

# OVERVIEW: POWERING AN INCLUSIVE DIGITAL FUTURE

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## ABSTRACT

Digital transformation is taking place around the world at different speeds, in countries with vastly different levels of resources, regulation and public engagement. This overview, enriched by evidence and insights from across the report, highlights that digital realities in developing countries require bespoke responses. Gathering evidence from countries at different stages of digital transformation, this chapter presents success factors for building inclusive digital ecosystems. It calls for global co-operation to tackle universal risks and lays out a development co-operation framework to power an inclusive digital future.



The value of digital transformation is that it enables well-being and progress. Digital technology brings governments and citizens closer together, opens new economic opportunities, improves access to education, healthcare and other services, promotes transparency, and offers platforms for discussion and dissent. Internet connectivity is now a necessity and development goal. But technological advances rippling across all aspects of human activity often affect societies before they can determine how to manage the benefits and risks. Every technological revolution gives humanity new tools – farming, mechanisation, electricity and now computers – and each time humanity has to decide for what and whose benefit those tools should be used, and how to manage the changes they bring.

In many ways, digital transformation is at a tipping point, with stark differences between wealthy and developing nations. Digital technologies can help achieve development goals, but persistent digital divides hamper development for many and leave already marginalised populations further behind. Digitalisation is proceeding at

different speeds, and is unevenly resourced and regulated. Just as with the other great transition – the imperative to Go Green – that all countries are challenged to make, choices made now will either lock in digital divides for decades or enable a future of shared prosperity and well-being.

A confluence of factors makes this a strategic moment for development actors to step in. The COVID-19 crisis accelerated adoption of digital solutions worldwide, especially in developing countries, prompting a spike in demand for international support, knowledge sharing and collaboration. Digital technology is on the cusp of a new phase, with evolutions in 5G, artificial intelligence (AI), robotics and the Internet of Things. International standard setting and digital safeguarding is picking up pace, though largely without the participation of the world's least developed countries. Only by thinking and working beyond silos, designing holistic digital strategies for sustainable impact, and applying a people-centred approach to their policies and investments will international development actors be able to deliver on the mission of an inclusive and just digital future.

Therefore, the *2021 Development Co-operation Report* focuses on the fundamental question: How can development co-operation actors help tip the balance towards a just digital transformation for greener, safer and more sustainable development? Many dub the digital transformation the “fourth industrial revolution” and, like its predecessors, it presents the global community with decisions to make. The development co-operation community must seize this moment, look forward and ask how it can best play its role to build an inclusive digital future.

### Digital realities in developing countries require bespoke responses

Going digital raises common and complex challenges for all countries. The OECD’s Going Digital Integrated Policy Framework recognises that digital transformation impacts and is impacted by interrelated policy domains and that trade-offs must be carefully managed (see Chapter 9). Both OECD and non-member countries assessed against this framework score low in innovation, public spending on active labour market policies, and information and communication technology (ICT) goods and services trade (OECD, 2021<sup>[1]</sup>). The 2019 OECD Digital Government Index also found that governments in most OECD countries did not yet have user-driven policies and inclusive mechanisms in place to design and deliver services for citizens (see Chapter 11).

While every country faces many of the same complex challenges, there is a stark digital divide between advanced economies and low- and middle-income countries. Sambuli (see In My View in Part I) highlights the complexity of digital divides to be tackled: “Digital divides go beyond the divide between the connected and unconnected; they also manifest among the connected in both developed and developing nations. Digital divides take on access, skills, language and gendered dimensions, to name a few. Digital transformation agendas must consider

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Figure 1 provides evidence on low- and middle-income countries in relation to the policy dimensions of the Going Digital Integrated Policy Framework. The evidence suggests that developing countries face higher hurdles from the start in terms of their regulatory and policy-making environments, making their digital transformation more daunting to manage. Developing countries have lower levels of access to digital technologies and their populations face

Figure 1. Developing countries face challenges across the OECD's Integrated Framework for Digital Transformation



Source: Authors' compilation from chapters and case studies in the report.

significant barriers to use. They are further behind in their capacity to harness digital technology to offer public services online, take advantage of AI, put strong cybersecurity measures in place, open new economic opportunities through e-commerce, or reform their tax systems to capture revenue created by digital trade. They also grapple with the implications of digital transformation on both formal and informal labour markets, and on economic models that rely on natural resources.

### ***Countries take the lead on their digital journeys, with common factors for success***

Each country must chart its own digital transformation journey to ensure it meets needs and matches the national digital reality and readiness. The COVID-19 crisis helped fast-track digital transformation in low- and middle-income countries, albeit to different degrees (see Chapters 1, 6 and 22). Success factors for determining policy priorities, managing national digital processes, and becoming a digital government are emerging.

#### **Success factors for setting priorities and managing the digital transformation process**

- Leadership from a central body such as a president's or prime minister's office helps identify needs and strengths, build support and manage trade-offs. Thanks to high-level leadership in South Africa, the president's plan to accelerate economic development incorporated recommendations for the digital economy (see Chapter 7).
- Political backing helps turn strategies into reality, generating the required underpinning finance, skills, and long-term and integrated approach to building digital systems. Based on its strategy process, Ethiopia is establishing a venture capital fund for tech start-ups (see Chapter 7).
- A clear vision of how digital tools advance the country's wider ambitions can guide strategic decisions. Bangladesh uses digital

technology as a pro-poor tool and a driver to achieve middle-income status ahead of its target date (see Chapter 7).

- Prioritising voices of those most likely to be disadvantaged by digital transformation strengthens the strategy process. The government of Dominica pledged that its digital plan will reflect the views of all Dominicans (see Chapter 6).
- Quick gains relevant to local context can indicate the opportunities. A national strategy for digitalisation in Bolivia, where only 5% of jobs are at high risk of automation, would differ from that of Uruguay, where 29% of jobs are at high risk (see Chapter 1). For many developing countries, quick gains commonly relate to how digital technology might improve efficiency in agricultural value chains or benefit informal workers.
- A whole-of-government approach can manage sectoral interdependencies in policy areas such as trade, taxation, social protection, energy and environment, and support for new business models. The government of Moldova, for example, initially focused its digital strategy on the ICT sector but is now making digital transformation a national priority across sectors (see Chapter 6).
- Partnering with the private sector helps manage network quality; pricing of digital infrastructure, data and digital devices; and how and where digital technologies are deployed. Tanzania's Micro Mobile Network Operator license encourages cellular service for small populations in rural areas (see Chapter 22).

#### **Success factors for becoming a digital government**

- Build capacity to regulate specialised technical areas. The advent of 5G is raising issues regarding spectrum allocation that governments are being called to address. Mexico's Federal Telecommunications and Broadcasting Law of 2014 introduced a "social use" concession for spectrum

assignments<sup>1</sup> reserved for community, educational, cultural or scientific purposes (see Chapter 22).

- Align government processes, such as procurement, to remove barriers to putting digital solutions in place. The Ministry of Health of Sri Lanka implemented a digital COVID-19 surveillance system based on DHIS2, a free and open-source health management information system, because the system was compatible with procurement procedures, among other government processes (see Chapter 26).
- Support e-government capacity to expand access to services such as social protection payments. E-formalisation processes can facilitate increased protection and better conditions for workers (see Chapter 18). Digitalisation of tax and trade processes can improve revenue generation (see Chapters 14 and 15). Simply digitalising a service, however, does not necessarily mean more people are reached or outcomes improved. The redesign of Colombia's digital citizen portal shows how designing digital services with a user-centred approach can improve user experience and engagement (see Chapter 13).
- Keep pace with the changing technology landscape using context-specific approaches to agile policy making (Jeník and Duff, 2020<sub>[2]</sub>). Working towards agreed principles can guide regulation and technical standards.

### Global co-operation should tackle universal risks

The proliferation of digital technologies relies on global connectedness and brings benefits and risks that transcend national borders. The physical infrastructure underpinning digital transformation (e.g. cables, data storage) often spans multiple countries. Cross-border data flows and increasingly complex issues such as taxation, cybersecurity, and privacy and personal data protection require harmonisation of

governance frameworks. While each country must chart its own digital path, shared norms and rules for governing digital technologies are needed. These must remove barriers to market-driven investment while leaving space to correct for market failures that lead to digital disadvantage. They also must set a high bar for the safety of data and of the individuals and groups such data represent. Without meaningful representation and voice in setting standards, many low- and middle-income countries are relegated to the position of standard-takers, pushed to adopt frameworks inappropriate for their circumstances and implementation capacity. But in many global forums related to digital governance, developing countries either do not have the capacity to engage or do not see the content as relevant.

Because digital transformation must reconcile competing demands and stakeholders, it could spearhead inclusive approaches to global governance. Global technology governance could pioneer multi-stakeholder models that involve the

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private sector and civil society, offering an alternative to traditional and typically inter-governmental multilateralism (see *In My View* by Sambuli in Part I). Demand is building for digital sovereignty – the power and authority of a national government to make unfettered decisions affecting citizens and businesses within the digital domain. Global processes will need to balance this pressure against misinterpretations of sovereignty, for example in data localism that could impede the development of a global digital economy (Cory, 2017<sup>[3]</sup>).

### ***Upholding human rights and democratic values***

New legal and regulatory approaches are required to uphold human rights and limit digital authoritarianism. The same technologies that offer the promise of more connected and prosperous societies also carry the potential to harm individual rights and collective freedoms. The UN Human Rights Council has noted with deep concern that in many countries, groups that uphold human rights face threats and harassment, and pointed to the use of technological tools developed by the private surveillance industry to hack into devices or otherwise violate individuals' right to privacy (UN, 2021<sup>[4]</sup>).

Digital tools are used to repress through mass surveillance, citizen profiling and targeted disinformation. Evidence is also mounting that social media platforms push users towards extremist content and exacerbate political and social polarisation. Digital technology can provide civic space, particularly when other outlets for civic engagement and expression in the offline world are closed. These spaces can be fragile. A recent study across 10 African countries found 115 examples of governments closing online civic space but only 65 examples of citizens opening democratic spaces online over the same period (see Chapter 8). In the first five months of 2021, at least 50 Internet shutdowns were recorded in 21 countries (see Chapter 10). Internet shutdowns not only

curtail freedom of speech, but can disrupt economic activity, the delivery of public services and access to the digital tools on which societies are increasingly reliant.

### ***Protecting data, strengthening cybersecurity and limiting disinformation***

Digital technologies, both in private hands and deployed by governments, pose significant and far-reaching security challenges. The business models of social media platforms gather and leverage personal data to predict and shape online behaviour. Labour market platforms allow businesses to monetise workers' data. Many governments increasingly deliver services based on digital identification systems that amass sensitive personal data. Data leaks and revelations about the sale of data without consent, and the use of data to monitor and manipulate societal groups fuel public pressure for more sophisticated data protection, privacy and security.

High-income countries' long-established data protection regimes are racing to catch up with the evolving risks. With fewer resources, many low- and middle-income countries struggle to find an appropriate regulatory model and establish a functioning regime. Fewer than half of least-developed countries (LDCs) have data- or consumer-protection laws that cover online activities (see Chapter 3). This contributes to low levels of public trust in digital technologies and limits data sharing, needed to advance sustainable development. Moreover, for many low- and middle-income countries, strengthening cybersecurity became an area of focus only recently. Their adoption of standards and regulations is lower than for data protection, and resources dedicated are minimal.

Digital technology can enable new pathways for disinformation, that is, harmful, false or manipulated information created, disseminated and amplified for political, ideological or commercial motives (see *In My View* by Khan in Part II). In 2020,

130 countries and official observers to the UN called for action to counter the spread of disinformation, and international organisations were called on to increase technical assistance for regulatory frameworks and policies to support appropriate disinformation responses (Broadband Commission for Sustainable Development, 2020<sup>[5]</sup>). The deleterious effects of misinformation and disinformation online, particularly related to health issues, became clear during the COVID-19 pandemic (Linden et al., 2021<sup>[6]</sup>; WHO, 2021<sup>[7]</sup>).

### ***Tackling inequalities, and making digital work for women***

Digital inequalities mirror and magnify offline inequalities, particularly for women and girls. For example, there is a growing body of evidence that biases in algorithmic decision making can exacerbate racial and gender inequalities (UNESCO, 2020<sup>[8]</sup>; Turner Lee, Resnick and Barton, 2019<sup>[9]</sup>; Buolamwini and Gebru, 2018<sup>[10]</sup>). The need for locally relevant training data and analytical approaches that reflect the lives of all social groups is only beginning to be addressed (Open for Good, n.d.<sup>[11]</sup>). Better understanding of the intricacies of the gender digital divide can shed light on how digital transformation may worsen other inequalities and inform strategies to make digital work for all.

Women across the world face similar barriers to inclusion offline and online. Recommendations for OECD countries could equally apply to developing countries, including leveraging digital technologies, recognising women's heightened safety and security concerns, and adopting policies that build trust in digital systems, which can increase women's labour market participation and entrepreneurship (2018<sup>[12]</sup>). However, while barriers may be similar, the magnitude of the gender digital divide in developing countries is much greater.

Since the beginning of the COVID-19 pandemic, digital technology enabled millions of women to open their first bank accounts

online, improving their financing inclusion (see Chapter 28). And yet women and girls in many parts of the world lack access to the digital world or find that digital products and services do not meet their needs. The cost of the gender gap is staggering. Over the last decade, it is estimated that USD 1 trillion in gross domestic product has been lost in 32 developing countries due to the gender gap in Internet use (Alliance for Affordable Internet, 2021<sup>[13]</sup>). Nearly USD 300 billion could be added to the value of e-commerce markets in Africa and Southeast Asia by 2030 if gender gaps were closed (see Chapter 5). Development actors are increasingly focusing on mechanisms to identify gender gaps and ensure that digital transformations are deliberately inclusive of women (Box 1).

Narrowing the gender digital divide can open opportunities for women and girls across a range of development outcomes. It is therefore an urgent task, calling for targeted action. The UN Secretary-General's Roadmap for Digital Cooperation includes commitments and calls to action to ensure women and girls are full participants in and beneficiaries of digital transformation (UN, 2020<sup>[14]</sup>). The new UN Principles for Responsible Digital Payments specifically call for prioritising women.

### **A development co-operation framework to power an inclusive digital future**

Just nine years remain to regain ground lost in the COVID-19 crisis and achieve the Sustainable Development Goals (SDGs). Development actors have a crucial role to ensure that digital transformation serves those goals. Beyond the need to support and invest in universal Internet connectivity, digital public infrastructure and public goods, demand is growing for peer-to-peer exchange of knowledge and expertise between specialised bodies relating to digital transformation (see Chapters 7, 12 and 13). Development actors must also confront the fact that digitalisation risks reinforcing vulnerabilities rather than being a game



## BOX 1. BETTER EVIDENCE CAN TARGET ACTIONS FOR DIGITAL INCLUSION OF WOMEN AND GIRLS

To address digital gender gaps, it is essential to research the market barriers and other obstacles to women's inclusion in digital economies.

**Gender-sensitive diagnostics help design policies to achieve tangible change for women and girls.** Measuring the inclusion of women in digital economies can pinpoint gender gaps in access to finance, business ownership, and skills and financial literacy. The United Nations Capital Development Fund's Inclusive Digital Economy Scorecard and a separate tool focus on women's inclusion across various dimensions. In the 23 developing countries that used the two measures to date, countries with high aggregate scores in innovation tended to score low for women's inclusiveness in innovation. Use of the tool in Papua New Guinea informed targeted interventions to increase the number of women-led firms and women's access to finance and to financial products that meet their needs (see Chapter 27).

Similarly, by focusing on the granular measure of "meaningful connectivity", the Alliance for Affordable Internet diagnosed wider gender gaps than those shown in traditional measures of the Internet. In Colombia, for instance, the gender gap is 0.9% according to the traditional measure but 16.9% under the meaningful connectivity measure; the more targeted measure shows the gender gap is 14.9% in Ghana rather than 5.8% and to 2.6% in Indonesia rather than -0.1%, respectively (see Chapter 23).

**Data should reflect the lives of women and girls.** All diagnostics and tools lack data that accurately reflect the realities lived by women and girls. More sex-disaggregated and gender-sensitive data would improve the quality of insights for decision making (see Chapters 4, 23 and 27).

changer for development unless power imbalances and other systemic drivers of exclusion, inequalities and poverty are addressed.

Development policy makers need to acknowledge that not all digital interventions lead to positive outcomes. Strategies, safeguards and risk assessments should anticipate and manage for unintended negative consequences. For example, concerns that the biometric ID system in Afghanistan might be used to track and target citizens have prompted calls for international development to be much more cautious about future-proofing the digital solutions it supports (Chandran, 2021<sup>[15]</sup>). Development agencies' own data-sharing practices have drawn criticism for putting persecuted groups at risk (Human Rights Watch, 2021<sup>[16]</sup>). Given the sensitivity of data contained in digital systems and vulnerabilities of the populations they serve, development co-operation agencies will need to incorporate

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data protection and other safeguards into all decisions going forward.

Internal processes of development co-operation actors must also evolve to be fit

for a digital age. Feasibility assessments and approaches to measuring impact, and project and programme delivery that worked in the analogue age may not be sufficiently flexible in a digital environment. Financing, procurement and legal norms based on proprietary ownership, for instance, can be unsuited to supporting digital public goods, which are in common ownership. Development co-operation actors must also find new ways to work together. Lack of interoperability is a major pitfall of uncoordinated development co-operation, resulting in missed opportunities for greater impact such as not being able to use health data locked in digital silos for better health outcomes (see Chapters 25, 31 and 34), which also wastes resources due to duplication and can create digital stranded assets.

The recommendations for ways forward for development co-operation by contributors in Parts 1 to 4 of this report focus on three interconnected priorities. They are for development co-operation actors to: (1) ensure that policies and partnerships power an inclusive digital future; (2) focus on national and regional building blocks for sustainable digital ecosystems; and (3) make digital financing fit for purpose with greater scale, innovation and flexibility.

### ***Ensure that policies and partnerships power an inclusive digital future***

Leaders of international development agencies recognise the need for a new generation of strategies for digital transformation and the need to support partner countries to manage this transition responsibly and sustainably. Twelve DAC members have digital-for-development strategies and a further six mention digitalisation as a priority in their overarching development co-operation policies (see Chapter 33). A striking feature in recent strategies is a shift in focus towards inclusion, rights, gender and place-based divides, online civic space, policy and regulatory

capacity building, and increasing access and affordability.

Some development agencies pursue digital-by-default<sup>2</sup> across their portfolios, focusing on digital infrastructure and integrating digitalisation across sectors. A few larger development agencies and finance institutes invest in hard digital infrastructure, often through public private partnerships (e.g. IADB, WBG, and bilateral development finance institutes) (see Chapter 40). Meanwhile, the transfer and adoption of technology (e.g. FinTech and education technology) continues to be important, but with greater awareness of good practices in interoperability, scale, and the added value of harmonising tools – even if fragmentation and siloed digital solutions remain problematic.

Impact is greater when official development assistance is co-ordinated, harmonised (with a focus on comparative advantage), aligned with partner country strategies, and tailored to country context and needs (see Chapter 7). A constraint on the sustainability and effectiveness of development projects is that they tend to be short-term, fragmented and duplicative, while partner countries need predictable, long-term engagement to build strong digital systems that are sustainable and interoperable (see also Chapter 25). Many development co-operation providers adhere to the Principles for Digital Development, which offer a framework to be applied in development programming. International principles for effective development co-operation (OECD, 2008<sub>[17]</sub>) are particularly relevant but have yet to be applied explicitly in digital strategies. International digital alliances, hubs and partnerships seem to be gaining ground, however, showing increased commitment to join forces for greater impact and effectiveness.<sup>3</sup> These alliances also encourage peer exchange and knowledge sharing, which can increase digital literacy among less experienced providers and improve the quality of programmes.

At the same time development co-operation providers can work with diverse and new stakeholders to encourage and uphold do-no-harm principles and human-centred digital transformation focused on driving development outcomes. While private technology companies lead digital technology development, development actors can work with governments, civil society organisations and other stakeholders to influence the design of user-centred digital technologies thus shaping their relevance and use beyond commercial gain (see Chapter 32).

Internationally, DAC members and other development actors are well placed to advocate for the inclusion of low- and middle-income countries in global negotiations and normative processes that design the rules and values underpinning the digital future. Capacity development that prepares countries to participate effectively in these processes make a real difference as shown by the e-Trade for All Initiative (see Chapter 3). OECD countries are at the frontier of specialised regulatory networks and forums

that shape the global digital economy. For example, the OECD was instrumental in designing and delivering an agreement between 136 countries to address the tax challenges of the digital economy (OECD, n.d.<sub>[18]</sub>). In these arenas, development co-operation policy makers can actively promote policy coherence for development that considers decisions' negative and positive spill-overs on developing countries and those being left behind.

A checklist of critical actions for development co-operation providers to ensure policies and partnerships power an inclusive digital future can be found in Figure 2.

### ***Support national and regional building blocks for sustainable digital ecosystems***

Each country is at a different stage on its digital journey and the level and nature of use of digital technologies vary. But there are some basic building blocks that all country digital systems need. Partnership and dialogue with partner governments

Figure 2. Ensure that policies and partnerships build an inclusive digital future

## Checklist for digital policies and partnerships

- ✓ Commit to holistic digitalisation strategies for sustainable impact, considering opportunities to support enabling policy environments, digital infrastructure and cross-sector digital solutions.
- ✓ Build awareness, high-level buy-in, digital literacy and skills within the development co-operation system to deliver on the strategy.
- ✓ Participate in synergistic alliances for greater efficiency and effectiveness, with shared principles, good practices and knowledge sharing, with each partner playing to their comparative advantage.
- ✓ Promote safeguards in digital systems including data protection, and checks and balances for open civic space and democratic freedoms.
- ✓ Champion inclusive international dialogue on digital norms and governance; and systematically include digital development in the policy coherence for development agenda.

Source: Authors' illustration.

should support nationally led priorities for digital transformation, use the outcomes of country-driven analytical processes to align in-country programmes and funding, and help to elaborate context-specific regulatory environments.

Key enablers are connectivity, access to energy, and capacity among governments and citizens to access, use and manage digital tools (see Chapter 25). Some platforms – national ID, data and payment exchange systems, for instance – form the digital public infrastructure (DPI) that countries require to function in the digital world. These can be provided through proprietary solutions or digital public goods (DPGs). DPGs offer a high degree of interoperability and can underpin digital sovereignty, but they require local capacity for ongoing management and maintenance, and financing and technical support over time are a challenge (see Chapter 26). With appropriate data protection mechanisms in place, these foundations can enable a local digital ecosystem to flourish. New innovations that could emerge include business models not based on advertising; platforms that enhance workers' collective rights rather than data-capture used by many gig work applications; and digitally enabled business models to overcome constraints such as lack of energy access.

Connectivity continues to be a challenge and requires focus in developing countries. Almost 3 billion people have never used the Internet, and 96% of those live in developing countries (see Chapter 22). In 2020, all but 6% of the world's population had mobile broadband coverage. Yet, as much as 19% of the population in sub-Saharan Africa, still does not have access to mobile broadband (see Chapter 4). Last mile connectivity is achievable when public and private actors work together, for example through authorising or discounting licenses for rural areas, allocating spectrum frequencies for social use, pursuing public-private partnerships to extend physical infrastructure, and tax incentives that reduce

risk for new service providers to enter the market. Where wireless, wired and emerging solutions exist, they must be assessed against affordability, usage, financial viability, structure and sustainability criteria to address these barriers to digital inclusion (see Chapter 22).

In addition to closing the connectivity gap, closing the usage gap is now a pressing issue. In 2020, 43% of people covered by mobile broadband did not use it (see Chapter 4). While the cost of data has come down in many areas, LDCs are the most expensive places in the world to use the Internet; affordability of data and devices remains a significant barrier. Within countries, rural communities are triply disadvantaged. Not only are they more likely to have poor connectivity, but higher poverty levels also mean that people are less able to pay for data services and digital devices. They also are less likely to have access to enablers such as energy supply. Lack of relevant content and concerns about safety and security add additional barriers.

Investing in more complete data and evidence on how digitalisation influences development would inform strategic targeting of where greatest impact can be achieved. There are data gaps, for example, on connectivity indicators such as network coverage and infrastructure assets to locate underserved populations. Data that looks below the level of country averages and focuses on disadvantaged groups (e.g. rural-urban and sex-disaggregated data), and subnational tracking of affordability would also be helpful in the effort to provide last-mile connectivity and overcome usage barriers (see Chapter 22).

Regional organisations can add value to national efforts and help their members navigate digital transformation. Regional harmonisation can facilitate e-commerce and cross-border data sharing and help increase economic returns from digitalisation. When combined with a regional trade agreement, a 10% increase in digital connectivity boosts

growth in goods exports by 2.3% (see Chapter 15). The LAC and Africa regions each focus on creating digital single markets, which could make it more attractive to provide digital infrastructure, products, services and investments to countries that, as individual markets, would otherwise be considered too small or risky. However, regional standards must be in harmonisation with global standards to avoid entrenching barriers to data sharing or trade at the regional level.

A checklist of critical actions for international co-operation to support national and regional building blocks for sustainable digital ecosystems can be found in Figure 3.

***Make digital financing fit for purpose with greater scale, innovation and flexibility***

Countries are now challenged to undertake digital and green transitions, both of which

depend on large, capital-intensive projects. For example, access to energy for all is both an SDG and a fundamental enabler of digital transformation. There is a global funding gap of USD 350 billion to “Ensure access to affordable, reliable, sustainable and modern energy for all” (SDG 7.1), with almost two-thirds of that investment required in sub-Saharan Africa (see Chapter 19). At the same time, it was calculated in 2020 that USD 428 billion is needed to connect the unconnected to the Internet by 2030 (ITU, 2020<sub>[19]</sub>), with USD 5 billion of this amount needed to connect schools (see Chapter 24). The cost to roll out 5G networks will be much higher (see Chapter 41). Total financing needed to implement DPI systems across low- and middle-income countries is estimated to be in the range of USD 30 billion (see Chapter 25).

The estimates in this report indicate that official development finance for digital

Figure 3. Support national and regional building blocks for sustainable digital ecosystems

**Checklist to support digital building blocks**

- ✓ Partner and align with national and regional bodies, paying attention to key enablers.
- ✓ Support the development and diffusion of digital public goods at the global, regional and national levels, including through more predictable and long-term financing.
- ✓ Focus technical assistance on country capabilities to design sustainable digital public infrastructure and policy-making and regulatory capacities, and partner with the private sector to overcome connectivity and usage barriers.
- ✓ Help close the usage gap with solutions that reduce the cost of data and digital devices, increase locally relevant content, and digital literacy and safety online.
- ✓ Incentivise the design and use of socially responsible, alternative digital technologies that help achieve development goals.
- ✓ Improve the evidence base and data on digital divides, and the relationship between digital transformation and the achievement of development goals.

Source: Authors' illustration.

activities more than tripled between 2015 and 2019, with providers investing a total of USD 18.6 billion and mobilising another USD 4.2 billion in private finance over the period. Yet even with this trend, resources will need to be scaled up to help countries meet mounting financing needs at a time when fiscal space is shrinking and debt burdens are growing in low- and middle-income countries, making mobilisation of domestic resources difficult (World Bank, 2021<sup>[20]</sup>).

The private sector is expected to bear most of the cost for energy access and increased connectivity, even if private investors see developing countries as risky (see Chapters 2, 41 and 42). There is also scope for greater transparency of private investment for digital in developing countries, which is not tracked and is thus difficult to estimate.

Domestic public finance, international grants and concessional lending also play a role in managing for market failures. They can catalyse commercial investment with early-stage investments for social impact. Innovative financing and procurement approaches can also de-risk markets to incentivise new entrants to supply digital technology products and accelerate digital transformation (see Chapter 25). Other examples include better management of operator fees to raise and spend resources more efficiently, and regulations that bring down costs, including through network sharing (see Chapter 22). In Algeria, Ghana, Kenya and Nigeria, for example, the public sector partnered with mobile telecom companies and telecommunications equipment providers to bring mobile broadband to rural populations (see Chapter 1).

Joint funding mechanisms with a mix of actors have potential to maximise the value of limited budgets with actors playing to their strengths. In 2021, the World Bank Digital Development Partnership's lending leverage reached USD 9 billion, or USD 950 loaned for every USD 1 of donor funding (see Chapter 41). The EU's Digital for Development

hub seeks, among other things, to increase co-ordination and effectiveness, leveraging different financing and knowledge capacities (see Chapter 33).

An agreed method to measure finance for digital transformation will need to take into account different approaches to budgeting and allocation of digital activities across sectors. As a community, development co-operation providers will also need to work together to meet the growing demand from partner countries, and efficiently allocate resources where they are needed most, leveraging each other's strengths and areas of expertise.

A checklist of critical actions for development co-operation to make digital finance fit for purpose with greater scale, innovation and flexibility can be found in Figure 4.

The contributions to this report provide further analysis and evidence underpinning and unpacking each of the actions for development co-operation detailed in the above checklists.

## There is a narrow window to shape a just digital transformation

Since the onset of the COVID-19 crisis, reliance on digital tools gave the world a crash course in the importance of digital capacity for individuals and countries. The near 40% of the world not connected is missing out on these benefits. Until coverage and usage gaps are closed, the many digital divides that emerged will persist. As the fourth industrial revolution continues and technology advances, developing countries may be relegated to marginal roles at the extremes of the digital value chain, such as providing raw materials or acting as dumping grounds for digital waste.

Many contributions in this report emphasise the borderless nature of risks and threats that digital transformation brings. Containing them requires global co-operation to create new norms and standards that put

Figure 4. Make digital financing fit for purpose with greater scale, innovation and flexibility

## Checklist for digital financing

- ✓ Support domestic resource mobilisation and policies to **lower costs of access and use**.
- ✓ Increase risk appetite, budgeting flexibility and predictability for **innovative and mixed financing instruments** that are fit for co-created and co-owned digital public goods.
- ✓ Broaden and diversify partners to **increase scale and back innovation**, including civil technology companies and local start-ups.
- ✓ **Catalyse and complement private investment** through public-private partnerships, blended finance, guarantees and complementary use of grants for capacity building.
- ✓ Support and align with **harmonised procurement processes** and standards that are fit for the acquisition of digital technology.
- ✓ Increase scale, efficiency and impact by **pooling finance and expertise among providers** to reduce fragmentation.
- ✓ **Increase transparency** of finance-for-digital with an agreed statistical method.

Source: Authors' illustration.

minimum safeguards in place and create a level playing field for all. The process of standard-setting is picking up pace, but the digital realities of developing countries and their capabilities to manage the impact of digital transformation are rarely considered. Their voices must be amplified to ensure that digital transformation delivers for those that have the most to gain.

The benefits that digital technology has brought to economies and societies are immense. Working towards an inclusive digital future could therefore be the multiplier needed to close persistent development divides, and create a better future for all.

## NOTES

1. Frequency spectrum allocation refers to the process of determining the use of a given block of frequencies. Frequency spectrum assignment refers to the determination of who is allowed to utilise that block.
2. The Case Study from Germany presents the digital-by-default concept as systematically looking for opportunities for digital technologies in all projects and with all partners.
3. See for example DIAL (see Chapter 25), UNCTAD eTrade for all initiative (see Chapter 3), EU D4D Hub (see Chapter 33) and World Bank Digital Development Partnership (see Chapter 41).

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