are another form of digital infrastructure. These are organisations that use digital technologies (e.g., software and apps) to enable interactions and exchanges between people and businesses. They provide a virtual venue for exchange. Digital platforms can provide products and services for all aspects of life through digital channels, such as mobile devices, computers, and the Internet. When provided by government and public institutions, digital platforms can serve people and government agencies in all facets of life (e.g., healthcare, education, government business or services).

Regional digital transformation strategies

The African Union (AU) Digital Transformation Strategy aims to harness digital technologies and innovation to transform African societies and economies to promote Africa's integration, generate inclusive economic growth, stimulate job creation, break digital divides, and eradicate poverty. The strategy supports the continent's socio-economic development while ensuring Africa's ownership of modern tools of digital management. It seeks to leverage the strengths and address the current lack of a common digital coordination framework within Africa, providing a common, coordinated digitalisation agenda, enhancing synergies and avoiding the duplication of efforts (Africa Union 2020).

The ASEAN Digital Economy Framework Agreement (DEFA) is expected to be the world's first region-wide digital economy agreement. It seeks to integrate Southeast Asia as an innovative, interoperable and investable region in the digital age. The DEFA strives to provide a comprehensive and high-quality roadmap to accelerate digital trade, govern data, promote innovation and drive productivity-led inclusive growth. Negotiations for the DEFA are anticipated to span two years, with the framework agreement set to be finalised by 2025. Progressive implementation of the DEFA is expected to unlock US$2 trillion by 2030 in the region's digital economy (Boston Consulting Group and Aus4ASEAN Futures 2023).

Often, support for digital transformation requires an overarching policy framework that incorporates digital infrastructure, among other complementary development interventions. For example, the World Bank's Digital Economy for Africa (DE4A) initiative, launched in 2018, aims to digitally enable every individual, business and government in Africa by 2030. It focuses on five key areas: digital infrastructure, digital platforms, digital financial services, digital entrepreneurship, and digital skills (World Bank n.d.). The initiative supports the African Union's Digital Transformation Strategy and recognises digital technology as a driver for growth and innovation. Since 2019, the World Bank has delivered 70 African digitalisation projects under DE4A. The initiative has helped increase broadband internet access in Africa from 26 percent in 2019 to 36 percent in 2022, working towards bridging the digital divide and fostering economic growth (World Bank Group 2024).

2.2.2 Empowering society

Empowering society emphasises the changing role of the digital economy in people's lives, how they access and utilise digital technologies, and their capacity to fully leverage their potential. It encompasses internet usage, education, financial inclusion, and engagement with government, among other aspects. While many advanced economies have leveraged digital technologies to drive economic growth and improve quality of life, many developing and emerging economies risk being left behind in the digital age. Only 36 percent of the 1.4 billion people living in the world's Least Developed Countries were connected online in 2024 (World Economic Forum 2024). This digital divide threatens to exacerbate existing inequalities and hinder progress toward sustainable development.

Developing country governments and their development partners can improve the access to and use of digital technologies by all groups in society, including micro, small and medium-sized enterprises, rural communities and vulnerable and marginalised groups. This requires attention to several key areas:

- **Digital natives and the digital divide.** Digital natives refer to those who have grown up with digital technologies, while the digital divide represents the gap between those with and without access to these technologies. Age and education influence Internet uptake, often correlating with income levels (IEEE Computer Society 2023). Efforts to bridge this divide include improving infrastructure in rural and low-income areas, providing affordable devices and internet services, and offering digital literacy programs for older adults and disadvantaged groups.
- **Internet usage patterns.** People's Internet use has evolved significantly, encompassing social media for communication and information sharing, e-commerce for shopping and business transactions, remote work and online education platforms, entertainment streaming services, health information and telemedicine. In 2021, approximately 2.3 billion people shopped online, a 68 percent increase from 2017 (United Nations Conference on Trade and Development 2024).
- **E-consumers and mobile money.** The rise of e-commerce has transformed consumer behaviour (United Nations Conference on Trade and Development 2025). Online shopping platforms offer convenience and broader product selection, while mobile payment systems facilitate financial transactions. Subscription-based software and digital content services are increasingly popular, and mobile money services have expanded financial inclusion, particularly in developing countries, reducing the number of unbanked individuals.
- **Government interaction.** Digital technologies have revolutionised interactions between citizens and governments through online portals for services and information, digital identity systems for secure access to those services, e-voting systems in certain countries, and open data initiatives that enhance transparency.

- **Education in the Digital Era.** The digital transformation has significantly impacted education, with online learning platforms, massive open online courses, digital textbooks and interactive learning materials, virtual classrooms and video conferencing tools, and personalised learning experiences through AI and data analytics. Kenya's Digital Literacy Programme, also known as "DigiSchool," was designed to equip public primary school children with today's digital skills. The programme has provided digital devices to over 20,000 out of 23,951 public primary schools and trained over 91,000 teachers on digital learning[14]. This initiative has improved learning behaviours, reduced absenteeism, and increased ICT skills among teachers. Additionally, it has contributed to infrastructure development, with over 6,000 kilometres of fibre laid out countrywide to ensure internet connectivity in schools (Ogolla 2018).
- **ICT skills development.** As the digital economy grows, the demand for ICT skills increases. This has led to digital literacy programmes in schools and communities, vocational training in technology-related fields, continuous learning and upskilling opportunities for workers, and an emphasis on critical thinking, problem-solving skills, and technical knowledge. For example, in Rwanda, the Digital Ambassadors Programme, launched in 2017, aims to increase digital literacy for five million Rwandan citizens, mainly focusing on rural areas. The programme trains community members to use e-government and financial services, develop online safety skills, and support business activities for job growth. This initiative aligns with efforts to provide digital literacy programs for disadvantaged groups and improve infrastructure in rural areas (Mustapha 2024).

While the digital economy offers immense potential for economic growth, job creation, and poverty reduction, it presents challenges, such as the need for digital inclusion and addressing the environmental impact of increased technology use. To fully leverage the benefits of the digital economy, developing country governments and their development partners must focus on ensuring affordable and accessible Internet, providing appropriate digital devices to meet diverse user needs, offering comprehensive digital literacy instruction, delivering high-quality technical support, and designing inclusive and accessible digital content and applications.

2.2.3 Innovation and technology adoption

Innovation and technology adoption centre on advancements in digital technologies, new digitally enabled business models, the role of ICTs as a driver for innovation, and the uptake of ICTs and other emerging technologies by businesses. However, innovation and technology adoption in developing economies present unique challenges and opportunities.

The digital economy in developing countries is expanding rapidly, with governments recognising its potential for economic growth and poverty reduction. For example, Vietnam aims for its digital economy to contribute 30 percent of GDP by 2030. However, significant disparities remain, with only six percent of people in least-developed countries shopping online compared to 62 percent in advanced economies (United Nations Conference on Trade and Development 2023).

Developing country governments and their development partners can support inclusive PSD by focusing on bridging the digital divide and leveraging ICTs for economic growth. This requires policy, legal and regulatory reforms in the following key areas:

[14] Digital Literacy Programme in Kenya; Developing IT Skills in Children to align them to the Digital World and Changing Nature of Work-Briefing Note, Kennedy Ogolla.

- **ICT adoption by businesses.** Small and medium-sized enterprises (SMEs) in developing countries face several challenges in adopting ICTs. These include limited financial resources, lack of skilled personnel, insufficient information and knowledge about ICT benefits, and poor infrastructure and non-customized software solutions (Dickson 2022). Despite these challenges, the COVID-19 pandemic has driven significant uptake of digital technologies among firms in developing countries.
- **AI and emerging technologies.** While research in machine learning and AI-related technologies is less prevalent in developing economies, there is growing interest. AI and automation could generate 97 million new jobs globally by 2025, with countries like Rwanda showing promising potential (World Economic Forum 2025). However, the adoption of advanced technologies like robotisation in manufacturing remains limited due to infrastructure and skill constraints. The United Nations Industrial Development Organization (UNIDO) says that adopting advanced digital production technologies requires significant efforts in developing framework conditions related to regulations and digital infrastructure. This includes the institutional setting for policy formulation and the channels for international collaboration and technology transfer. The institutional setting is particularly important in making these technologies work for inclusive and sustainable industrial development. New industrial policy formulation, in this context, should stem from close collaboration between private and public sectors, in which learning (identifying constraints), experimentation (finding ways of removing these constraints), coordination (placing all relevant stakeholders in the table), and monitoring (assessing the results) should be fundamental guiding principles (United Nations Industrial Development Organization 2019).
- **Research and Development (R&D) and innovation support.** Developing countries are implementing strategies to support business R&D and innovation. For example, Mauritania's national digital transformation agenda for 2022-2025 and the ASEAN Connectivity Initiative promote digital technology adoption by micro, small, and medium enterprises (MSMEs) (United Nations Conference on Trade and Development 2023).
- **ICT-related innovations.** Innovations tailored to developing economies are emerging. These include mobile money services, expanding financial inclusion, and telecentres providing shared access to digital services for local communities and businesses (United Nations Conference on Trade and Development 2023).
- **Cloud Computing Services.** While the adoption of cloud computing is on the rise, it encounters challenges in developing economies where internet connectivity is limited, reliability issues remain, and concerns regarding data security and sovereignty persist.[15] Therefore, although these economies are making strides in digital adoption, notable gaps still exist compared to developed nations. Addressing infrastructure needs, enhancing digital skills, and implementing supportive policies are crucial for these countries to fully leverage the advantages of the digital economy and bridge the digital divide.

[15] For example, Cloudpermit (formerly Evolta) illustrates how cloud computing can empower developing countries by providing access to advanced digital services without the heavy upfront costs of infrastructure, IT support, and security maintenance. This subscription-based, cloud-hosted platform enables local governments to streamline building permitting, inspections, and code enforcement processes efficiently and transparently, as demonstrated by its adoption across municipalities in Finland, the United States, and Canada. Such cloud-based solutions reduce the need for investing in costly servers and specialised IT staff, making digital transformation more accessible where internet connectivity is reliable. Moreover, they enhance service delivery speed and improve the user experience for both officials and citizens through mobile access and real-time data management. See World Bank (2020).

2.2.4 Jobs and growth

Jobs and growth explore how digital technologies drive economic growth and job creation. This includes the labour market, employment opportunities, investments in ICTs, value addition, international trade, e-commerce, and productivity improvements.

The digital economy is creating new employment opportunities in developing countries. Due to infrastructure and skill gaps, information industries are growing slower than developed economies. ICT occupations are expanding, though there's often a mismatch between available skills and job requirements. Gender disparities in ICT jobs remain significant, with women underrepresented in the sector.

Developing country governments and their development partners can support digital technologies to drive economic growth and job creation in developing economies, albeit with unique challenges and opportunities compared to developed nations. These include:

- **E-commerce and trade.** While e-commerce is growing rapidly in developing economies, only six percent of people in the least developed countries shop online, compared to 62 percent in advanced economies. Cross-border e-commerce encounters challenges due to limited payment options and underdeveloped trade logistics. The proportion of ICT goods in merchandise trade is generally lower in developing countries, reflecting limited production capabilities.
- **Value addition and productivity.** The impact of ICTs on productivity in developing economies is complex. Investment in ICT has shown mixed results on productivity growth, with some studies finding no significant effect on countries like Cameroon (Nkama, Honore et al. 2007, Nkama 2023). While the extended ICT footprint grows, its economic impact varies widely across developing nations. ICT investment often correlates with human capital investment, which may explain differences in outcomes between developed and developing countries.
- **ICT investment and infrastructure.** Developing countries are making progress in ICT investment, but challenges remain. Less than half the population in LDCs has access to 4G mobile network coverage, which is crucial for digital trade. ICT investment often occurs against a backdrop of weak institutional capacity and limited fiscal resources.
- **Global value chains and international trade.** ICTs are influencing developing countries' participation in global value chains. Digital technologies offer opportunities for developing countries to integrate into global supply chains more effectively. However, unfavourable terms of global supply chain integration often persist. Telecommunications, computer and information services are growing as a percentage of the services trade, but from a low base in many developing economies.

While digital technologies offer significant potential for economic growth in developing countries, several challenges persist:

- With uneven ICT infrastructure and skills access, the digital divide remains a significant concern.
- Developing countries often struggle to catch up and achieve economic prosperity through digitalisation, like developed countries did through industrialisation.
- Evidence suggests that development trajectories are not driven primarily by technological change but by a complex interplay of social, economic, and institutional forces.

Thus, while digital technologies are increasingly important for economic growth and job creation in developing economies, their impact is not uniform. Donor and development agencies can work with developing country governments, business representatives, and civil society to identify priority needs and craft digitalisation strategies suited to their contexts.

3. Issues of concern for developing and emerging economies

Within the broader framework of challenges impacting the transition to a digitised economy, several issues pertain to developing and emerging economies and their pursuit of the SDGs. This section briefly highlights the issues affecting three topics of concern to many donor and development agencies supporting BER:

- Informality and the formalisation of the informal economy.
- Micro and small-sized enterprises.
- Inclusion and bridging the digital divide.

3.1 Informality and the formalisation of the informal economy

Research by the World Bank Group suggests that the prevalence of employment in micro or informal businesses underscores the need to adapt and shape technologies for the local productive needs of these businesses and new entrants. Because seven in ten African workers are self-employed, operating own-account businesses relying mainly on manual technologies, it is essential to ensure the business environment "facilitates the reallocation of workers to larger, more digitally enabled and growing firms, because such firms play a disproportional role in pairing workers with more advanced technologies, thereby boosting productivity, output, and jobs" (Cruz, Salgado et al. 2024).

The ASEAN Economic Ministers meeting in 2020 called on governments to promote digitalisation and formalisation in partnership with private sector organisations and civil society by developing feedback mechanisms and encouraging the private sector to promote among their members the importance of being formalised. The public and private sectors can "contribute to encouraging formalisation as governments can better learn what barriers exist to formalisation and how to potentially reduce them." Meaningful stakeholder engagement in the development of regulations is expected to lead to higher compliance and acceptance of regulations, particularly when stakeholders feel that their views were considered (Association of Southeast Asian Nations 2020).

Examining the spillovers in the use of digital technologies by formal and informal businesses in Zambia, it was found that closer geographic proximity to formal firms is associated with a significantly higher likelihood of digital adoption by informal businesses. The finding holds for various types of digital technologies. For most, the technology spillover effect from formal firms is more significant for informal businesses with a highly educated owner, a permanent location and a younger firm age (Jolevski, Nayyar et al. 2024). From a BER perspective, the authors argue that rather than having the informal sector operate separately from the formal sector, some co-existence and co-location can help the informal sector modernise, either through providing better public infrastructure, arranging entrepreneurship programmes, or establishing institutional arrangements on how they can co-exist.

The International Labour Organization (ILO) suggests that digitalising administrative formalities, including business start-ups and ongoing compliance formalities, can significantly reduce the business costs of transitioning to and remaining in the formal economy (International Labour Organization 2021). Researchers from the World Bank found that digital financial services can make it easier for informal firms to register and operate as formal businesses while creating synergies between individual reform efforts. For example, companies that use a digital payroll system can easily make pension contributions when online platforms are available. Better access to formal financial services can encourage firms to formalise. Governments have used subsidies and other tax inducements to enable businesses and consumers to adopt digital financial services (Klapper, Miller et al. 2019).

3.1.1 Micro and small-sized enterprises

MSEs in developing countries face significant challenges, including limited access to finance, poor infrastructure and a lack of digital advancement. The digital divide hampers their ability to access new markets and compete globally, and limited digital literacy and skills gaps impede their ability to adopt new technologies.

A digitised economy can help address these challenges. Digital transformation can optimise processes, increase efficiency and reduce costs. E-commerce platforms can expand market access, while digital financial services can improve access to credit. Digitalisation can also create digital footprints for MSEs, making it easier for financial institutions to serve them. Online training platforms can address skills gaps, helping MSEs stay competitive. By embracing digitalisation, MSEs can lower barriers to entry, attract talent, and improve their overall sustainability in the evolving business landscape. This can ultimately enhance their growth and contribution to local economies.

The United Nations Industrial Development Organization (UNDP 2023) argues that small firms operate under different circumstances than medium or large ones. “Unlike large firms, which often have dedicated automation departments staffed with expert technicians, small firms typically have limited resources, with at most one or two individuals responsible for maintenance tasks.” Thus, a different approach is required to support SMEs. Its research identified initiatives that play a crucial role in providing valuable assistance to small businesses by offering various support mechanisms, such as:

- Providing subsidies to help small firms acquire and implement technologies.
- Offering access to financing options with subsidised fees, making it more affordable for small businesses to invest in digital technologies.
- Provide consultancy and training services on a free or subsidised basis and facilitate the implementation process.

3.1.2 Inclusion and bridging the digital divide

One of the most significant challenges facing digitalisation concerns how it can be used to exacerbate or address the digital divide. In the DCED assessment of lessons learned on the role of business regulation in economic recovery from the COVID-19 Pandemic, the need to close the digital divide was described as urgent. For policymakers, this requires both digitalising existing systems and simplifying processes. Moreover, a regulatory overhaul is often necessary as laws governing electronic documents and government-to-business (G2B) and government-to-government (G2G) transactions should be introduced or updated. However, the good news for financially constrained governments is that the regulatory and legal reforms that lay the groundwork for RegTech solutions are comparatively inexpensive (Nielsen, Arlet et al. 2021).

As the discussion in Section 3.1.4 has shown, technology can enhance regulatory quality and effectiveness. Technology significantly improves regulatory inspections and enforcement by providing valuable data on compliance and risk, making performance—or risk-based regulations a critical prerequisite. Regulatory alternatives, such as self- or co-regulations and regulatory cooperation, facilitate the design of timely technology-based responses to disruptive business models, coordinate across multiple agencies, share data, and create automated responses to regulatory inquiries.

BER can improve the regulatory framework for data management and privacy. Establishing data collection regulations helps clearly define the government's data needs and mandates for collection, sharing and use. Creating unique identifiers for core data elements allows mapping and linking several G2B services, including regulatory delivery. Distinct regulatory policies and guidelines are essential to address issues related to data privacy, the prevention of discrimination and biased algorithms, and ethical considerations.

Developing country governments and their development partners can support innovation and testing. For example, regulatory sandbox environments effectively assess various aspects, including policy development, technological relevance and feasibility, interoperability, costs, and business models. Collaborations with academic and research institutions have benefited agencies in multiple ways, offering access to modern and innovative solutions, consistent support, and availability of short-term resources.

4. Donor-supported business environment reform for digital transformation

This chapter examines the role of donor and development agencies in facilitating the digital transformation of developing economies. While significant steps can be taken to enhance the digitisation of national economies (e.g., investments in infrastructure, improvements in internet access, skills development, and closing the digital divide), this chapter emphasises the contribution of donors and development agencies to fostering changes in the national business environment that support digital transformation.

UNCTAD (2019) suggests that donor agency "support to digital economies in developing countries can have significant impacts on the achievement of the SDGs. The experience gathered to date suggests that all SDGs are affected in some way by digitalisation – positively or negatively." In its report on *Donor Support to the Digital Economy in Developing Countries*, UNCTAD proposed the following recommendations for actions by donors:

1. Establish an alliance of donor agencies at the global level – for example, through the OECD's Development Assistance Committee and other established international fora – to document, exchange and promote good standards and practices in donor support to digital economies in developing countries, with special emphasis on digital inclusion and leaving no one behind.
2. Improve the alignment of donor support through digital economies in support of the SDGs and development strategies and programmes of partners in developing countries.
3. Promote broad-based awareness of the opportunities and risks of digital economy development among partners in developing economies to strengthen local ownership and stakeholder empowerment, as well as within donors' home constituencies.
4. Develop and apply viable concepts and tools for evidence-based, results-oriented and unbiased monitoring and evaluation of the outcomes and impacts of donor interventions to support digital economies in developing countries.

Section 3.1 has shown how donor and development agencies can support BER by using digital technologies to improve the 'functional areas' of the business environment. Many donor and development agencies collaborate with their partners (i.e., developing country governments, business organisations, and civil society) to adopt and implement new digital technologies that improve the speed and efficiency of business regulation processes.

The Principles for Digital Development were established in 2017 and endorsed by numerous development organisations as general guidance for digital technology practitioners to enhance donor support outcomes. COVID-19 accelerated the push towards digitalisation, and, in response, many development programmes are adopting more efficient digital solutions in areas that previously relied on analogue delivery mechanisms (e.g., training, technical advice, monitoring and evaluation). However, the rush to digitalise may hinder donor coordination and risk widening digital divides in gender, age groups, and urban versus rural populations.

Principles for digital development

The Principles for Digital Development serve as a starting point for policymakers, practitioners and technologists to ensure that all people can benefit from digital initiatives and from the broader digital society. Initially developed in 2014 and updated in 2024, the principles are officially endorsed by more than 300 organisations, including donors, international organisations, and civil society organisations. During the first decade (2014-2024), they widely influenced funder procurement policies and the design and implementation of development programs.

The principles represent a shared commitment to responsible digital technology use in service of development goals. They have helped establish a common language and framework among digital development practitioners and have facilitated collaboration and innovation across organisations and countries.

1. Understand the existing ecosystem
2. Share, reuse, and improve
3. Design with people
4. Design for inclusion
5. Build for sustainability
6. Establish people-first data practices
7. Create open and transparent practices
8. Anticipate and mitigate digital harms
9. Use evidence to improve outcomes

SOURCE: Principles for Digital Development (2024)

Donor and development agencies aim to achieve several interconnected objectives when supporting the transition to digitised economies in developing countries:

- **Building foundational digital infrastructure.** The *World Development Report 2021: Data for Better Lives* explores the tremendous potential of the changing data landscape to improve the lives of poor people (World Bank 2021). Donors prioritise expanding inclusive access to affordable, reliable internet and mobile networks, particularly in underserved rural and marginalised communities.[16]
- **Strengthening policy and regulatory frameworks.** A key objective is assisting governments in creating adaptive regulatory environments that balance innovation with consumer protection. This includes:
  - Strengthening the norms, standards and regulatory frameworks for domestic digital firms to thrive is widely regarded as an essential enabling condition. This includes taxation policies to facilitate appropriate value capture in countries where digital services are marketed (United Nations Conference on Trade and Development 2019).
  - Supporting data governance laws, cybersecurity protocols, and regulatory sandboxes for fintech (e.g., Kenya's M-Pesa).

[16] This includes funding projects like Nepal's internet expansion ($15.3 million via British International Investment) and shared digital infrastructure initiatives to reduce costs and duplication (Simmonds 2025).

- Harmonising digital standards with global frameworks like the EU's Digital Markets Act (Vota 2023).[17]
- Ensuring the effectiveness of competition policies to avoid excessive concentration of market power and ensure that digital products and services remain affordable through healthy competition.

- **Promoting inclusive digital ecosystems.** Donors focus on reducing inequalities by targeting women, youth and marginalised groups through initiatives like digital skills training and inclusive financial systems (e.g., mobile money platforms). Universal service obligations for internet providers are advocated to bridge access gaps (Transform Health 2022).
- **Fostering innovation and entrepreneurship.** Donors can support innovation and entrepreneurship by reducing barriers to market entry to facilitate innovation. Digital technology can also be a practical tool in this area, as described in Section 3.1 (also see World Bank 2021). This includes supporting digital startups and SMEs through funding, incubators and market access (e.g., the UK's Digital Economy for Africa initiative) to drive job creation and economic diversification. Donors can also invest in open-source platforms to enable localised solutions (Vota 2023).
- **Enhancing global and regional collaboration.** Donors seek to reduce fragmentation by aligning efforts with national digital strategies (e.g., the African Union's Digital Transformation Strategy) and fostering alliances like the OECD's proposed donor coalition (United Nations Conference on Trade and Development 2019). Cross-border initiatives, such as regional digital courts, are promoted to resolve disputes (United Nations Conference on Trade and Development 2024).

Open issues in donor support to SDGs through digital solutions

In the context of digital for development, donors and their development partners are today challenged to provide responses to the following key questions:

1. **Ownership:** Do stakeholders in developing countries have strong ownership of and control over the design and implementation of donor support to their digital economies?
2. **Alignment:** Is donor support to digital economies in developing countries well integrated into local strategic planning, operative programming and public financial management processes and systems?
3. **Harmonisation:** Are donor practices in the design and implementation of support to digital economies in developing countries harmonised such that their transparency at the stakeholder level is facilitated?
4. **Results-orientation:** Are adequate resources allocated to ensure evidence-based and results-oriented monitoring and evaluation of donor support to digital economies in developing countries?
5. **Accountability:** Are decision makers and project managers held accountable for the success or failure of donor support to digital economies in developing countries?

SOURCE: UNCTAD (2019)

[17] For more information on the EU's Digital Markets Act go to: https://digital-markets-act.ec.europa.eu/index_en

- **Mitigating digital risks.** Objectives include addressing e-waste management, cybersecurity threats, and labour market disruptions through capacity-building and policy guidance. Donors support monitoring frameworks to evaluate digital initiatives' impacts on SDGs (United States Agency for International Development 2024).

By pursuing these objectives, donors aim to create resilient, equitable digital economies that align with broader development goals, such as gender equality, climate resilience and poverty reduction.

The Pathways for Prosperity Commission (2018) says that while some countries will prosper in a new global digital economy, others are not ready and risk being left behind. It presents a Digital Roadmap with five priority areas for countries to create their digital future.

1. **Support a digital compact for inclusive development.** Donors and development agencies can help fund and support country initiatives backed by a broad compact between leaders across society and the economy. Coordinated initiatives under such a compact will likely be more effective than piecemeal funding.
2. **Put people at the centre of the digital future.** This can be achieved by actively investing in digital platforms designed to involve citizens in decision-making and ensure their voices are heard. Donors and development agencies can support governments, at least initially, to build and finance more robust social protection programmes that protect those left behind by technological change while empowering citizens by funding initiatives to make government data accessible and meaningful to people. Support governments in establishing secure, accountable, and responsible data governance regimes.
3. **Build the digital essentials.** Provide technical frameworks and funding to assist governments and private companies in creating foundational digital systems, such as digital ID and digital payments. Help to close the funding gap for digital entrepreneurs and innovators in emerging markets by providing guarantees, insurance, and aggregator funds to de-risk venture investment. Support the development of projects and tools that seek to reduce the costs and frictions of investment in emerging markets to help create a favourable investment environment.
4. **Help ensure digital technologies reach everyone.** Fund early-stage and risky innovations that design digital products for the most marginalised people. Develop and invest in methodologies to measure and track the inclusiveness of new products and services; invest in companies that demonstrate the most social impact. Support projects to challenge existing gender norms that restrict women's use of technology.
5. **Contribute to better technology governance for the future**. Fund bold, new efforts to develop regulatory solutions that meet the needs of developing countries.

5. Recommendations for further action and research

There is a wide range of policy, legal and regulatory reform challenges affecting developing economies and their digital transformation, including the role that donor and development agencies can play in supporting needed reforms. A review of the literature highlights the following research gaps and opportunities:

- **Anticipatory governance for emerging technologies.** Current frameworks lack mechanisms to address quantum computing, decentralised finance and neuromorphic computing, which remain underexplored in policy discourse. The OECD's *Framework for Anticipatory Governance* (2024) highlights the need for adaptive regulations and foresight tools to manage risks such as cybersecurity threats and equity gaps (Organisation for Economic Co-operation and Development 2024). Future research could focus on regulatory sandboxes for experimental governance of AI and blockchain applications in low-resource settings (Nugraha and Hermawan 2024) and on ethical frameworks for equitable access to emerging technologies, addressing the risks of monopolisation by advanced economies (United Nations 2023).
- **Context-specific metrics and definitions.** The impact of the digital economy is often underestimated due to inconsistent measurement. Studies note that developing countries like Nigeria struggle with data scarcity and lack tailored indices (Oloyede, Faruk et al. 2023). Key gaps include formulating localised metrics to capture informal digital sectors (e.g., mobile money ecosystems) and standardised definitions for cross-country comparisons, balancing global norms with regional needs (Cenderello and Bertrand 2022).
- **Inclusive innovation ecosystems.** While AI and fintech adoption grow, policies often neglect marginalised groups. Research should explore gender-sensitive regulations to ensure equitable participation in digital labour markets (IEEE Computer Society 2023) and subsidies for rural digital infrastructure, addressing barriers like high 5G deployment costs in least-developed countries (Cenderello and Bertrand 2022).
- **Adaptive legal frameworks.** Developing countries face outdated laws ill-suited for rapid technological change. Priorities for reform include agile legislation for cross-border data flows and digital taxation, informed by models like the EU's Digital Markets Act (Organisation for Economic Co-operation and Development 2024) and capacity-building for judicial systems to handle cybercrime and AI-related disputes (IEEE Computer Society 2023) (Oloyede, Faruk et al. 2023).
- **Ethical AI and algorithm accountability.** As artificial intelligence becomes more integral to businesses and societies, understanding its moral implications and ensuring algorithmic accountability will be critical (O'Neil, 2016).
- **Digital sovereignty.** With data becoming a significant asset, nations strive to attain digital sovereignty, balancing open access and data protection. A vital research question is how countries can achieve this balance without stifling innovation (Chen and Reddick 2021).
- **Economic models in the digital age.** Traditional economic models might be inadequate to explain phenomena in the digital age. A rich area for exploration is how the digital economy disrupts these models and what new paradigms will emerge (Tapscott and Tapscott 2017).

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