UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

Technical and statistical report

International Investment in the Digital Economy

A Toolkit for Policymakers

United Nations

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A Toolkit for Policymakers

United Nations
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Abbreviations

AfCTA	African Continental Free Trade Agreement
AI	artificial intelligence
APEXBrazil	Brazilian Trade and Investment Promotion Agency
ASEAN	Association of Southeast Asian Nations
BCR	binding corporate rule
BEPS	base erosion and profit shifting
BPO	business process outsourcing
CIT	corporate income tax
CINDE	Costa Rican Investment Promotion Agency
CNIPA	China National Intellectual Property Administration
DMA	Digital Markets Act
DSA	digital service tax
EU	European Union
FDI	foreign direct investment
G5 Benchmark	Benchmark for Fifth Generation Digital Collaborative Regulation
GATS	General Agreement on Trade in Services
GDP	gross domestic product
GDPR	General Data Protection Regulation
IIA	international investment agreement
IBFD	International Bureau of Fiscal Documentation
ICT	information and communication technology
IOM	International Organization for Migration
IoT	Internet of things
IP	intellectual property
IPA	investment promotion agency
IPFSD	Investment Policy Framework for Sustainable Development
ISDS	investor-State dispute settlement
IT	information technology
LDC	least developed country
MCC	model contractual clause
MNE	multinational enterprise
OECD	Organisation for Economic Co-operation and Development
PPP	public-private partnership
ProColombia	Promotion of Trade, Investment, and Tourism of Colombia
Procomer	Costa Rican Foreign Trade Promotion Agency
ProInversion	Peru Private Investment Promotion Agency
R&D	research and development
SCC	standard contractual clause
SDGs	Sustainable Development Goals
SEP	significant economic presence
SEZ	special economic zone
SME	small and medium-sized enterprise
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TVET	technical and vocational education and training
UNCTAD	United Nations Conference on Trade and Development
VAT	value-added tax
VUCEM	Ventanilla Única de Comercio Exterior Mexicana
WIPO	World Intellectual Property Organization
WIR25	World Investment Report 2025
WTO	World Trade Organization

Note

Under its overall mandate on trade and development, the United Nations Conference on Trade and Development (UNCTAD) serves as the focal point within the United Nations Secretariat for all matters related to foreign direct investment. Its work is carried out through intergovernmental deliberations, research and analysis, technical assistance activities, seminars, workshops and conferences.

The following symbols have been used in the tables:

- **Two dots (..)** indicate that data are not available or not separately reported. Rows in tables have been omitted in those cases where no data are available for any of the elements in the row.
- **A hyphen (-)** indicates that the item is equal to zero or its value is negligible.
- **A blank in a table** indicates that the item is not applicable.
- **A slash (/) between dates** representing years – for example 2023/24 indicates a financial year.
- **Use of an en dash (–) between dates** representing years – for example 2023–2024 signifies the full period involved, including the beginning and end years.
- **Reference to "dollars" ($)** means United States dollars, unless otherwise indicated.
- **Annual rates of growth or change**, unless otherwise stated, refer to annual compound rates.
- **Details and percentages** in tables do not necessarily add to totals because of rounding.

Introduction

The digital economy has become a major driving force for global growth. It is expected to represent more than two-thirds of new value creation in the next decade, with an estimated annual growth rate between 10 to 12 per cent, significantly higher than that of global gross domestic product (GDP) (UNCTAD, 2025a). In developing countries, it is increasingly recognized as a key driver of productivity, innovation and sustainable development (UNCTAD, 2025b).

The United Nations Conference on Trade and Development (UNCTAD)'s World Investment Report 2025 (WIR25) focused on international investment in the digital economy. It analyses foreign direct investment (FDI) trends, drivers and policy determinants, concentrating primarily on the narrow scope digital economy, as defined in figure 1 (UNCTAD, 2025a). The report recommends strategic policy measures for governments, partners and stakeholders to attract and leverage FDI in the digital economy, in line with the Sustainable Development Goals (SDGs) and commitments under the Global Digital Compact and the Pact for the Future adopted in 2024.

FDI plays a critical role in the growth of the digital economy but remains unevenly distributed. Large multinational enterprises (MNEs) dominate cross-border investment in digital sectors, with the top 20 players mostly from China and the United States. Cross-border mergers and acquisitions in the technology sector have averaged nearly $1 trillion annually over the past decade, but less than 15 per cent have involved companies from developing countries. Greenfield investment is also concentrated. Between 2020 and 2024, developing countries attracted a total of $531 billion in announced greenfield projects in the digital economy, nearly 80 per cent of which were directed to 10 countries.[1] The United States is the leading source of greenfield investment (36 per cent), though South-South investment is also increasing, with China, Taiwan Province of China and Singapore representing 27 per cent of the total.

Between 2020 and 2024, developing countries attracted a total of $531 billion in announced greenfield projects in the digital economy, nearly 80 per cent of which were directed to 10 countries

This uneven distribution extends to the sectoral level, reinforcing the digital divide. Greenfield investment in digital services in developing countries rose from $6 billion in 2020 to $37 billion in 2024. However, this expansion is unevenly distributed: only 18 fintech projects were announced in Africa in 2024 against 206 in developing Asia. Greenfield investment in digital equipment manufacturing is concentrated in Asia, while Africa and Latin America play a marginal role. The infrastructure investment gap that fuels the digital divide is estimated at $1.6 trillion (ITU, 2025). Yet, greenfield investment in information and communication technology (ICT) reached $15 billion in 2024, far below the $61 billion needed annually, leaving regions like sub-Saharan Africa severely underserved. For instance, least developed countries (LDCs) account for 3 per cent of the total investment in data centres.

Policies for the digital economy matter. Investors prioritize transparent, stable and predictable policy environments, access to digital skills and talent, as well as supportive regulations for the development of the sector (Stephenson, 2020). Experience from a diverse group of developing countries confirms that the quality of digital policy frameworks plays a pivotal role in attracting investment. In other words, countries with mature digital economy frameworks tend to attract more FDI in the digital sectors (figure 2). While investment in the digital economy

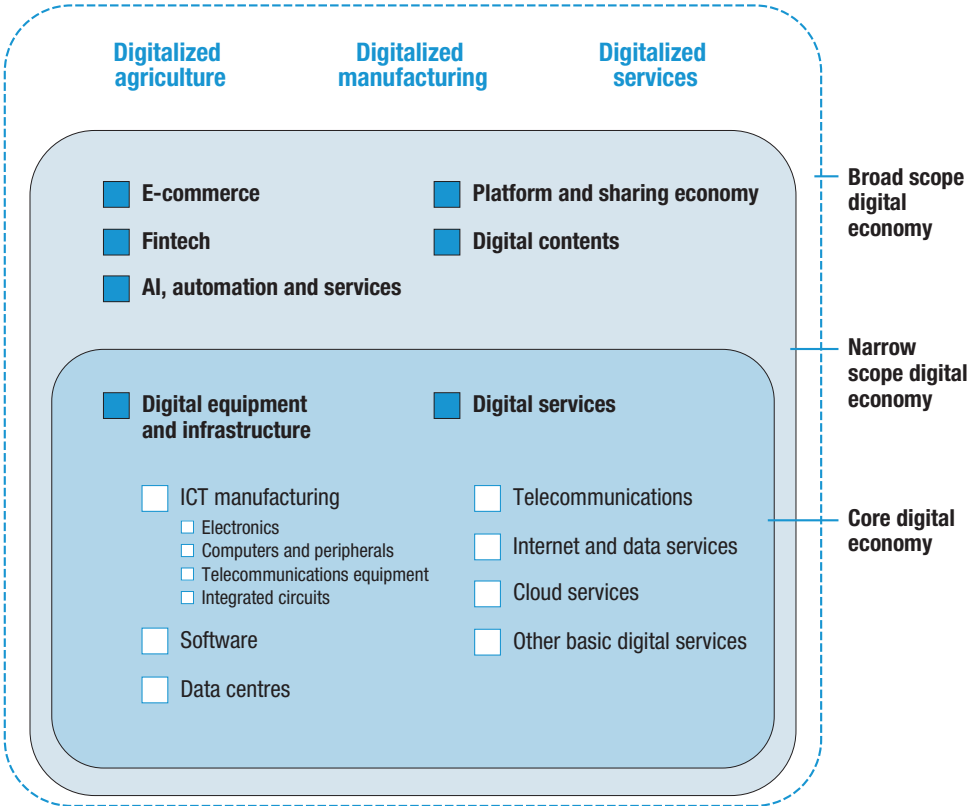
[1] India, Malaysia, Indonesia, Singapore, Viet Nam, Mexico, China, Brazil, Saudi Arabia and Thailand, in that order.

Policies for the digital economy matter

offers opportunities for skills development, innovation and revenue generation, it also raises challenges for governments, for example the environmental impact from data centres, risks of market concentration by dominant digital firms and concerns over control of strategic digital assets. Realizing the benefits from FDI in the digital economy therefore requires targeted and forward-looking policy frameworks that balance investor needs with broader development goals.

This toolkit reflects policy lessons from developed and developing countries. It builds on the mapping of 101 national digital strategies and on the analysis of investment policy trends drawn from the UNCTAD Investment Policy Monitor database and the Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade (UNCTAD, 2025a and 2025b). It also draws on the experience of 15 developing countries with mature regulatory frameworks for telecommunications and digital markets, and significant FDI presence in the digital economy.[2] These countries are Armenia, Brazil, Colombia, Costa Rica, Kenya, Mexico, Nigeria, Rwanda, Pakistan, Peru, Saudi Arabia, Singapore, South Africa, Thailand and Türkiye. They are referred to in this document as the "top 15 countries".

Figure 1.
Mapping the digital economy for investment analysis



Source: UNCTAD, based on various sources.

Abbreviations: AI, artificial intelligence; ICT, information and communication technology.

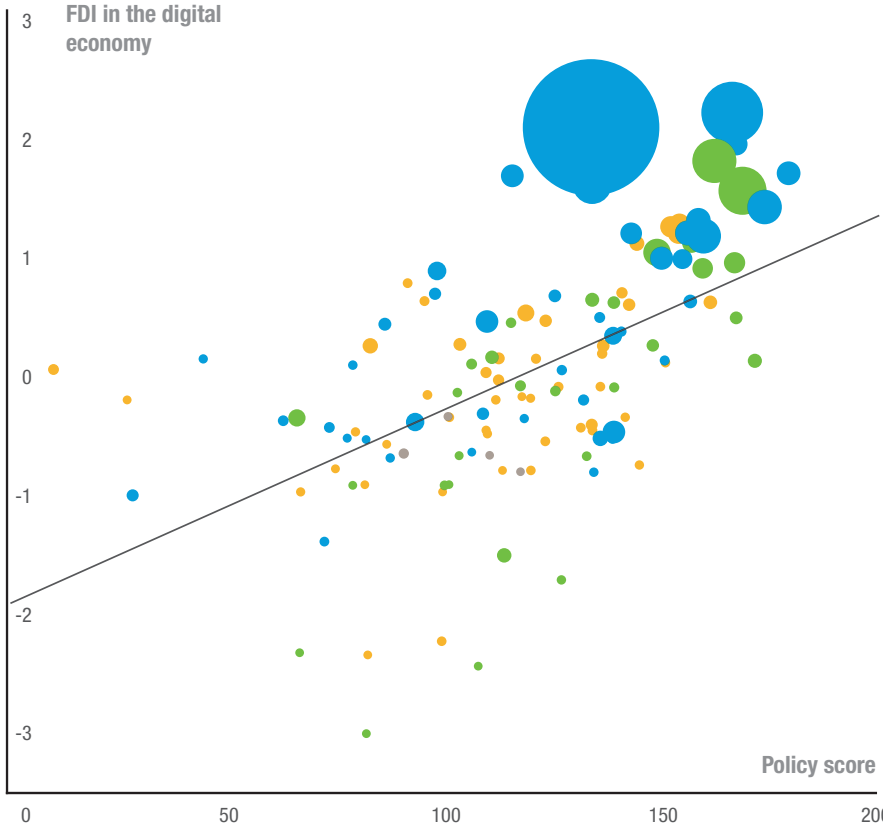
[2] High maturity of the regulatory framework and digital markets means, respectively, that the country is classified as Generation 4 in the International Telecommunication Union's (ITU) ICT Regulatory Tracker, i.e. a score of 85 and above over 100 and Advanced or Leading in ITU's Benchmark for Fifth Generation Digital Collaborative Regulation (G5 Benchmark), i.e. a score of 60 and above over 100 See: ITU ITC Regulatory Tracker 2022, available at: https://app.gen5.digital/tracker/metrics. Significant FDI presence is measured as cumulative announced FDI in digital sectors representing more than 15 per cent of the total cumulative announced FDI, over the period 2015 to 2024.

The toolkit aims to provide policymakers with concrete guidance on policies for international investment in the digital economy. It expands on the analysis presented in WIR25, which examined strategic policy approaches. This publication adds further analysis by distilling policy lessons and presenting practical, action-oriented guidance detailing the WIR25 recommendations.[3] By highlighting good practices in policies to promote investment in the digital economy, this toolkit also directly contributes to the Digital Infrastructure Investment Catalyzer, launched by the ITU and UNCTAD at the Fourth International Conference on Financing for Development and endorsed by the Sevilla Platform for Action.[4] The policy guidance is summarized in the annex.

Figure 2.

Policies for the digital economy matter

Relationship between digital FDI and policy score
(Developing countries by region, size of circle is proportional to nominal GDP)



Source: UNCTAD.

Note: Digital FDI is the natural logarithm of total announced cross-border investment in the digital economy accumulated between 2015 and 2024. Policy score is the combined score from the latest ICT Regulatory Tracker and G5 Benchmark from the International Telecommunication Union (ITU). The data are based on 122 developing countries. The relationship between the policy score and digital FDI attraction, though smaller, remains positive when considering digital FDI projects as a share of total announced FDI projects or digital FDI over GDP.

[3] The toolkit is also aligned with the Global Digital Compact and the Guidelines for formulating and strengthening FDI attraction policies in the digital sphere (ECLAC, 2025).

[4] The catalyzer will serve as a platform for information sharing and collaboration bringing together the United Nations agencies, multilateral development banks, development finance institutions, private sector and other key digital infrastructure investment stakeholders. It will focus on three pillars 1) data, tools and templates, 2) capacity building on financing and 3) investment and funding opportunities.

I. Shaping the foundations: data governance, intellectual property and competition

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A. National, regional and sectoral digital strategies

Digital strategies help shape the enabling environment for the digital economy and attract investment. At the regional level, they can promote policy harmonization, interoperability and joint infrastructure initiatives that enhance investment attractiveness. At the national level, they provide a roadmap for digital transformation, signalling commitment and offering transparency and predictability, both crucial for investment in the digital economy. When all relevant institutions are involved in design and implementation, they also enable a coordinated approach. At the sectoral level, targeted strategies for emerging technologies and industries, such as artificial intelligence (AI), data centres or semiconductors, help clarify priorities, regulatory requirements and sustainability standards, thereby supporting investment.

Country experiences

All regional strategies promote interconnectivity and regional integration, but they differ in investment focus and national uptake. The African Union's Digital Transformation Strategy prioritizes blended finance, public-private partnerships (PPPs) and infrastructure investment. In Asia, the Central Asia Regional Economic Cooperation and the Association of Southeast Asian Nations (ASEAN) strategies promote investment through regulatory alignment and interoperability. In Latin America and the Caribbean, eLAC2026 addresses investment mainly through enabling conditions. The European Union (EU) combines strong investment provisions with binding requirements, ensuring full alignment at the national level. In developing countries, uptake at the national level remains uneven, limiting the capacity of regional strategies to generate consistent investment signals across countries. While 70 per cent of countries in Latin America and the Caribbean reference them in their national strategies, only half of African countries do so (UNCTAD, 2025b).

National digital strategies are increasingly prevalent and sophisticated, yet their investment dimension remains limited. Several developing countries that have attracted international investment in the digital economy were early adopters of national digital strategies, including Kenya (2005), Peru (2006), Singapore (2006), Armenia (2008) and Colombia (2010). By 2024, 86 per cent of developing countries and 80 per cent of LDCs had adopted such strategies, up from less than half a decade earlier (UNCTAD, 2025a). Recent strategies are more comprehensive, addressing enabling conditions, such as regulatory frameworks and infrastructure. However, explicit investment targets and promotion measures are uncommon: fewer than half mention FDI, and only 20 per cent refer to investment promotion agencies (IPAs) (section III.C). Furthermore, many strategies lack alignment with broader development, investment, industrial and environmental policies.

The adoption of sector- and technology-specific strategies in developing countries is limited. Strategies for AI, data centres and semiconductors can play a catalytic role in investment attraction by clarifying national priorities, providing regulatory certainty and signalling long term commitment to sector development. For example, AI strategies in Brazil, China, Kenya, Rwanda, Singapore and South Africa are being used to guide talent development and responsible governance, and countries such as Chile, China, Finland, Qatar and Singapore have developed frameworks to address the energy efficiency of data centres (UNCTAD, 2025b). Despite their potential

The adoption of sector- and technology-specific strategies in developing countries is limited

to mobilize investment, the adoption of sectoral strategies among developing countries is uneven. For instance, by 2023, just 17 per cent of African countries and 24 per cent in Latin America had an AI strategy, compared with three quarters of developed economies. Since then, uptake has accelerated with new strategies in countries such as Côte d'Ivoire (2025), Kenya (2025), Nigeria (2024) and Rwanda (2024), and several others in the pipeline.

Policy lessons

1. Long-term strategic vision and consistent implementation foster more conducive environments for international investment in the digital economy.
2. Digital strategies yield stronger results when integrated with national industrial, infrastructure, trade, education and environmental policies. Linking digital priorities to overall development objectives helps ensure coherence, avoid duplication and reinforce cross-sector synergies.
3. Involving IPAs, digital economy institutions and sectoral ministries in both strategy design and execution enhances coherence and facilitates alignment between regulatory reform, infrastructure development and skills planning. Clear mandates and inter-agency coordination mechanisms promote efficiency and reduce policy fragmentation.
4. Targeted frameworks for emerging sectors such as artificial intelligence, data centres or semiconductors provide clarity on national priorities and regulatory expectations. They also signal long-term commitment and help mobilize investment into high-growth and strategically significant industries.
5. Regional digital strategies can help harmonize regulations, enhance interoperability and foster shared infrastructure. Aligning national frameworks with regional initiatives creates economies of scale and clearer investment signals across borders.

Policy guidance

1. Define priority sectors for investment attraction in the digital economy that support progression along the digital value chain and contribute to broader strategic industrial development goals.
2. Provide key elements to inform investment planning, including the identification of infrastructure gaps and planned regulatory initiatives.
3. Integrate environmental and sustainability considerations in digital strategies.
4. Inform targeted investment promotion efforts by specifying the types of investments and investors that can advance structural transformation and digital upgrading.
5. Reinforce coordination mechanisms to ensure that the IPA, regulatory bodies and digital economy institutions operate with aligned mandates and share implementation responsibilities effectively.
6. Define targeted frameworks for high-growth digital sectors, ensuring clarity on national priorities, regulatory expectations, and investment opportunities.
7. Align national digital investment strategies with regional digital initiatives to leverage economies of scale, facilitate cross-border digital integration, and promote regulatory consistency across countries.

B. Data governance, intellectual property and competition

Data governance, competition and intellectual property are essential pillars of an attractive environment for investment in the digital economy. Data security regulations, copyright laws to protect intellectual property (IP) and data privacy regulations are paramount for investors in new digital activities (Stephenson, 2020). Competition policy also plays a key role in maintaining fair and dynamic markets, preventing monopolistic practices and dominance that can crowd out smaller firms. Together, these policies provide predictability and confidence for investors in the digital economy.

1. Data governance

Country experiences

Data protection and governance remain the leading regulatory priorities worldwide. Data access, protection, transfer and security account for nearly half of all data-related measures in developing countries and 58 per cent in developed ones. Most frameworks define individual data rights, specify the obligations of processors and controllers, and, in developing countries, emphasize establishing and strengthening national data protection authorities for enforcement and compliance (figure I.1).

Cybersecurity regulation is also expanding rapidly. These measures represent 28 per cent and 33 per cent of data-related policies adopted in developed and developing countries, respectively, in the last five years. Typical features include criminalization of unauthorized access, designation of enforcement agencies and mandatory compliance measures, such as security standards, periodic risk assessments and incident reporting.

Approaches vary according to national capacities and priorities. All countries emphasize risk management, data protection, infrastructure resilience and national security, but developed countries focus on long-term resilience, standardization and emerging threats such as AI security and post-quantum cryptography. Developing countries prioritize cybercrime prevention, critical infrastructure protection, cloud regulation and financial cybersecurity, often through dedicated or strengthened legal frameworks.

Approaches vary according to national capacities and priorities

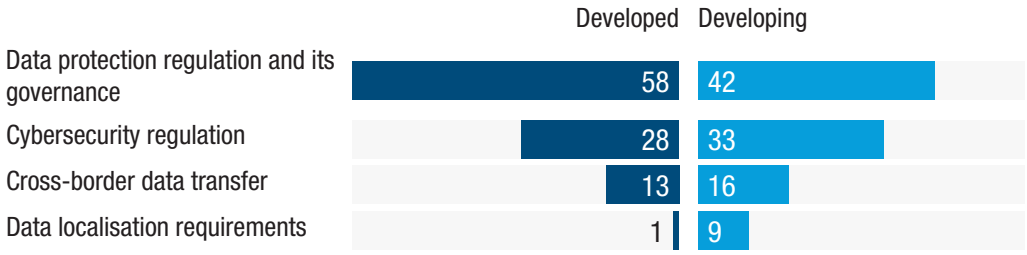
Adoption gaps persist in data protection and cybercrime legislation. According to UNCTAD's Cyber Global Tracker, nearly all developed countries and top 15 countries have adopted both frameworks, while only four out of five developing countries and about 60 per cent of LDCs have adopted data protection laws (UNCTAD, 2025a).[5] Cybercrime legislation is more widespread, covering 94 per cent of developing countries and 73 per cent of LDCs.

[5] UNCTAD's Cyber Global Tracker is available at: https://unctad.org/topic/ecommerce-and-digital-economy/ecommerce-law-reform/summary-adoption-e-commerce-legislation-worldwide.
A draft bill is being considered in Pakistan, which applies in the meantime the Prevention of Electronic Crimes Act (2016). In Colombia, the responsible authority is the Superintendence of Industry and Commerce.

Figure I.1.

Countries are active in the adoption of data governance policies

Data governance measures by type and by level of development, 2020–2024
(Percentage)



Source: UNCTAD, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

Data protection frameworks are well established among the top 15. Nearly all, except Pakistan, have data protection laws and enforcement authorities, with mandatory data breach notification, right to access, correction and, most of the time, erasure, and often data portability. Several countries require a data protection officer, and sanctions range from fines to imprisonment or, in Brazil and Colombia, suspension/closure of operations.

Cross-border data transfer regulations are widespread in both developed and developing countries. These measures define the conditions for transferring personal data abroad, often through adequacy decisions, recognition of foreign standards or standard contractual clauses (box I.1). All top 15 countries have introduced measures of this type. Approaches vary in stringency: Saudi Arabia and Türkiye apply strict controls, while Singapore adopts a more flexible regime.

Data localization requirements are increasing, particularly in developing countries. Over the past five years, several countries have introduced new or stringent data localization rules. While such measures can encourage domestic data storage and foster the development of local digital infrastructure, overly rigid requirements can potentially discourage investment where infrastructure remains limited (section III.A). Approaches vary depending on national circumstances (UNCTAD, 2021), with many countries opting for sector-specific rules or restrictions on cross-border transfers to address data security and privacy concerns. In practice, most localization measures focus on sensitive or strategic data, such as government, defence, financial, and ICT-related information. Examples among the top 15 countries include requirements applying to payment institutions in Mexico and Türkiye, telecommunications providers in Mexico, social media platforms in Pakistan, and government and financial data in Nigeria and Saudi Arabia.

Box I.1.
Cross-border data transfer and localization requirements

Cross-border data flows form a critical foundation of the digital economy, enabling international business operations, innovation and investment. Countries with restrictive or unclear data transfer policies risk discouraging capital inflows, stifling innovation and limiting long-term economic engagement. Both developed and developing countries employ a range of regulatory models to protect personal data, safeguard national interests and promote accountability in the global data economy. Many have adopted multi-layered regulatory frameworks that incorporate contractual safeguards, regulatory oversight, consent-based mechanisms, data localization requirements and international agreements. The following is an overview of general restrictions and mechanisms used globally:

Data localization requirement

Some countries impose data localization rules that require data to be stored or processed within national borders, especially when national security concerns exist. Egypt requires local hosting for classified government data. Viet Nam mandates storage of "core and important" data domestically. Thailand mandates domestic or ASEAN-based data centres for high-risk systems.

Approval or prior notification

Countries can mandate prior approval or notification before data can be transferred abroad, particularly when the recipient country lacks an adequate legal framework. For instance, Algeria requires either prior notification or authorization by the data protection authority before data processing or transfer. The Russian Federation requires notification for transfers to adequate countries (see below) and prior approval for others.

Adequacy decisions

A country or regional organization may determine that a foreign country ensures a level of personal data protection that is adequate or aligned with its own standards. In such cases, countries with data protection regimes offering an "essentially equivalent" level of protection may be granted adequacy status, thereby removing the requirement for additional safeguards. Under this mechanisms, the EU's General Data Protection Regulation (GDPR) allows for the free flow of personal data from the Union to non-EU countries.

Standard contractual clauses (SCCs) or model contractual clauses (MCCs)

SCCs and MCCs are legally binding clauses approved by a data protection authority that ensure data transferred to a third country is adequately protected. Usually, they impose legally binding obligations on both the data exporter and importer to ensure an adequate level of protection. For example, the European Commission published draft SCCs for cross-border data transfers to countries whose privacy protection standards are not considered adequate.

Binding corporate rules (BCRs)

BCRs are internal policies used by multinational companies for intra-group transfers. For instance, under the new Personal Data Protection Law No. 6698 of Türkiye binding BCRs are recognized as one of the legal mechanisms for international data transfers.

Other mechanisms include certification or sectoral codes of conduct approved by supervisory authorities. These tools allow organizations to demonstrate compliance with data protection standards and can be used as appropriate safeguards for transfers to countries without an adequacy decision, provided they are legally binding and enforceable commitments between the parties.

Source: UNCTAD.

Multilateral initiatives on data protection are limited and fragmented. The United Nations Global Digital Compact (2024), which sets out commitments on data privacy, security and cross-border flows, is non-legally binding. Other international frameworks, such as article 39 of the World Trade Organization (WTO)'s Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, protect commercially confidential information, but do not cover personal data. At the regional level, the Council of Europe's Convention 108, updated in 2018 as Convention 108+, is the only legally binding instrument on data protection. Its membership is, however, limited. The EU GDPR adequacy regime serves as a global reference, shaping conditions for cross-border data flows. Data protection provisions also appear in bilateral and regional trade and investment agreements, promoting alignment with international frameworks and encouraging domestic ones.

International investment agreements (IIAs) increasingly include binding provisions on free data flows and prohibit data localization. Early non-binding approaches have given way to stronger commitments over the past decade (figure I.2). In addition, free flow of data provisions are also included in financial and telecommunications services chapters. For financial services, treaties typically require States to allow data transfer and processing abroad. Regarding telecommunications services, provisions often reflect the World Trade Organization's (WTO) General Agreement on Trade in Services (GATS) Annex on Telecommunications, mandating access to public networks for moving information across borders.

Treaties also increasingly recognize governments' right to restrict data flows or require local storage for reasons such as privacy, data protection or national security. Although no uniform model exists, treaties at times extend coverage of General Agreement on Tariffs and Trade Article XX and GATS Article XIV-style exceptions to provisions on the free flow of data or refer to "legitimate policy objectives", with safeguards against arbitrary measures.[6]

[6] For the former approach see, for example, Indonesia–United Arab Emirates Comprehensive Economic Partnership Agreement (2022), Article 17.4(2). For the latter approach see, for example, the 2024 Protocol Amending the EU–Japan Economic Partnership Agreement (2018), Article 3(3) and (4).

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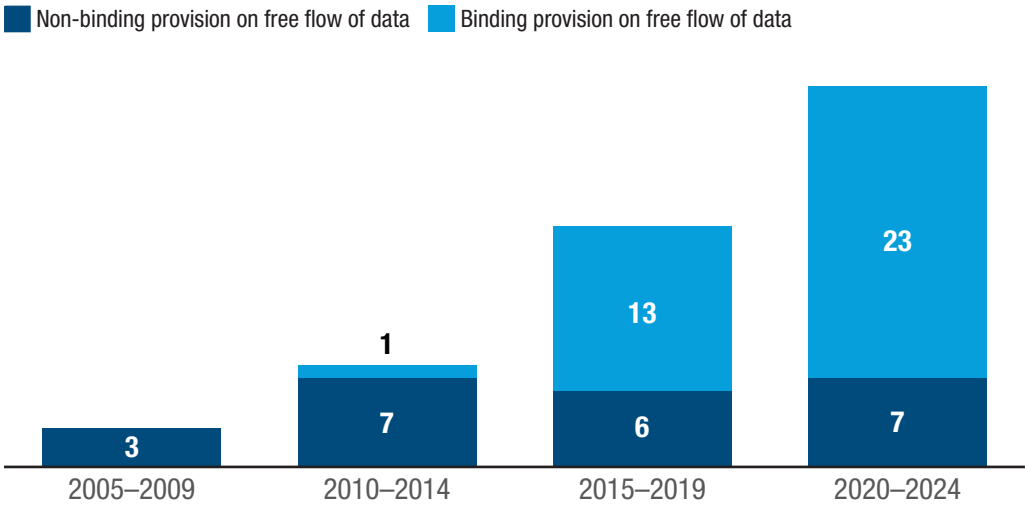
Figure I.2.

Provisions on the free flow of data are gaining importance

Frequency of provisions mandating the free flow of data
(Number)



Source: UNCTAD, based on the TAPED data set.

Note: Based on the analysis of treaties concluded between 2000 and 20024.

Cybersecurity frameworks are common among top 15 countries. Most, like Pakistan, adopted a dedicated cybercrime or cybersecurity law, while others such as Armenia and Mexico, integrate these elements in criminal codes and data protection legislations. All criminalize cyber offences; several also require incident reporting, and some mandate or encourage threat intelligence monitoring (e.g. Colombia, Peru, Pakistan). Many countries, including Rwanda and Thailand, organize monitoring at the national level and define critical infrastructure protection measures. A growing number adopts compliance standards such as codes of conduct and guidelines. At the institutional level, several countries have dedicated cybersecurity agencies or committees. Colombia and Costa Rica have assigned responsibilities to information technology (IT) ministries, in Pakistan law enforcement is in charge, and in Armenia tasks are shared among several institutions. All top 15 countries have national computer security incident response teams.

Multilateral cooperation on cybersecurity is more advanced. The Budapest Convention on Cybercrime, which entered into force in 2004, remains the most comprehensive treaty, covering a wide range of offences, including illegal access, data interference, and online fraud, with 78 parties as of January 2025, including eight of the top 15 countries. The recent United Nations Treaty against Cybercrime expands cooperation on evidence exchange and prosecution of digital crimes. Regional frameworks, including the African Union Convention on Cyber Security and Personal Data Protection (2014), the Arab Convention on Combating Information Technology Offences (2010), the Shanghai Cooperation Organization Agreement on International Information Security (2009) and the Commonwealth of Independent States Agreement on Cooperation in the Fight against Cybercrime (2001), further reinforce cybersecurity as a shared global responsibility.

Policy lessons

1. Comprehensive data protection laws and independent enforcement authorities are essential to boost investment and consumer confidence. These should include clear rules on data breach notification, data portability rights and effective sanctions to ensure compliance.
2. Flexible and phased approaches, including gradually expanding the scope of data protection rules, introducing compliance requirements in stages, and/or piloting regulations in specific sectors, allow countries to protect data while supporting investment in the digital economy, trade and technological progress.
3. Complementing cybercrime laws with regulations on incident reporting, critical infrastructure, and institutional coordination enhances national cybersecurity. Establishing dedicated entities helps clarify roles and responsibilities.
4. Regular legal updates ensure responsiveness to emerging technologies and evolving threats and cooperation with global initiatives supports knowledge exchange and capacity-building.
5. International coordination enables information sharing and consistent standards for data protection and cybersecurity across borders.
6. In IIAs, commitments on free data flows and limits on data localization have grown stronger. They also increasingly recognize governments' rights to regulate for privacy, data protection, and national security, reflecting efforts to balance openness with policy space.

Policy guidance

1. Establish comprehensive data protection frameworks that mandate data breach notification, include data portability rights, and define effective sanctions to promote transparency, user control, and compliance.
2. Create independent and well-resourced enforcement authorities responsible for overseeing data protection and cybersecurity, ensuring accountability and effective coordination across institutions.
3. Adopt phased and adaptable regulatory approaches, using interim measures where comprehensive laws are not yet in place, and ensuring frameworks remain flexible and aligned with technological change and national development priorities.
4. Ensure that national cybersecurity legislation covers incident reporting, threat intelligence monitoring, and critical infrastructure protection, supported by clear coordination mechanisms, compliance standards, and regular legal updates supported by capacity-building.
5. Promote international and regional cooperation to harmonize data protection and cybersecurity standards, facilitate secure cross-border data flows, and develop shared cybersecurity resources.
6. Carefully consider provisions in IIAs that address cross-border data flows, while explicitly preserving the ability to regulate in the public interest, including for privacy, data protection and national security.

2. Intellectual property

Country experiences

The global IP regime provides a common foundation, but gaps remain. The TRIPS Agreement establishes de facto minimum standards for WTO members, requiring national laws to protect computer programmes, integrated circuit designs, and proprietary data against unfair commercial use. In many jurisdictions, computer software, hardware and digital technologies may also be patented if they meet applicable criteria. The World Intellectual Property Organization (WIPO) Copyright Treaty and the WIPO Performances and Phonograms Treaty (known as the WIPO Internet Treaties) reaffirm that copyright protections and exceptions for authors extend to the digital environment. A gap remains, however, in their adoption. Almost all developed countries and most top 15 countries have ratified them, but only a little over half of developing countries and less than a third of LDCs have done so (figure I.3).[7]

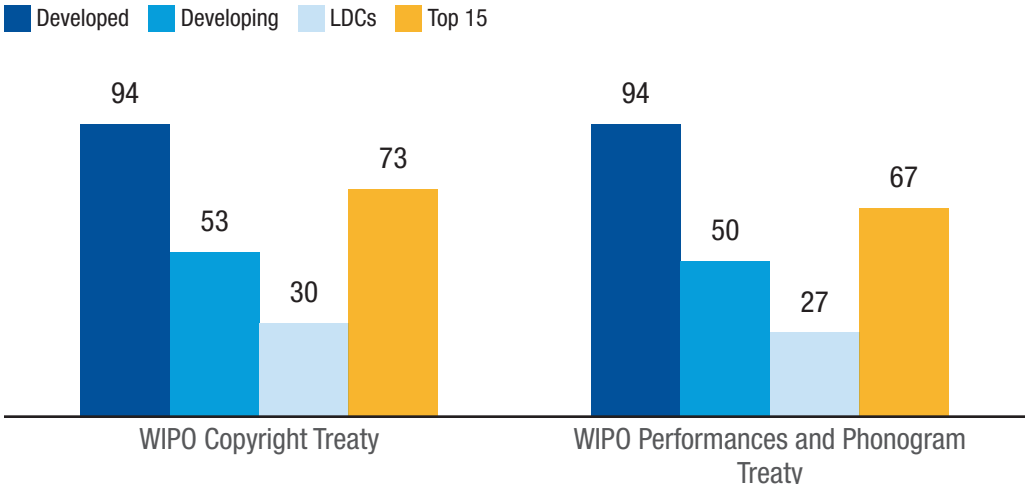
Rapid technological change is testing the limits of existing IP frameworks. Key challenges include protecting algorithms and data-mining tools, determining how protected data may be used to train AI, and clarifying whether AI-generated content qualifies for IP protection under copyright law. High-value digital patents are largely concentrated in developed economies, widening the technological gap. National frameworks must therefore promote local innovation, safeguard access to knowledge, and implement international commitments that support sustainable development (box I.2). For developing countries, aligning digital economy laws requires balancing innovation, industry protection, and compliance with international norms. Policymakers should monitor international developments to adapt domestic regulations accordingly.

Rapid technological change is testing the limits of existing IP frameworks

Figure I.3.

Gaps remain in the adoption of WIPO treaties

Ratification of WIPO Internet treaties, share of countries (Percentage)



Source: UNCTAD, based on data from WIPO.

[7] Some trade and investment agreements with developed countries set higher standards than TRIPS, such as extending copyright terms beyond 50 years or requiring accession to WIPO Internet treaties.

Box I.2.

Investment and innovation in the digital economy: the experience of China with intellectual property legislation

Supportive innovation and IP policies and strong national research and development (R&D) capacity allowed China to underpin the rapid development of digital technologies and contributed to the growth of its digital economy patents.

By the end of 2023, patents reached 1.95 million, or 39 per cent of all patents granted (National Bureau of Statistics, China). The country also has the largest number of patent applications globally in both AI (Zheng, 2020) and blockchain-related technologies (Statista Research Department, 2022). Most filings with the China National Intellectual Property Administration (CNIPA) came from domestic applicants (1,6 million). According to WIPO, China also hosts the largest number of innovation clusters worldwide, including the top-ranked cluster by patents, scientific publications and venture capital activity.

Several studies suggest that recent amendments to China's Patent Law that came into effect in 2021 have facilitated the commercialization of research in digital technologies (Zhou, et al, 2023 and Liu, et al, 2025). Significant developments include, inter alia, increased penalties for infringements and the extension of the statute of limitations on patent litigation, both of which are designed to enable easier enforcement of patent rights and signal a heightened commitment to enforcement of IP rights. Implementing regulations in 2023 introduced an open licensing regime to encourage greater access to patented technologies, including in the digital realm. In addition, China promulgated guidelines clarifying the scope of patent applications for AI technologies and big data algorithms in 2024.

The development of digital technologies is supported by reforms in other IP domains. A 2021 amendment to China's Copyright Act broadened the scope of copyrightable material to include digital works including, for example, webcasts, on-line games and game graphics, and expanded certain neighbouring rights to include Internet livestreaming (Yu, 2021). Several pilot projects allowed startups to use their IP as sole collateral for loans (CNIPA, 2019).

The growth in the number of patents has also necessitated a dedicated dispute resolution system to address IP issues. The Chinese Government has 124 State-level IP protection centres and 2,230 mediation organizations for IP disputes, which concluded nearly 140,000 mediation cases in 2024.[8]

[8] Work report by Shen Changyu, Director General of CNIPA, at the National Intellectual Property Administration Directors' Conference in 2025 (in Chinese).

Source: UNCTAD, based on various sources.

Countries adopt different approaches to update IP legislation to reflect the realities of the digital age. Among the top 15 countries, several have reformed their laws: Kenya modernized IP definitions, Nigeria introduced digital distribution rights for copyrighted work, Brazil extended IP rights to electronic games. Armenia extended patentability to software, to protect the innovation and concept per se. In AI development, Singapore permits copying lawfully accessed works for computational data analysis, unless the source is infringing. However, copying is still allowed if the user did not know and, in the case of flagrantly infringing sites, could not reasonably have known that the source was infringing, or where using an infringing copy is necessary for a prescribed purpose and used only for that purpose. Saudi Arabia is considering

draft legislation protecting creations where humans contribute to AI-produced works, while Singaporean jurisprudence has followed a similar approach.

Digital platforms are increasingly subject to IP-related regulation. Singapore requires fair remuneration for online use of creative content, and Kenya, Mexico, Nigeria and Türkiye mandate takedown procedures for infringing material. Legislations can also provide "safe harbour" provisions that limit platform liability when they act passively or comply with due diligence obligations (e.g. Kenya, Mexico, Nigeria).

Policy lessons

1. Updating IP legislation is key to clarity, innovation and investor confidence. This can include adapting copyright and patent frameworks, addressing AI-related challenges such as training data use and ownership of AI-generated content, and updating legal definitions to reflect new digital products and distribution models.
2. Digital platforms require tailored rules for fair compensation and liability. Defining responsibilities, establishing safe harbours and implementing efficient takedown systems promote a level playing field and protect creators.
3. Strong enforcement and international cooperation enhance credibility. Mechanisms such as WIPO Alert and domain-name dispute systems can strengthen enforcement and cross-border coordination.[9]

Policy guidance

1. Adapt IP laws to cover digital innovations, including software, AI-generated content and other emerging technologies, and update legal definitions and frameworks to reflect new digital content types and distribution models.
2. Regulate digital platforms through clear takedown procedures, liability rules and safe harbour protections. Promote revenue-sharing and fair remuneration models for digital content creators.
3. Leverage digital tools, such as mobile apps and AI-based enforcement methods, to streamline IP systems and improve accessibility, linking IP modernization with broader innovation and industrial strategies.
4. Foster international cooperation to combat online IP infringement and strengthen cross-border enforcement through existing mechanisms and global initiatives.

3. Competition

Country experiences

Both developed and developing countries have tightened competition rules for digital sectors. Between 2020 and 2024, over one-third of new competition-related digital policy measures targeted digital services, e-commerce and platform markets. More than half of these measures in developed economies, and about 40 per cent in developing ones, focused on preventing data-related abuses by large platforms (figure I.4). These typically targeted exclusionary practices, algorithmic manipulations, self-preferencing and other forms of anti-competitive behaviour by large online platforms. Several were informed by regional initiatives, notably the EU's unified framework to regulate large digital platforms and prevent AI-driven market distortions (box I.3).[10]

[9] See: WIPO Alert. Available at: https://www.wipo.int/en/web/wipo-alert. and WIPO Uniform Domain Name Dispute Resolution Policy, 1999. Available at: https://www.wipo.int/amc/en/domains/guide/ and WIPO Uniform Domain Name Dispute Resolution Policy, 1999. Available at: https://www.wipo.int/amc/en/domains/guide/.

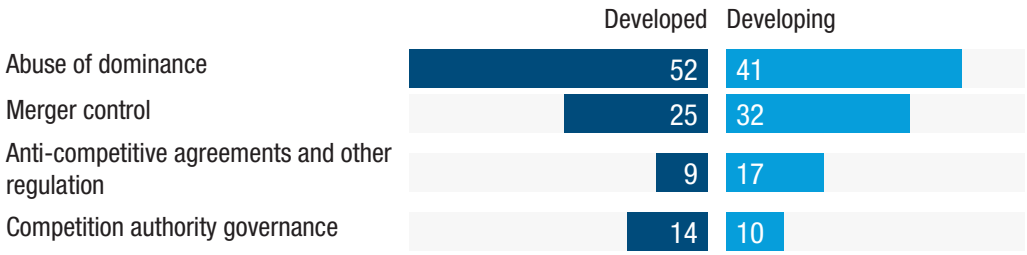
[10] These include competition-related concerns related to the deployment of AI tools by digital platforms with access to extensive user data.

Reinforcing oversight of mergers in digital and technology-driven markets has been a major policy focus. Key initiatives included revising merger notification thresholds, preventing "killer" acquisitions, and strengthening enforcement and transparency. Some developed countries have broadened merger review criteria to include network effects, privacy, labour conditions and environmental impact. While certain countries introduced specific platform regulations, others adopted "soft law" approaches or adapting traditional competition, privacy, or consumer protection frameworks. Many developed and developing countries have also expanded the powers of national regulators and competition authorities through new investigative tools, higher fines and improved assessment of anti-competitive agreements. Finally, some developing countries, e.g. China and South Africa, introduced measures to help small and medium-sized enterprise (SMEs) integrate with e-commerce platforms and participate more effectively in digital markets.

Figure I.4.

Competition measures focus on abuse of dominance in all countries

Digital policy measures on competition, by type and level of development, 2020–2024 (Percentage)



Source: UNCTAD, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

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Box I.3.
Digital market frameworks

Acknowledging the shortcomings of traditional competition laws, which tend to be reactive and focused on individual cases, a more targeted regulatory approach has been adopted in some regions to regulate large tech firms. A notable example includes the EU's Digital Markets Act (2022) designed to address competition challenges in digital markets.

The Digital Markets Act (DMA) regulates large online platforms that serve as key intermediaries between businesses and consumers, including search engines, web browsers, operating systems, and online advertising services. A platform qualifies as a gatekeeper if it has a strong economic presence, at least 45 million monthly users in the EU or 10,000 business users, and a dominant market position for three years. The DMA ensures fair competition by requiring gatekeepers to allow third-party interoperability, provide business users with data access, and ensure transparency in digital advertising, while prohibiting self-preferencing, restricting external links and unauthorized user tracking.

To enforce compliance, the European Commission conducts market investigations, updates obligations, and imposes penalties for violations. Non-compliance can result in fines of up to 10 per cent of global turnover, increasing to 20 per cent for repeat offenses, along with daily penalties for continued breaches. In severe cases, structural remedies, including business divestitures, may be imposed to restore market competition.

Other countries have also adopted similar provisions, for instance the United Kingdom in its Digital Markets, Competition and Consumers Act (2024).

Source: UNCTAD.

Merger control remains a key focus among the top 15 countries. Armenia and Peru have special approval requirements for telecommunications, while Costa Rica and Türkiye mandate merger notifications regardless of thresholds. Saudi Arabia applies a five per cent market share threshold, and Mexico issued operational guidelines. Singapore published guidelines recognizing the role of data and IP rights, and South Africa strengthened information requirements for merger reviews. Broader initiatives are under consideration in Brazil, which plans to designate major digital platforms as systemically relevant, and Rwanda, which is developing differentiated merger thresholds. Competition provisions also address abuse of dominance and anti-competitive conduct. These include telecom-specific rules in Costa Rica, Peru, Rwanda, and Saudi Arabia, e-commerce practices' restrictions in South Africa and Türkiye, and guidance on self-preferencing in Singapore and unfair practices in food delivery in Thailand. Ongoing reforms include refining dominance criteria in telecommunications (Saudi Arabia) and introducing the concept of a superior bargaining position (Kenya).

Regulations on net neutrality, data-sharing, and interoperability remain limited and sector-specific. Net neutrality, i.e. the principle that all Internet service providers must treat Internet traffic equally, is provided in Brazil, Mexico, Peru and Singapore, while Costa Rica stresses technological neutrality, i.e. policies not favouring a technology over another. Data-sharing rules mainly apply to fintech, telecommunications (Mexico) and banking (Nigeria and Türkiye). Interoperability requirements are more common in banking, covering mobile money (Brazil and Kenya),

digital payments (Brazil, Mexico, Nigeria and Peru), QR payments (Singapore), and payment systems (South Africa), as well as health sectors, including Brazil, Colombia, Costa Rica, Kenya, Saudi Arabia, Singapore and Thailand. Brazil's data protection law also empowers its authority to set interoperability standards. Policy development is ongoing: Brazil is considering ex ante review, Saudi Arabia is consulting on digital platform rules, and several competition and ICT regulatory authorities reference these issues in strategic plans and policy reports.

Enforcement gaps remain. While almost all developed and all top 15 countries have a competition authority, only two-thirds of developing countries and a little over a third of LDCs have one (figure I.5). Proportions are higher for ICT regulatory authorities. On collaboration between the ICT policy body or ICT regulatory authority and independent competition authority, there is a contrast between policy scores of developed and top 15 countries, and that of developing countries and LDCs. Specifically in the top 15 countries, the competition authority has a general mandate, including the digital economy sectors, while in a limited number of them, including Costa Rica, Mexico, Peru and Rwanda, competition in telecommunications is managed by the ICT regulatory authority. Several competition authorities have launched sectoral market inquiries and conducted competition analyses, leading to enforcement actions or policy recommendations. Enforcement cases involving digital economy companies, including major foreign platforms, have been initiated or concluded in multiple top 15 countries.

At the international level, a growing number of IIAs contain dedicated chapters on competition. These require effective competition laws, procedural requirements and cooperation for enforcement action. Some treaties also provide for technical assistance and capacity-building in this area. Telecommunications chapters add dedicated disciplines on network access use, interconnectivity, universal services obligations and the prevention of anticompetitive practices. A small number of agreements explicitly encourage the parties to cooperate in the development and application of competition laws relating to the digital economy.

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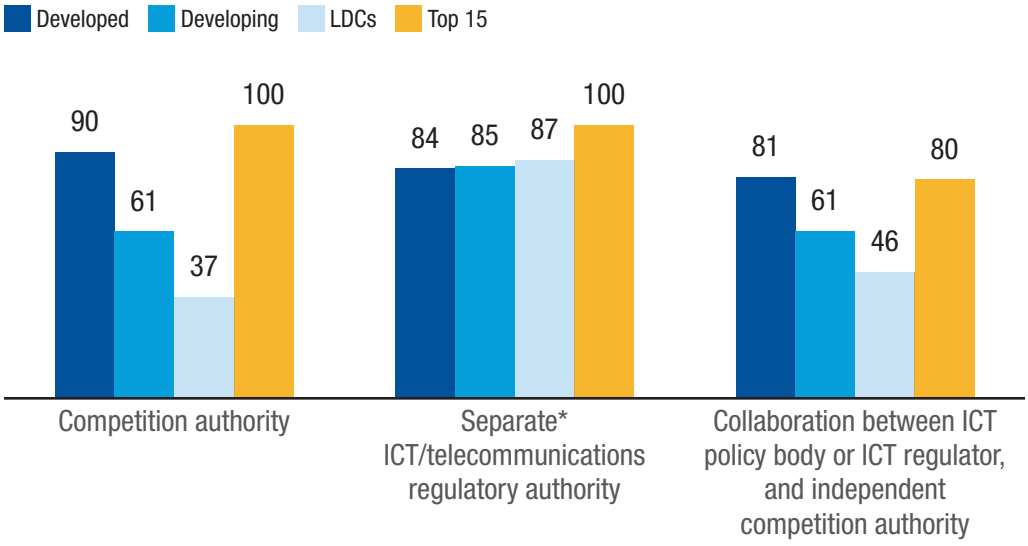
Figure I.5.

Top 15 countries have a strong competition institutional framework

Existence of a competition authority and of a separate regulatory authority, share of countries (left) and collaboration between the ICT policy body or ICT regulatory authority and independent competition authority, policy score (right)
(Percentage)



Source: UNCTAD, based on ITU ICT Regulatory Tracker and G5 Benchmark.

Note: * separate means independent in terms of finance, structure and decision-making from the operator(s) and the ministry in charge

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Policy lessons

1. Traditional competition criteria, such as price or market share, are often insufficient in digital contexts. Authorities need to incorporate factors like data access, essential technologies, interoperability and network effects into assessments of dominance and merger control.
2. Designating "gatekeepers" or establishing clear conduct obligations can prevent abuses before they occur, ensuring fair access and market openness.
3. Clear delineation of mandates between competition and sectoral regulators, especially in telecommunications and ICT, is critical to avoid overlaps and ensure coherent enforcement.
4. Measures that facilitate SMEs' participation in e-commerce and digital platforms, including data-sharing frameworks and interoperability standards, help level the playing field and expand market opportunities.
5. Digital markets evolve rapidly. Periodic market inquiries, information exchange among authorities and participation in global and regional networks strengthen enforcement capacity and policy learning.
6. IIAs increasingly integrate competition policy, including by mandating capacity-building and fair, transparent, and inclusive market practices across borders. These require coordination and enforcement.

Policy guidance

1. Review and update national and international competition frameworks to reflect digital-economy-specific aspects of anticompetitive behaviour.
2. Promote an inclusive, open, safe and secure digital space, for instance by considering net neutrality.
3. Clarify regulatory roles by defining mandates between competition and ICT regulators, preventing institutional overlap and promoting coordinated enforcement.
4. Expand data policies to promote interoperability and develop sector-wide data-sharing frameworks.
5. Build institutional capacity for digital market investigation and platform regulation and regularly assess market dynamics to adjust policies in line with technological and market developments.
6. Harness IIAs for fair competition in the digital economy and tie competition-related provisions to cooperation mechanisms and, where necessary, capacity-building commitments.

II. Stimulating investment

79.32
67.63
66.01
62.78
62.5
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A. Openness to FDI

Restrictions to FDI in the digital economy can take various forms. They can be partial or total, and may take the form of foreign equity limitations, mandatory joint ventures, restrictions on the recruitment of key personnel or other regulatory barriers. They can be embedded either in investment laws or in sector-specific regulations. FDI may also be subject to dedicated administrative procedures upon entry or to screening for national security.

Country experiences

Investment screening mechanisms have expanded in scope in recent years among developed countries. They aim to address national security concerns related to the acquisition of domestic technology and knowhow in areas such as AI, semiconductors, cloud computing, 5G, quantum technology, computing hardware, among others (UNCTAD, 2019). Over 2020–2024, screening accounted for over 60 per cent of digital investment policy measures governing entry in developed countries (UNCTAD, 2025a).

In countries with available data, 30 to 60 per cent of screened projects between 2020 and 2024 involved the digital sector (figure II.1). Screening for national security is also expanding to outward FDI, for instance in the United States.[11]

In developing countries, restrictions often take the form of foreign equity limitations, as well as licensing and permitting requirements. These measures accounted for nearly 80 per cent of entry-related policy measures in developing countries between 2020–2024. Despite these restrictions, liberalization remains a key component of investment policymaking in Africa and Asia, including in the digital economy. As such, all investment liberalization measures in digital sectors in 2020–2024 were implemented by developing countries in these regions (UNCTAD, 2025a). Key examples include the liberalization of the telecommunications sector in China, Ethiopia, India and the Philippines, as well as the opening of digital payments to foreign investment in Ethiopia.

Restrictions to FDI in the digital economy can take various forms

Figure II.1.
An important share of screened projects in digital sectors
Share of digital projects in screened investment projects in selected countries
(Average percentage)

Source: UNCTAD, based on the annual reports of selected countries..

[11] Executive Order 14105 "Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern". The United States Department of Treasury issued the Final Rule implementing the Executive on 28 October 2024, effective 2nd January 2025, see: https://home.treasury.gov/news/press-releases/jy2687.

While generally open to FDI in the digital economy, the top 15 developing countries retain targeted restrictions in strategic or sensitive sectors. As in many other developing countries, restrictions are more present in telecommunications and media, mainly through foreign equity caps and, in some cases, nationality requirements for key personnel (e.g. Colombia, Thailand, and Türkiye) (figure II.2). A screening regime for national security considerations is in place in Saudi Arabia (2024 Updated Investment Law), Thailand (through the Foreign Business License, where transfer of technology is also covered) and Singapore, while Armenia, Colombia, Pakistan and Peru reserve the right to restrict FDI on security grounds.[12] Other digital economy restrictions are limited and relate to defence activities (Colombia and Türkiye), the launch and deployment of satellites (excluding manufacturing and trading, Brazil), health services (Brazil), private security (Costa Rica, Kenya and Peru), including close-circuit television (Kenya), engineering consulting (Kenya and Nigeria), digital brokerage (Saudi Arabia), unmanned aerial vehicles under certain conditions, and logistics and transportation services (Thailand) and social media platforms (Türkiye).[13] Some subsectors like telegraphs (Brazil and Mexico), mail (except for parcel delivery in Brazil) and radiotelegraphs (Mexico) are State-reserved and therefore de facto exclude private sector participation. Minimum capital requirements are rare applying broadly in Thailand or to some digital economy activities in Saudi Arabia. Pakistan has recently eased outbound investment rules for export-oriented companies, IT companies and startups (circulars in 2021 and 2024).[14]

At the international level, IIAs include commitments to open specific economic sectors of the digital economy, beyond post-establishment protections. The WTO's GATS, particularly Mode 3 supply of services (commercial presence), governs services-related FDI, covering a significant share of digital economy investment. Some IIAs have binding liberalization commitments in key digital sectors such as telecommunications, data processing, software services and cloud computing. As services digitalize, previously analogue services such as advertising and payments are also covered. Key sectors already liberalized under WTO rules include computer services and telecommunications. Figure II.3 shows high liberalization levels for investment in selected digital services. Typical restrictions such as local incorporation requirements, licensing obligations and foreign equity limits remain.

Many countries pursue additional liberalization of digital economy sectors through bilateral and regional agreements. They often use a negative list approach, i.e. sectors are opened unless specifically excluded, which differs from the WTO GATS. Under the Comprehensive

[12] In Pakistan, the provisions of the Foreign Investment (Promotion and Protection) Act of 1976 indicate a general screening for industrial undertakings. This was modified by the Investment Policy of 2013, confirmed by the Investment Policy 2023 and the Board of Investment's website: https://invest.gov.pk/investment-regime?language_id=en. However, secondary sources indicate that the country still screens FDI for national security (USDOS, 2023) The Saudi Updated Law on Investment 2024 modifies the previous regime, now requiring a ministerial approval only for sectors in the negative list, while the Minister may suspend a project for national security considerations. This negative list was not identified, and it is therefore difficult to measure its impact on digital economy sectors. In Thailand, type 2 and 3 licences also require a Foreign Business Licence, which is an approval required for certain determined foreign investments. Registration of technology contracts also applies in Nigeria and Peru. The 2024 Singaporean Investment Review Act introduced screening for both domestic and foreign investors in critical entities designated by the Minister.

[13] The Brazilian Constitution prohibits foreign investment in health services, but Law 13097 allows direct and indirect foreign capital in these sectors (IBFD, 2024). In Türkiye, social media platforms with more than one million daily access have a requirement to designate at least one representative in Türkiye who is a Turkish citizen (Law 5651 on the regulation of the broadcast in the Internet and combatting crimes committed through these broadcasts).

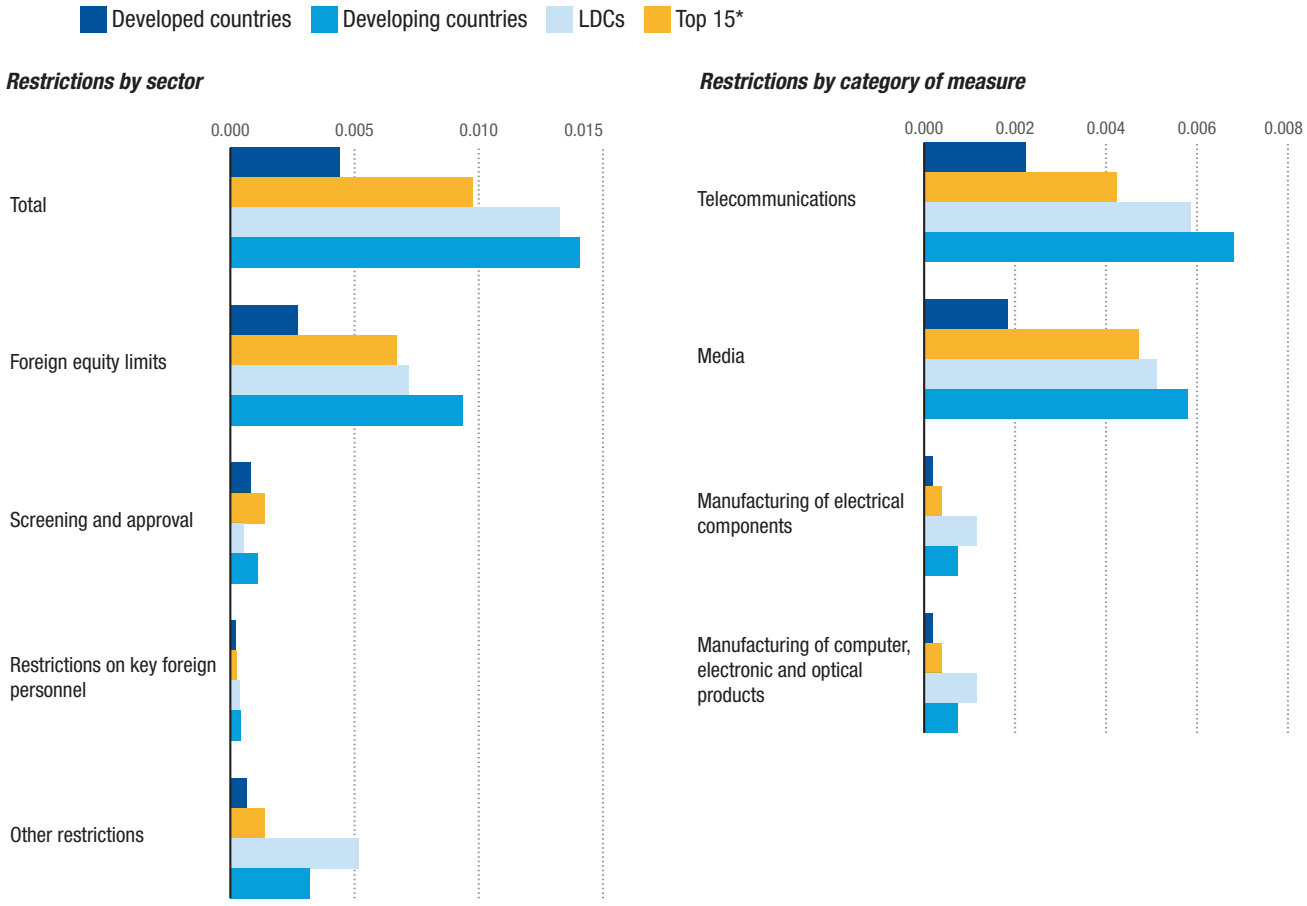
[14] Outward FDI approvals are rare and mostly tied to foreign exchange controls: approval is required in Pakistan and South Africa (above five billion South African Rand), while countries such as Nigeria limit access to foreign exchange at the official exchange rate (World Bank Group, 2022).

and Progressive Agreement for Trans-Pacific Partnership, digital sectors such as telecommunications and computer services are largely liberalized, with few reservations listed, resulting in substantial market openness beyond GATS commitments. The Regional Comprehensive Economic Partnership allows members to choose between positive and negative listing. It generally mirrors the WTO trend of high liberalization for computer-related services and relatively more restrictions in telecommunications, including foreign equity limits, joint venture requirements and local incorporation obligations. In the Comprehensive Economic and Trade Agreement between Canada and the EU, there are no major restrictions on investment in computer services, though Canada maintains limits on foreign ownership and control of facilities-based telecommunications services. Other regional agreements show similar trends, with broad liberalization for digital services sectors such as telecommunications infrastructure, cloud computing and data processing. While liberalization offers opportunities, a cautious and phased approach helps countries align commitments with their regulatory capacity and development goals, ensuring policy space to manage emerging technologies and digital sector risks.

Figure II.2.

Restrictions in digital economy-related sectors are more in media and telecommunications and consist mostly of foreign equity limits

FDI regulatory restrictiveness in digital economy-related sectors, 2023
(Policy scores)



Source: UNCTAD, based on data from the OECD FDI Regulatory Restrictiveness Index.

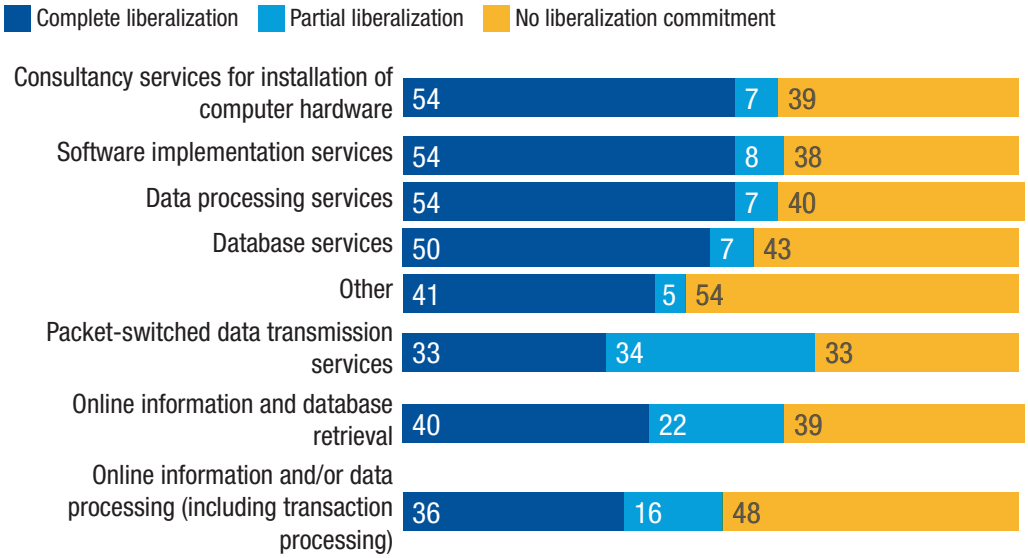
Notes: Data are available for 104 countries.

* Data are not available for Nigeria and Pakistan.

Figure II.3.

A significant share of WTO members liberalized market access for FDI in selected digital services

Liberalization commitments of WTO members for market access under mode 3 services supply in the digital economy
(Percentage)



Source: UNCTAD.

Note: Mode 3 refers to commercial presence.

Policy lessons

1. Openness to FDI can coexist with the protection of national interests. When restrictions are in place, they should be limited and narrowly focused.
2. Where FDI screening exists, limiting it to specific sectors or entities and ensuring clear legal criteria and procedures reduce uncertainty and administrative delays.
3. Using registration primarily for information and statistical purposes, rather than as an approval mechanism, facilitates entry while maintaining oversight.
4. Easing foreign exchange and approval requirements, particularly for start-ups and IT firms, supports internationalization and cross-border collaboration in digital sectors.
5. Periodically assessing the necessity and scope of FDI limitations helps preserve openness, avoid deterrence effects, and align investment regimes with evolving digital and development priorities.
6. IIAs can advance digital sector liberalization by extending market access in areas like telecommunications, data processing, and cloud services. Careful liberalization is needed to help maintain regulatory flexibility and policy space taking into account the rapidly changing nature of investment in services and their increasingly complex sectoral classification.

Policy guidance

1. Balance openness to FDI with national security and public interest.
2. Regularly review existing FDI restrictions in digital sectors, in particular core infrastructure, against strategic objectives.
3. When restrictions are introduced, ensure that they are clear, transparent and predictable to maintain investors' confidence, limited and aligned with the national development objectives for the digital economy.
4. If FDI screening is applied, clearly define the sectors covered in line with national digital development priorities and establish transparent, predictable procedures and criteria to preserve investor confidence and avoid unnecessary deterrence.
5. Simplify approval and exchange procedures for digital start-ups and technology firms to enable cross-border investment and innovation partnerships in the digital economy.
6. Consider the liberalization of key digital sectors in IIAs, using a phased approach to preserve regulatory flexibility and safeguard policy space for domestic digital development.

B. Investment facilitation

Investment facilitation plays a critical role in attracting investment in the digital economy. For digital economy investors, the ease of obtaining licences for digital infrastructure is a key factor influencing investor decisions (Stephenson, 2020). Investment facilitation helps attract FDI by making it easier to establish and operate businesses, including by leveraging e-government tools to streamline procedures and increase transparency (UNCTAD, 2024a).

Country experiences

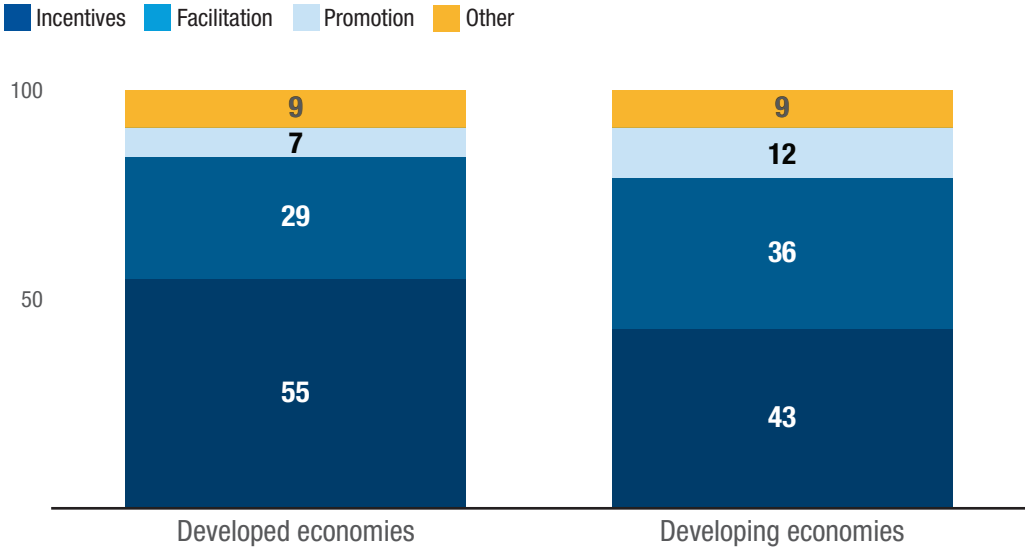
Facilitation has become central to national digital strategies and policies. In 2024, 87 per cent of digital strategies worldwide included facilitation measures, up from less than 40 per cent in 2017. Similarly, facilitation initiatives constitute more than a third of promotional digital policy measures adopted in 2024, second only to incentives (figure II.4). They include streamlining measures, particularly digital one-stop shops (OSS), simplified procedures for start-ups, data centres and semiconductors, as well as facilitation services, such as visa programmes to attract talent in the digital economy, the establishment of technoparks and transparency initiatives, such as digital information portals, guidance documents on screening mechanisms and clarifications on procedures related to investment in the digital economy (figure II.5).

In 2024, 87 per cent of digital strategies worldwide included facilitation measures

Figure II.4.

Facilitation is the second most used promotional digital measure

Share of promotional digital measure, by type and by level of development, 2020–2024
(Percentage)



Source: UNCTAD, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

Note: Promotional digital policy measures refer to measures aimed at promoting investment in the digital economy. These include facilitation (e.g. one-stop-shop, investor portals, investor support services), promotion (e.g. establishment or strengthening of investment promotion agencies, strategies, PPPs), incentives (e.g. tax or financial schemes, citizenship-by-investment, SEZ-related benefits), and other which includes other regulatory changes favourable to investors (e.g. enhanced investor protection, eased labour and migration rules, removal of operational restrictions). See also UNCTAD (2025a).

Figure II.5.

Most digital investment facilitation measures targeted streamlining

Digital investment facilitation measures by category, 2020–2024
(Number)

Source: UNCTAD, Investment Policy Monitor

Most top 15 countries' IPAs incorporate investment facilitation into their functions. They assist investors with administrative procedures, including interactions with other government bodies, and provide information on their country's legal framework.[15] Examples of digital economy-specific tools in the top 15 countries are limited, but include a comprehensive investment facilitation programme in Saudi Arabia, a presentation of the tech visa in Singapore, support for the digital economy regime development in South Africa, and promotion by Pakistan of an open investment policy and a transport and logistics partnership with China. However, not all investment facilitation tools available in these countries are reflected on their IPAs' websites.

Most IPAs also integrate digital tools into their operations and to communicate with investors. Common examples include online contact forms, multilingual assistance in Saudi Arabia and a chatbot in Türkiye. For business establishment and operations, electronic company registration and other investment procedures are available in Armenia, Kenya, Mexico, Pakistan, Rwanda and Singapore. Several websites provide direct links to relevant websites. Other examples include Pakistan's special economic zone (SEZ) management information system and a grievance registration (under development), as well as investment registry links in Mexico and Peru.

Regulatory sandboxes serve as key tools in the top 15 countries. These sandboxes allow testing of new products, etc. with reduced regulatory risk and enable balancing innovation with consumer protection: nearly all top 15 countries established fintech sandboxes. Several have broadened their scope beyond fintech: Brazil, Colombia, Kenya, and Singapore include artificial intelligence, Colombia, Kenya, Saudi Arabia, and Thailand cover telecommunications and ICT, Saudi Arabia and Singapore address data protection and privacy, Singapore and Thailand extend to healthcare, Singapore also includes energy and environmental technologies, and Thailand operates a sandbox for drone applications.

At the international level, modern IIAs aim to enhance investment flows, including in the digital economy, by embracing investment facilitation features. These features tackle ground-level obstacles to investment, for example, by ensuring transparency, streamlining processes and creating stakeholder engagement mechanisms (UNCTAD, 2023). Increasingly, IIAs incorporate digital investment facilitation tools aligning with the needs of the digital economy, for example, by allowing remote inquiries and permit requests. Between 2021 and 2023, 60 per cent of IIAs included digital facilitation, up from 36 per cent in 2015–2016 (UNCTAD, 2024a). At the multilateral level, the text of the WTO Investment Facilitation for Development Agreement, yet to enter into force, requires parties to make available, by electronic means, information of importance to investors and encourages the acceptance of electronic submissions for investment authorization, where required. Generally, these measures apply to all investors and investments.

Some new-generation IIAs specifically include facilitation measures relating to the digital economy. By the end of 2024, more than 100 treaties encouraged

[15] Information is based on desk research on the official websites of the top 15 countries' IPAs, namely Enterprise Armenia (enterprisearmenia.am), Brazilian Trade and Investment Promotion Agency (APEXBrazil) (apexbrasil.com.br – English and Portuguese versions), Promotion of Trade, Investment, and Tourism of Colombia (ProColombia) (procolombia.co), Costa Rican Investment Promotion Agency (CINDE, private) (cinde.org), Costa Rican Foreign Trade Promotion Agency (Procomer, public) (investincr.com), Kenya Investment Authority (investkenya.org), Mexican Single Window for Foreign Trade (VUCEM) (ventinillaunica.economia.gob.mx), Invest in Mexico (investinmx.com), Nigeria Investment Promotion Commission (nipc.gov.ng), Pakistan Board of Investment (invest.gov.pk), Peru Private Investment Promotion Agency (ProInversion) (investinperu.pe), Rwanda Development Board (rdb.rw), Invest Saudi (investsaudi.sa), Singapore Economic Development Board (edb.gov.sg), Invest South Africa (investsa.gov.za), Thailand Board of Investment (boi.go.th) and Investment Office of the Presidency of the Republic of Türkiye (invest.gov.tr).

the publication of laws relating to e-commerce and digital trade. Similarly, some treaties encourage engagement between government and digital economy stakeholders. Other treaty provisions are specific to sectors or economic activities. The African Continental Free Trade Agreement (AfCFTA) Protocol on Digital Trade, for example, commits its parties to facilitate investment in ICT sectors. Regarding specific digital services, treaty provisions on e-payment services frequently require the timely processing of licences and the publication of relevant laws and regulations.

Policy lessons

1. E-government tools reduce transaction costs and improve transparency for investors in all sectors.
2. Legal recognition of e-signatures and e-documents enhances trust and efficiency in digital transactions and cross-border operations.
3. Investor portals should include clear, up-to-date guidance on digital economy-relevant procedures, regulations and incentives.
4. Regulatory sandboxes can accelerate innovation responsibly by allowing limited testing under supervision.
5. IIAs can help facilitating investment in the digital economy by enhancing transparency, streamlining procedures, enabling electronic submissions, and engaging digital economy stakeholders to attract and sustain investment in ICT and digital services.

Policy guidance

1. Promote coordinated adoption of digital tools by relevant entities, including IPAs, to streamline investor communication, simplify establishment procedures, and reduce administrative burdens.
2. Ensure that IPAs' websites and investor portals reflect available digital investment facilitation tools, including regulatory procedures, sector-specific incentives and resources relevant to digital economy investors.
3. Consider regulatory sandboxes, where appropriate, to enable controlled testing of digital innovations, supporting innovation while maintaining necessary regulatory safeguards.
4. Embed provisions in IIAs to improve transparency, streamline digital approval procedures for sustainable investment, considering countries' level of economic development, and create engagement with digital economy stakeholders.

C. Investment promotion

IPAs can play a strategic role in attracting quality investment into the digital economy. In this rapidly evolving sector, where technological change and global competition are intense, IPAs can play a strategic role. By aligning investment strategies with broader national and digital objectives, and by strengthening their capacity in areas related to emerging technologies, IPAs can significantly enhance the effectiveness and relevance of their promotional activities, making them central drivers of a country's digital transformation agenda. Their core functions, namely image building, investor targeting, facilitation and aftercare, enable them to bridge information gaps, highlight national strengths, encourage reinvestment, participate to streamlining administrative procedures, and advocate for regulatory improvements.

Country experiences

IPAs' involvement in digital strategies remains limited. According to UNCTAD's global survey, only about 20 per cent of developing-country IPAs participate in shaping digital strategies. Most recent strategies contain only broad references to investment attraction, with IPAs explicitly mentioned in just 20 per cent of developing countries and 11 per cent of developed countries' strategies. Developed countries are also more likely (78 per cent) than developing countries (55 per cent) to identify priority sectors and technologies in their national digital strategies. In developing countries, the focus is typically on the digitalization of non-digital strategic sectors such as agriculture, health and tourism, though some also prioritize digital economy areas including cloud services, fintech and manufacturing.

Top 15 countries' IPAs target a broad spectrum of general and specialized digital activities. ICT is the most widely promoted sector, encompassing areas such as IT services and software development, electronics and semiconductors, and fintech and related financial technologies, depending on each country's priorities (figure II.6). Other ICT-related focus areas include data centres, business process outsourcing (BPO), cloud services, startups and incubation or IT parks, and advanced technologies such as AI, machine learning, cybersecurity, automation, robotics, precision engineering and e-government solutions. While creative industries receive less emphasis, IPAs also promote targeted activities like gaming, animation and electronic games, audiovisual production and soundtracks, advertising and related services.

IPAs in the top 15 countries combine core investment promotion functions with a range of complementary and specialized tools. Most IPAs engage in targeting and business development as well as image building, often supported by international offices. Many also provide aftercare services to encourage reinvestment, organize business events (section III.B) and participate in public-private dialogue and policy advocacy. Some also facilitate PPPs and public procurement opportunities, while only a smaller group retains regulatory functions. A few IPAs additionally promote outward investment, including through dedicated institutions or support programmes, though these initiatives are not always specifically focused on the digital economy. All top 15 countries' IPAs present incentives on their websites, often complemented by the presentation of available free zones or SEZs.

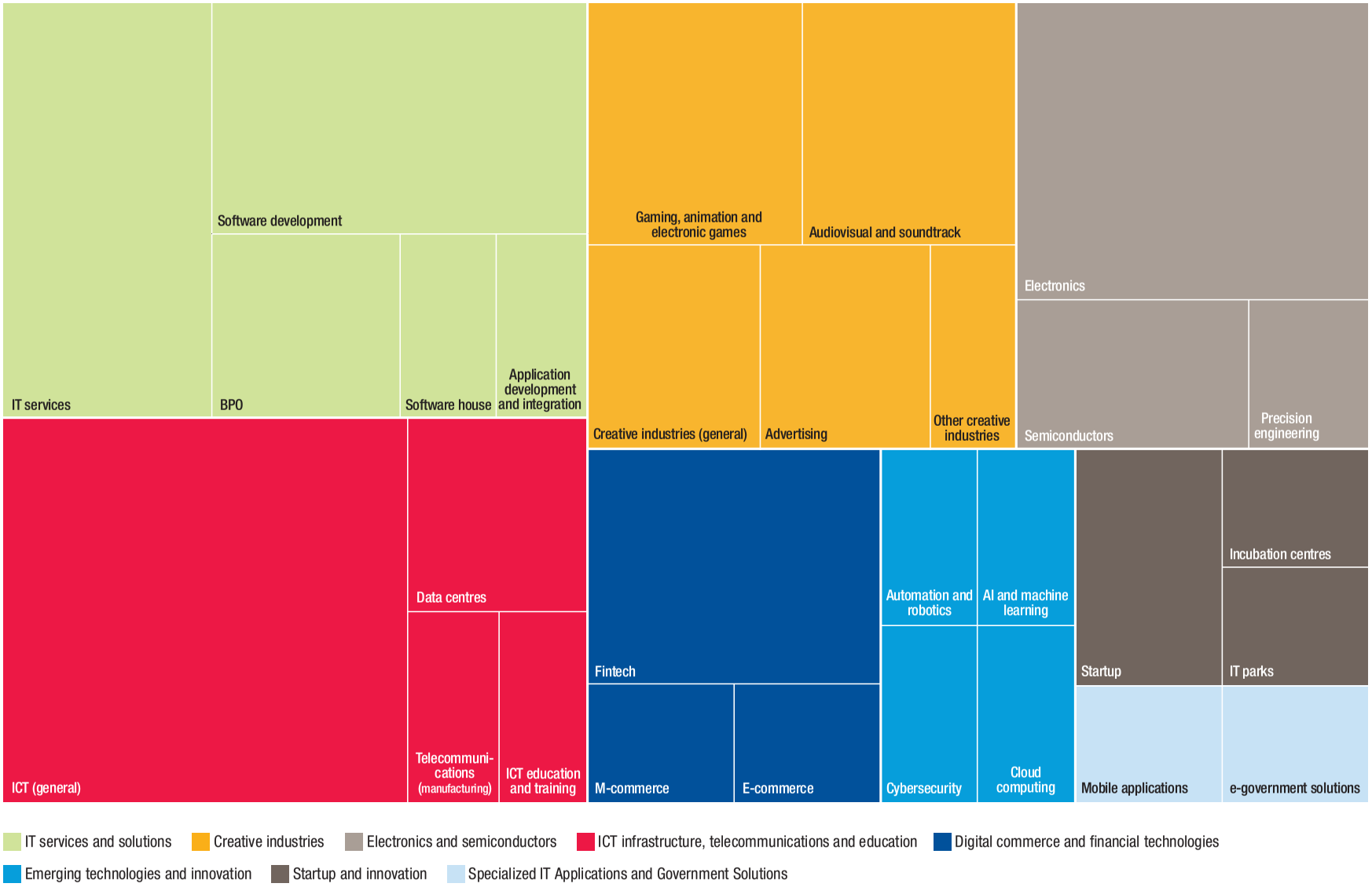
Incentives are the main promotional policy measures to attract investment in digital sectors. This shift reflects the growing emphasis on industrial policies as a strategic tool to foster digital transformation. Over the past years, they represented 60 and 51 per cent of all promotional measures, respectively, in developed and developing countries (figure II.4). Most incentives, in both country groups, are horizontal in nature, including incentives for the promotion of start-ups and R&D (figure II.7). Developing economies place greater emphasis than developed ones on the promotion of the core digital infrastructure (one third of all incentives in developing countries, against a quarter in developed countries), and less on incentives targeted at specific digital economy sectors, including core digital services and the services from the narrow scope definition (e-commerce, platform and sharing economy, AI and automation services). In the last five years, tax incentives accounted for 68 per cent of all newly introduced schemes. Financial incentives have been increasing and represented nearly half of new incentive schemes in 2024. Developing countries favour fiscal incentives.

Only about 20 per cent of developing-country IPAs participate in shaping digital strategies

Figure II.6.

Top 15 countries' IPAs promote a wide range of digital economy subsectors

Sectors promoted by top 15 countries IPAs as they appear on their websites, the size of the square is proportional to the recurrence of the sector

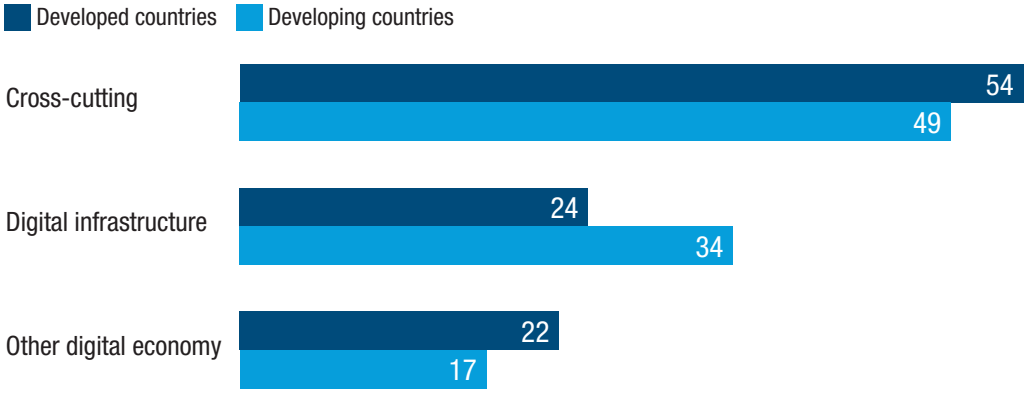


Source: UNCTAD, based on IPAs websites.

Figure II.7.

Developing countries emphasize more incentives for digital infrastructure than developed ones

Share of incentives for investment in the digital economy by sector and level of development, 2020–2024
(Percentage)



Source: UNCTAD, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

Several of the top 15 countries have introduced tax incentives aimed at attracting investment in the digital economy. Their design varies widely. Common instruments include tax exemptions, credits, deductions, reduced tax rates and accelerated depreciation allowances. Although these incentives often encompass the digital economy, they are not always exclusive to it and can apply across a broader set of priority sectors. This is the case, for instance, in Colombia, Costa Rica, Nigeria and Rwanda. Most of the top 15 countries support R&D activities through various fiscal measures. Brazil, for example, offers specific deductions and depreciation on corporate income tax (CIT) and social contributions. Colombia, Mexico and Nigeria provide tax credits, while Rwanda, Thailand and Türkiye grant tax exemptions. Türkiye stands out with a patent box regime, which provides a 50 per cent CIT tax reduction on income derived from patents and inventions resulting from in-the-country R&D, innovation, software development and technology development zones. In the area of digital economy-related SEZs and infrastructure, countries such as Armenia, Pakistan, Rwanda, Saudi Arabia and Türkiye provide tax incentives, albeit these are not always exclusive to digital economy companies. Incentives specifically targeted at startups are also present in several jurisdictions, including Armenia, Nigeria (under Pioneer Status), Pakistan and Singapore, while Thailand has a scheme for skills' development and Colombia, Mexico and Rwanda incentivize financing mechanisms, with Rwanda offering targeted incentives for angel investors meeting a fixed financial threshold.

In new-generation IIAs, investment promotion is often tailored to specific sectors or projects, including ICT. There is no standard approach for promoting investment in the digital economy, thus leading to diverse practices. For instance, the AfCFTA Protocol on Digital Trade broadly refers to promoting investment in digital infrastructure and specifically calls for promoting investment in ICT. Similarly, the Trade and Economic Partnership between the European Free Trade Association and India contains references to increased investment flows and technology collaboration, including cooperation between centres of excellence, dialogue and exchange of information between the parties as well as sharing of best practices.

Technological cooperation chapters in new-generation IIAs often mention digital technology and joint promotion activities. Such general clauses on cooperation and promotion for digital economy investment reflect the parties' intentions and can be detailed in memorandums of understanding. For example, the Australia–United Arab Emirates Comprehensive Economic Partnership Agreement includes a memorandum on "investment cooperation in data centres and AI projects", outlining areas of cooperation to explore digital economy investment opportunities.

Policy lessons

1. Targeted sector strategies, aligned with development goals and based on comparative advantages, improve the efficiency of promotion efforts.
2. Training IPA staff on emerging technologies, digital-sector dynamics and responsible investment principles improves service quality and investor engagement.
3. Integration of facilitation, aftercare and advocacy fosters reinvestment and policy improvement through public-private dialogue.
4. Online investment promotion platforms can significantly enhance visibility to investors.
5. Targeted incentives, especially those focused on research and technology development, can help attract investment and stimulate technological upgrading.
6. IIA play a role in promoting investment in the digital economy when provisions are implemented to encourage ICT-sector development, technological cooperation, and joint initiatives, such as partnerships on data centres and AI projects, through flexible tools like memoranda of understanding.

Policy guidance

1. Align and focus the promotion activities with the type of investment and investors that advance the country's digital development goals and strengthen its position along the digital value chain.
2. Include IPA staff capacity-building to ensure their effective engagement with investors in emerging digital sectors.
3. Strengthen the policy advocacy role of IPAs and promote structured public-private dialogue to identify investor needs, improve the regulatory environment and encourage reinvestment in the digital economy.
4. Use online channels and digital platforms to improve the visibility of investment opportunities, facilitate information sharing and expand outreach to digital economy investors.
5. Engage in structured public-private dialogue with digital economy stakeholders to design tax incentives that are aligned with both development objectives and business needs, ensuring effectiveness and long-term relevance.
6. Establish a review mechanism to periodically assess the impact and cost-effectiveness of tax incentives, revising them when necessary while maintaining policy stability to preserve investor confidence.
7. Include IIA provisions to promote sustainable investment in the digital economy, including for technological cooperation and joint promotion initiatives, operationalized through the establishment of joint institutional frameworks in treaties.

III. Fostering impact

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A. Digital local content

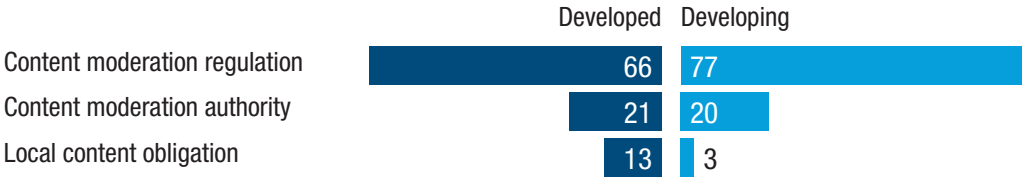
Digital content policies can promote trust and help countries capture value within digital ecosystems. Well-designed content policies can also support local creators, ensuring fair remuneration and encouraging partnerships with global platforms. The effectiveness of these measures depends on factors, such as industry capacity, funding and international market access (UNCTAD, 2025a).

Country experiences

Between 2020 and 2024, both developed and developing economies introduced measures to regulate digital content. This includes moderation, platform liability, online advertising and algorithmic transparency. Many also created dedicated authorities to oversee compliance (figure III.1).

Between 2020 and 2024, both developed and developing economies introduced measures to regulate digital content

Figure III.1.
Developed and developing countries are actively regulating content moderation
Digital content regulations, 2020–2024
(Percentage)



Source: UN Trade and Development, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

Local content obligations are gaining traction as industrial-policy tools. Mostly adopted by developed countries, these policy measures aim at ensuring that domestic creative industries remain competitive vis-à-vis the dominance of global platforms and in the digital landscape in general. Examples include Canada, Italy, the Netherlands and Switzerland (box III.1). Countries are increasingly stepping in to regulate content remuneration, ensuring that digital platforms provide fair compensation to news organizations, musicians and other creative industries. Due attention must however be paid to compliance with international agreements, like those from the WTO and to the potential effects of these regulations. For instance, after the adoption by Canada of the Online News Act in June 2023, Meta blocked access to news outlets on its platforms (box III.1).[16]

[16] See: https://www.cbc.ca/news/politics/online-news-act-meta-facebook-1.6885634 for more information.

Box III.1.
Local content obligations in digital sectors

Local content policies adopted by countries in the digital sector aim to promote cultural diversity, support local media industries, and ensure fair compensation for creators through measures such as investment obligations, content quotas, and revenue-sharing regulations and other regulations to protect local media industries.

Investment obligations: these policies vary by country but typically require streaming platforms to invest a percentage of their local revenue in national or regional audiovisual productions, often with specific language or sectoral requirements or the option to pay an equivalent levy. For instance, Italy mandates streaming platforms to invest 16 per cent of their Italian revenue in European productions, with 70 per cent allocated to Italian content, including an 11.2 per cent quota for original Italian-language works. The Netherlands requires streaming services with over €10 million in annual turnover to invest 5 per cent of their revenue in Dutch audiovisual productions, excluding sports. Switzerland obliges streaming platforms to invest 4 per cent of their local turnover in Swiss content or pay an equivalent levy.

Content quotas: digital content quotas regulate both the share of local content in video-on-demand catalogues and its visibility to users. For example, Ireland's Online Safety and Media Regulation Act mandates that video-on-demand services feature 30 per cent European content and ensure its prominent placement in catalogues.

Revenue-sharing and compensation regulations: ensuring fair remuneration for news outlets, journalists, and content creators in the digital market is another concern of regulators. In response, Canada's Online News Act establishes a legal framework that enables collective bargaining between news organizations and digital platforms. Italy has introduced criteria for fair remuneration based on market relevance and readership, while Indonesia's Publishers' Rights Regulation requires digital platforms to collaborate with verified press companies through paid licenses, profit-sharing, and data sharing.

At the regional level in 2024 the European Parliament adopted a resolution "Cultural diversity and the conditions for authors in the European music streaming market," urging the Commission to assess remuneration practices and local content requirements in music streaming. It highlights revenue imbalances, inadequate author compensation, and the need for better metadata allocation and visibility of European works, including potential quotas.

While these measures aim to mitigate the adverse effects of evolving media consumption patterns and the broader transformation of the information ecosystem on local industries, they also introduce financial, operational, and regulatory challenges. Stricter requirements may reduce content availability, increase consumer costs, and create barriers for foreign digital platforms, potentially stifling competition and innovation. Additionally, these policies can provoke pushback from major tech companies, which may respond by restricting access to news and local content.

Source: UNCTAD.

In the top 15 countries, local content requirements are generally limited. Most have implemented them for "traditional" broadcast media, including Armenia, Brazil, Colombia, Costa Rica (limitation to foreign content), Kenya, Nigeria, Pakistan, South Africa and Türkiye. These requirements may apply universally or target specific groups, such as children programming in Colombia, South Africa and Türkiye. Some countries have also introduced similar requirements for media streaming and video, including Colombia, Nigeria, and Pakistan, with ongoing discussions in Brazil, Peru and South Africa. Other countries, like Singapore, incentivize it.

Policy lessons

1. Market size and production capacities can influence the effectiveness of local content provisions.
2. Fair-remuneration frameworks can strengthen creative ecosystems.
3. Regulations should avoid excessive obligations that risk discouraging new entrants or limiting content availability.
4. A phased approach with regular consultation and impact assessment can help ensure adaptability and long-term impact.
5. Independent and well-resourced regulators enhance credibility. Dedicated content or media authorities ensure consistent enforcement and stakeholder trust.

Policy guidance

1. Assess domestic capacity and funding to ensure digital content policies are feasible and do not discourage FDI or exceed local capabilities.
2. Align localization and content rules with FDI and digital economy goals, choosing approaches that protect data without limiting innovation or market access.
3. Promote FDI in locally relevant digital content through scalable, phased initiatives consistent with national strategies and global commitments.
4. Adopt flexible, phased frameworks for content and localization policies, with regular reviews and stakeholder consultations to ensure continued relevance.
5. Strengthen regulatory authorities to be independent, well-resourced, and transparent, ensuring effective enforcement and investor confidence.

B. Taxation

Tax policies in the digital economy should aim to secure revenue while preserving investment attractiveness. Unlike transactions involving tangible goods, digital services can be delivered across borders without a physical presence, complicating the assessment of value creation, profit allocation and the enforcement of tax obligations. This situation raises concerns related to base erosion and profit shifting (BEPS), which can undermine tax revenues and potentially trigger a "race to the bottom" in CIT rates or lead to increased tax incentives targeting digital economy companies.[17] Moreover, it affects the overall tax base and risks creating distortions between digital and non-digital businesses. This context requires rules-adaptation and capacity-building for tax administrations (UNCTAD, 2025c).

[17] OECD, Cross-border and international tax, Key messages: https://www.oecd.org/en/topics/cross-border-and-international-tax.html#key-messages.

84 per cent of developed countries have introduced digital economy-specific taxes, compared to 41 per cent of developing countries and only 23 per cent of LDCs

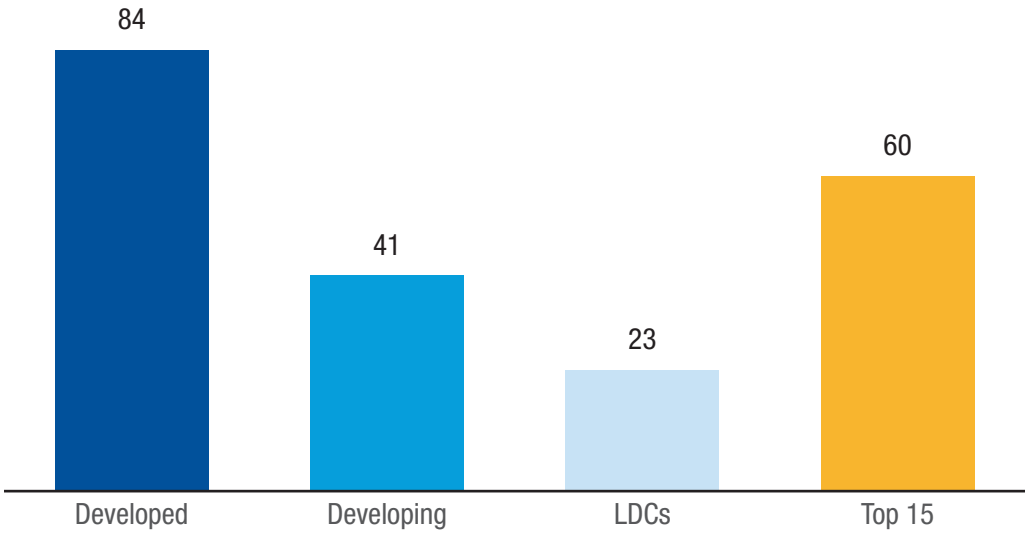
Country experiences

Developed and developing countries are adopting different approaches to digital taxation. According to ITU data, 84 per cent of developed countries have introduced digital economy-specific taxes, compared to 41 per cent of developing countries and only 23 per cent of LDCs (figure III.2).[18] The pace is increasing though, as, over the past five years, digital tax policy measures have been introduced in 59 per cent of developed countries and 55 per cent of developing countries (excluding incentives). Their sectoral focus and implementation approach differ. In developed countries, tax measures are narrowly focused, with nearly two-thirds targeting fintech, e-commerce and platform-based or sharing economy activities, while the rest covers broader areas such as digital infrastructure and services. These include taxes on cryptocurrencies, non-fungible tokens, audiovisual services, e-commerce and digital platforms, as well as adoption of the Organisation for Economic Co-operation and Development (OECD)'s global minimum tax under Pillar Two of the OECD/Group of 20 Inclusive Framework Statement on the Two-Pillar Solution. In developing countries, about half of recent digital tax policy measures target specific activities, mainly e-commerce, followed by fintech and platform-based services, while over 40 per cent take a cross-cutting approach across the digital economy (figure III.3).

Figure III.2.

Digital economy-specific taxes are implemented more widely by developed and top 15 countries than developing economies and LDCs

Adoption of digital economy-specific taxes, share of countries
(Percentage)



Source: UNCTAD, based on ITU G5 Benchmark data.

[18] Taxes on the telecom/digital sector (supply side) or on Internet services/devices/SIM cards/airtime recharge (demand side).

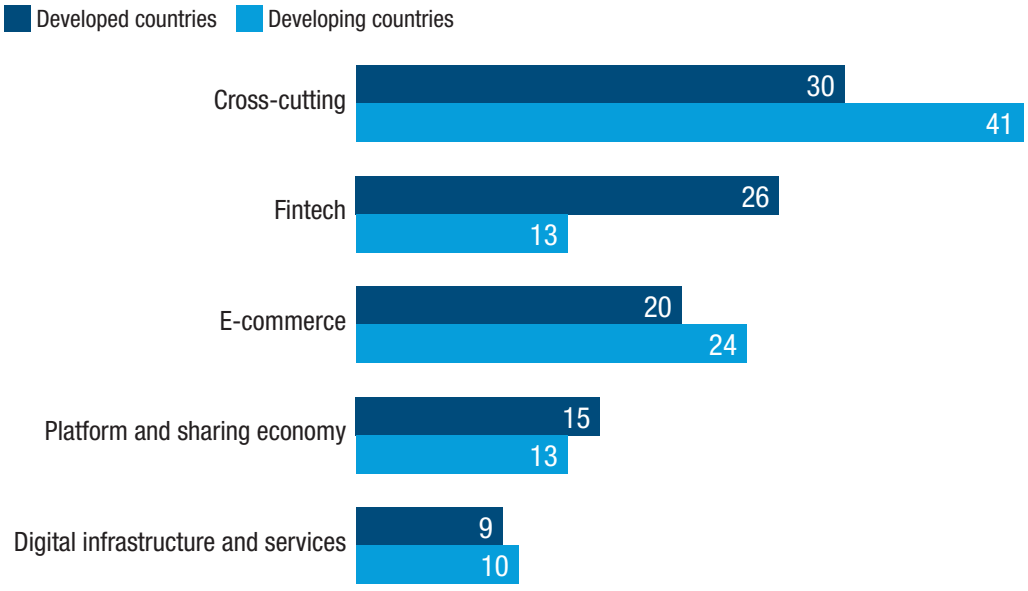
The top 15 countries have reformed their tax frameworks to address the digital economy at a higher rate than the average of developing countries. An analysis based on information from the International Bureau of Fiscal Documentation (IBFD) shows that the most widespread measure in these countries is on value-added tax (VAT), with the majority covering non-residents as taxable persons, either in line with the same rules as residents or, more specifically to the digital economy, with provisions on e-commerce transactions and digital services providers, mandating or permitting their registration, and/or including a specific procedure to them, notably through a reverse charge mechanism, which transfers the obligation to account for VAT from a non-established digital service provider to the recipient, thus ensuring effective collection and neutrality in cross-border digital transactions (box III.2).[19]

Globally, as of June 2024, 101 countries had enacted indirect taxes on transactions in the digital economy (UNCTAD, 2025c). In the area of CIT, Singapore, for example, has enacted rules to determine whether revenue from e-commerce activities can be considered as sourced domestically. While some jurisdictions across the world apply higher CIT rates to telecommunications, considered a profitable sector, among the top 15 countries, only Türkiye imposes an increased rate on payment and electronic money institutions. Finally, some of top 15 countries have implemented specific taxes (typically withholding taxes or excise duties) on certain digital activities. Examples include taxes on digital services and content creation (Kenya and Türkiye), e-commerce and online marketplaces (Pakistan and Türkiye), gambling and betting (Peru), software exploitation payments (Colombia) and telecommunications (Mexico and Peru).[20]

Figure III.3.

Developing countries take a more cross-cutting approach to digital tax policy measures

Sectoral distribution of tax policy measures affecting digital economy, percentage, 2020–2024
(Percentage)



Sources: UNCTAD, Investment Policy Monitor and Digital Policy Alert initiative of the St. Gallen Endowment for Prosperity through Trade.

[19] Available at https://research.ibfd.org/#/.
[20] In Nigeria, the 5 per cent excise duty on telecommunication services, which had been reinstated in May 2023, was abolished in August 2025 (see: https://research.ibfd.org/#/ for more information).

Box III.2.
Nigeria's VAT reform for e-commerce and digital transactions

Nigeria has restructured its VAT system to include e-commerce and digital transactions, maintaining the destination principle, where taxation is based on the place of consumption rather than production. The reform ensures tax neutrality and incorporates a reverse charge mechanism. The country adopted a three-pronged approach: legislative amendments, administrative guidelines and process automation to support compliance and administration. The key amendments are:

- Including detailed rules on when Nigeria is considered the place of final consumption of a supply.
- VAT-liability of imports, while exports are exempted, with clear input recovery provisions.
- Redefining exported services, applying only if the recipient is outside Nigeria, except for services provided by the permanent establishment of a non-resident.
- Including the reverse charge mechanism – if a supplier fails to charge VAT or is not required to do so, the business recipient must self-account and remit VAT – applicable in business-to-business digital transactions.
- Mandatory registration and VAT invoices issuance of foreign suppliers making taxable supplies to Nigeria.
- Allowing resident recipients or other designated parties to withhold or collect VAT on business-to-consumer cross-border supplies of services and intangibles.
- Appointment of representatives by non-resident suppliers to handle VAT obligations.
- Issuance by the tax authority of detailed guidelines for VAT collection on cross-border transactions.

Source: adapted from UNCTAD, 2025c.

Some top 15 countries have adopted unilateral measures to address the challenges arising from the digital economy on taxation. Brazil is considering a digital service tax (DST) (CIDE-Digital) while Türkiye has adopted it. Significant economic presence (SEP) rules were enacted by Colombia, Nigeria and Pakistan. Kenya transitioned from a DST to an SEP framework in December 2024. In practice, DSTs and SEPs differ significantly in their design and implications. DSTs are typically turnover-based taxes levied on gross revenues from specific digital services and are generally not covered by existing double taxation treaties. In contrast, SEP rules aim to broaden the definition of taxable nexus for income tax purposes by focusing on digital economic activity, enabling the taxation of net income or profit in line with treaty principles, albeit their enforcement also still faces legal and enforcement challenges. DSTs have been criticized for their potential distortionary effects which may lead to trade tensions and tariff retaliations, as well as the risk of double taxation and difficulty to administer by tax authorities (Vasquez, 2023 and OECD, 2020). In response to the introduction of DSTs in their regimes, countries including Türkiye, as well as Austria, France, Italy, Spain and the United Kingdom,

concluded transitional arrangements with the United States, which include interim credit mechanisms to mitigate the impact of DSTs on affected companies.[21]

International cooperation is needed in this area. Most top 15 countries joined the OECD/Group of 20 Inclusive Framework Statement on the Two-Pillar Solution, and Kenya and Nigeria signed the Outcome Statement aimed at resolving the tax challenges posed by digitalization. However, progress on the implementation of Pillar One, which is intended to phase out unilateral measures like DSTs, is stalling. At the United Nations, the Framework Convention on International Tax Cooperation, currently in negotiation, does not specifically contain provisions on the taxation of the digital economy. However, its terms of reference, adopted at the end of 2024, indicate that "one of the early protocols should address taxation of income derived from the provision of cross-border services in an increasingly digitalized and globalized economy" and at least one protocol is expected in this area.

Policy lessons

1. Establishing clear and transparent rules for the taxation of digital activities reduces uncertainty and prevents revenue losses from cross-border digital operations.
2. Instruments such as DSTs and SEP rules can clarify the link between value creation and tax liability, though their effective implementation requires adequate administrative capacity and international cooperation.
3. Applying VAT to e-commerce and digital services ensures broad coverage and supports revenue mobilization in a globally interconnected market.
4. Collaboration among tax authorities on global and regional platforms facilitates information exchange, reduces disputes and supports coherent approaches to taxing the digital economy.

Policy guidance

1. Adopt or amend tax frameworks to explicitly address digital revenues, including rules that clarify tax liability and mitigate risks of double taxation and market distortion, ensuring predictability for investors.
2. Provide targeted training and technical assistance to tax authorities to build capacity for effective implementation and enforcement of digital tax measures, while strengthening participation in international initiatives to promote consistency and cooperation.
3. Streamline cross-border VAT registration and reporting systems for non-resident digital suppliers, improving compliance efficiency and revenue collection while minimizing administrative burdens.
4. Strengthen international cooperation through participation in global and regional tax initiatives to harmonize approaches, prevent double taxation, and promote transparency.

[21] See, for instance, Joint Statement from the United States and Türkiye regarding a compromise on a transitional approach to existing unilateral measures during the interim period before Pillar One is in effect (November 2021): https://home.treasury.gov/news/press-releases/jy0500, and the Updated Joint Statement (March 2024): https://home.treasury.gov/news/press-releases/jy2170.

C. Environment

The expansion of the digital economy presents several environmental challenges. The rapid deployment of digital infrastructure, such as data centres and telecommunications networks, entails high energy and water consumption, significant greenhouse gas emissions and increasing volumes of electronic waste (UNCTAD, 2024b). The magnitude of these impacts depends largely on host country policies and standards, which in turn can influence international investment decisions.

Country experiences

Only about half of developing countries' strategies refer to environmental concerns, compared to 86 per cent in developed countries

Integration of environmental concerns in digital strategies is limited. Only about half of developing countries' strategies refer to environmental concerns, compared to 86 per cent in developed countries. When mentioned, references typically stress alignment with the Paris Agreement and the SDGs but lack concrete or sector-specific targets (UNCTAD, 2025b). Some strategies, such as those of Burkina Faso, Samoa and the African Union, explicitly identify e-waste as a major concern.

Most environmental aspects of digital operations continue to fall under general environmental regulations, rather than specific digital-sector frameworks. Nonetheless, a few countries have introduced mandatory sustainability requirements for data centres. Chile, China and Singapore have set targets or guidelines on energy efficiency, cooling systems and renewable energy use. In Europe, the 2023 EU Energy Efficiency Directive requires data centres with power demand above 500 kW to report on key metrics such as energy and water use, IT load, waste heat recovery and temperature setpoints. Some countries, such as Denmark and Finland, encourage integration of data centre waste heat into district heating networks. Voluntary certification schemes, environmental guidelines and tax incentives for facilities using renewable energy are emerging in Chile, India, Malaysia and Singapore, promoting efficiency in energy, water and carbon use as well as resilience and eco-design.

Among the top 15 countries, environmental standards for digital sectors are often voluntary or targeted. Regulations typically focus on specific activities, such as data centres, rather than covering the full range of environmental impacts resulting from the digital economy. Singapore and Mexico have adopted data centre construction standards, while Peru includes environmental considerations in telecommunications projects. Singapore also allocates data centre capacity according to environmental criteria. Saudi Arabia, on the other hand, adopted a whole-of-sector sustainability approach with several initiatives and a regulatory toolkit developed in partnership with the Digital Cooperation Organization.[22]

E-waste is the most widely regulated environmental issue, but gaps persist. Despite its toxic components and valuable materials, most developing countries lack comprehensive frameworks on e-waste, and informal recycling remains widespread. While 98 per cent of developed countries have adopted relevant laws, only 41 per cent of developing countries and 33 per cent of LDCs have done so (figure III.4). Among the top 15 countries, 80 per cent have enacted legislation, often based on extended producer responsibility. Examples include Colombia, Costa Rica, Kenya, Mexico, Peru, Singapore, South Africa, Thailand and Türkiye, which impose producer take-back obligations, e-waste collection goals and recycling targets. Brazil requires reverse logistics systems for electronics, while Thailand has reinforced its 2020 e-waste import ban with broader

[22] See: https://dco.org/sustainability-toolkit-for-the-ict-sector-2/ for more information.

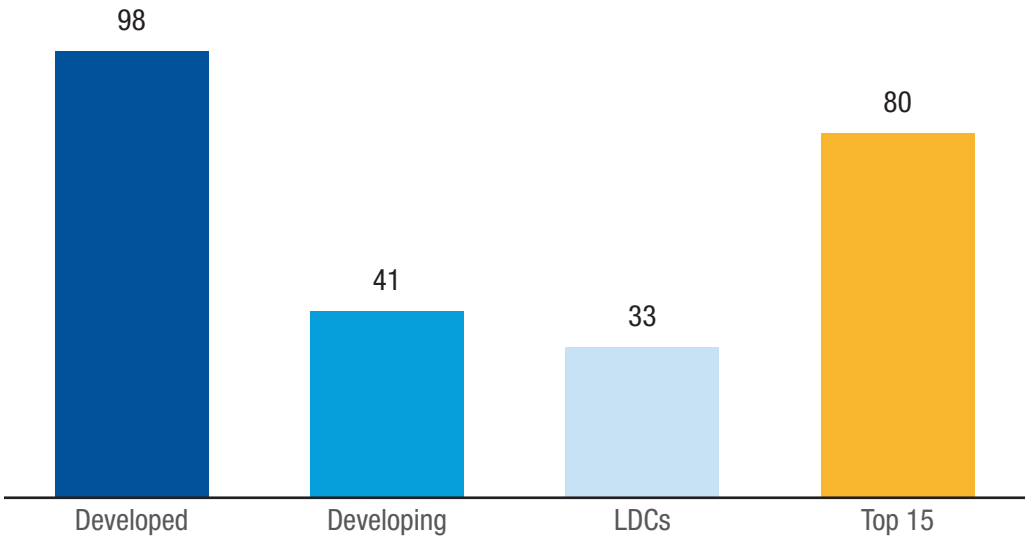
restrictions introduced in 2025. Public awareness campaigns on e-waste disposal are also being implemented in Costa Rica, Mexico, Thailand and Türkiye.

Additionally, an international initiative led by Saudi Arabia and the ITU is piloting global e-waste standards in developing countries, including Rwanda.[23]

Figure III.4.

E-waste regulations have been implemented in a third of LDCs and less than half of developing countries as opposed to nearly all developed countries

Adoption of e-waste regulations and management standards, share of countries (Percentage)



Source: UNCTAD, based on ITU G5 Benchmark data.

Institutional coordination strengthens environmental governance in the digital economy. Environmental oversight often involves multiple regulators, including energy, water and ICT authorities, requiring a whole-of-government approach. Most top 15 countries display strong inter-agency collaboration, in contrast to most LDCs where institutional fragmentation remains a barrier, according to data from the ITU G5 Benchmark. IPAs can also play a role, helping investors navigate environmental regulations, assisting in streamlining permits and promoting linkages with renewable energy providers. In this regard, Chile, for instance, uses renewable energy capacity as a key marketing point in digital investment promotion.

Policy lessons

1. Embedding sustainability considerations in digital economy frameworks ensures that growth in infrastructure and services aligns with national climate and environmental goals.
2. Extending binding rules to cover energy use, emissions, water consumption and ICT manufacturing promotes responsible investment and operational efficiency across the digital value chain.
3. Building on existing e-waste initiatives can help expand coverage toward a full

[23] See: https://www.itu.int/hub/2024/10/promoting-effective-e-waste-regulation-in-developing-countries/ for more information.

life-cycle approach to environmental management in digital sectors.

4. Gradually strengthening environmental requirements, supported by data collection and performance tracking, helps countries balance digital expansion with sustainability commitments.
5. Effective collaboration among ICT, environmental and energy authorities enables integrated planning, consistent regulation and more efficient resource use.

Policy guidance

1. Integrate environmental considerations into digital economy policies and regulations across both pre- and post-investment stages, addressing energy use, emissions, resource consumption, and e-waste management.
2. Establish and enforce environmental standards or certifications for data centres, digital infrastructure, and ICT manufacturing, ensuring that environmental measures are legally binding and consistently applied.
3. Adapt environmental impact assessments to address the specificities of digital sectors, ensuring that e-waste management and life-cycle considerations are embedded in project evaluation and regulatory review processes.
4. Strengthen coordination mechanisms between digital economy, environmental and energy authorities to align strategies, harmonize regulations and promote integrated sustainability planning.

FDI can significantly boost local digital capacity, both through the transfer of knowledge to their staff and through linkages with domestic firms

D. Digital skills and linkages

Policy frameworks for strengthening digital skills and business linkages are central to attracting and benefiting from international investment in the digital economy. Businesses cite the level of digital skills as the most important factor when investing abroad in the digital economy (Stephenson, 2020). Skilled workers, in both data science and the application of AI to particular business operations, are essential for AI adoption and development (UNCTAD, 2025d). In this regard, FDI can significantly boost local digital capacity, both through the transfer of knowledge to their staff, thus reinforcing skills, and through linkages with domestic firms, thus reinforcing integration in digital value chains. When skill development strategies and FDI attraction are aligned, they can reinforce each other in a virtuous cycle. Yet, in many cases, this synergy remains underexploited.

Country experiences

Skills development is a central pillar of national digital strategies. Nearly all adopt a dual approach: inclusivity by extending basic digital competencies to underserved groups and developing advanced skills innovation ecosystems and support for investment in high-value sectors such as AI, cybersecurity and data science (UNCTAD, 2025b).

Almost all top 15 countries have established programmes to attract digital skills... Brazil, Colombia, Costa Rica, Kenya, Saudi Arabia, South Africa and Thailand have adopted a digital nomad visa scheme, with sometimes a minimum wage or capital required. Peru, Rwanda, Singapore, Thailand and Türkiye also operate selective tech-visas aimed at founders, researchers or experts in target industries. Notably, Singapore's TechPass

is limited to 500 places and requires two of three specified conditions, including high-value tech experience and income. In some instances, investment facilitation tools are also in place. Indeed, while immigration authorities handle these visas in most countries, Thailand has a dedicated one-stop shop service, and in Singapore and Türkiye, responsibilities lie, respectively, with the IPA and the relevant ministry.

… and enhance them. Armenia, Brazil, Costa Rica, Kenya, Nigeria, Pakistan, Peru, Rwanda and Saudi Arabia run skills-building initiatives, including in partnership with foreign institutions. Armenia and Colombia have embedded IT education in schools, with particular attention to youth, women and rural populations. Armenia, Colombia, Costa Rica, Nigeria, Kenya and Saudi Arabia propose traineeships and private sector partnerships. Cooperation with foreign governments is also present, such as Costa Rica with the Republic of Korea and Kenya with China and the Republic of Korea. Other examples include the Tech:X programme concluded between Singapore and Indonesia and fully launched in April 2025, which promotes cross-border work opportunities for young tech professionals of both countries, while helping businesses in both countries access and exchange high-potential talent.[24] Rwanda partnered with the International Organization for Migration (IOM) to offer technical and vocational education and training (TVET).

Some countries have also deployed initiatives with their diaspora. For instance, the Start-Up Armenia Foundation, a government-backed initiative that connects diaspora Armenians with local entrepreneurs, encourages investment, mentorship and networking opportunities. Nigeria holds annual Diaspora Investment Summits to foster connections between diaspora tech professionals and local start-ups, universities and investors. Rwanda and the IOM have partnered to address the needs of the TVET sector in the country through the engagement of highly skilled diaspora professionals residing in Europe.

Business linkage initiatives vary in format. Measures implemented take the form of the organization of events to showcase local solutions to international buyers, for instance Brazil's ICT edition of the Exporta Mais Brasil programme, online databases and platforms to create partnership opportunities, including Kenya's Partnership Database portal, and collaboration with foreign countries to promote networking and cooperation opportunities. Singapore, for instance, established the Global Innovation Alliance Initiative (UNCTAD, 2025a) and concluded partnerships with France (France-Singapore Digital and Green Partnership), and the United States (United States-Singapore Partnership for Growth and Innovation).

Some countries conduct broader linkage initiatives that include digital sectors within wider economic strategies. Costa Rica provides supplier catalogues and linkage services that include the ICT sector, and Mexico has developed, with support from the Inter-American Development Bank, the ComerciaMX platform to globally connect businesses, including digital ones. Costa Rica, South Africa and Türkiye's IPAs have also established business linkages and matchmaking services and Pakistan has created, in partnership with China, a business-to-business matchmaking platform.

At the international level, some new-generation IIAs include cooperation provisions that may support the integration of developing countries into global digital value chains. They provide, for example, for information exchange, technology transfer, technical assistance and capacity-building – covering skills development, digital literacy and ICT infrastructure. Some IIAs identify ICT as a priority, committing parties to cooperate. The EU–Kenya Economic

[24] See: https://www.mti.gov.sg/Partnerships/Tech-X-Programme for more information.

Partnership Agreement, for example, aims to enhance connectivity, frameworks, development, capacity-building and ICT-enabled services such as e-commerce, e-government and transactions. The AfCFTA Digital Trade Protocol and the Regional Comprehensive Economic Partnership similarly address the concerns of developing economies, including technical assistance, digital skills development and investment in the digital economy.

Policy lessons

1. Digital nomad and tech visa schemes can address immediate labour shortages, but long-term competitiveness depends on developing local digital expertise.
2. Policies that link foreign professionals and firms with domestic training and mentorship initiatives help ensure that international expertise benefits the local workforce. In this regard, in addition to domestic frameworks, IIAs can also foster developing countries' integration into global digital value chains by including cooperation provisions on technology transfer, capacity-building, digital skills, and ICT infrastructure.
3. Collaboration with industry, foreign universities and international development partners can help strengthen curricula, research capacity and access to emerging technologies.
4. Mobilizing the skills, networks and investments of diaspora can support entrepreneurship, innovation and the diffusion of digital know-how.
5. By enhancing linkages, including through ICT-focused events, digital partnership platforms and matchmaking services, IPAs can connect foreign investors with domestic firms and training institutions, fostering inclusive digital ecosystems and strengthening inclusion in the global value chains.
6. IIAs increasingly include cooperation mechanisms, relating to technology transfer, technical assistance, digital skills development and ICT infrastructure support, that can help integrate developing countries into global digital value chains and strengthen their digital economy.

Policy guidance

1. Implement talent mobility and skills transfer programmes that attract international expertise while fostering local capacity-building, ensuring that short-term inflows of foreign talent contribute to sustainable domestic skills development.
2. Partner with foreign universities, training institutions and industry actors to align international expertise with national education priorities, support research collaboration, and develop demand-driven digital training programmes.
3. Engage the diaspora through structured programmes that connect global expertise with local needs, fostering entrepreneurship, knowledge transfer, and digital innovation.
4. Integrate talent and innovation linkages into IPA strategies, using digital partnership platforms, events and matchmaking mechanisms to connect investors, firms and training institutions, and strengthen the broader digital ecosystem.
5. Include targeted IIA clauses on digital skills training, inclusion, SME support and digital infrastructure development.

E. Other aspects of international investment agreements for sustainable development

IIAs interact with a wide range of issues relevant to investment in the digital economy. These include data governance, IP and competition (section I.B). IIAs can also enhance investment flows in the digital economy by including carefully designed provisions on investment liberalization, facilitation and promotion (section II).

IIAs cover the digital economy either implicitly or explicitly. Old-generation IIAs typically provide for implicit coverage through their open-ended definition of investment, contained in virtually all of them. Investment in the digital economy tied to a local presence in the host State is therefore likely to meet the definition of investment. This includes physical assets, such as ICT infrastructure, and non-physical ones, including IP rights. Stand-alone digital goods and services, such as applications and websites, may not fall under the treaty definition of investment. Many new-generation IIAs address the digital economy explicitly with digital-relevant provisions on investment facilitation, promotion, cooperation and liberalization. These treaties could enhance investment in the digital economy to bridge the digital divide, including investment in fundamental infrastructure. Moreover, an increasing number of treaties directly regulates digital economic activity, including investment in the digital economy.

Country experiences

Old-generation IIAs lack proactive provisions that seek to enhance investment flows for the digital economy but pose risks of exposure to investor-State dispute settlement (ISDS). At least 71 ISDS cases have involved telecommunications, with newer disputes increasingly linked to intangible assets, data and IP rights. These cases expose tensions between, on the one hand, a State's right to regulate emerging tech and, on the other hand, investor protections. Clearer IIA provisions, such as refined standards, well-defined exceptions and carveouts, can help maintain regulatory flexibility, reduce ISDS risks and support sustainable digital investment.

IIA rules relating to the digital economy emerged around the millennium and increased significantly in the last decade. Currently, 231 international agreements (191 in force) contain provisions on the digital economy. Most of these agreements are broader economic agreements with investment provisions. However, the rules are rarely found in dedicated investment chapters but instead form part of chapters on electronic commerce, digital trade, services and IP. Additionally, a small number of bilateral investment treaties explicitly touch on digital economy investment. Since 2019, a few stand-alone digital economy agreements have existed, which often do not directly address investment but are included in the analysis for completeness. Overall, the number of treaties explicitly regulating the digital economy is limited relative to the overall IIA universe of 3,332 agreements (2,625 in force).

231 international investment agreements contain provisions on the digital economy

Treaty rules on the digital economy govern how goods and services are produced, marketed and distributed electronically. They address issues such as non-discrimination, paperless commerce (e-invoices, e-signatures, e-payments), data flows, data protection, cybersecurity, source code, digital skills, inclusion (especially for SMEs) and consumer protection. These treaties

provide a stable framework, overcoming coordination challenges (e.g. prohibiting customs duties on electronic transmissions) and facilitating cooperation, particularly in cybersecurity and data protection.

Treaty-making in this area is dominated by developed economies. Many of the agreements that cover the digital economy have been concluded by advanced economies and few LDCs participate in the network of in-force treaties. For many African countries, the AfCFTA Protocol on Digital Trade, yet to enter into force, represents their first engagement in global digital rulemaking. This imbalance may mean that critical issues for LDCs are underrepresented. Inclusive negotiations, capacity-building and technical support are key to ensuring more equitable and inclusive digital rule making.

New areas of regulation in treaties include fintech, e-payments and AI. Many of these clauses are currently non-binding, focusing on cooperation for the development of standards and knowledge-sharing. On e-payments in particular, the few treaties that address the topic aim to promote secure and efficient cross-border transactions and highlight interoperability. Agreements involving developing parties, such as the WTO Joint Statement Initiative on E-Commerce and the AfCFTA Digital Trade Protocol, yet to enter into force, additionally emphasize the affordability and inclusiveness of services.

Development-focused provisions remain mostly non-binding and scarce

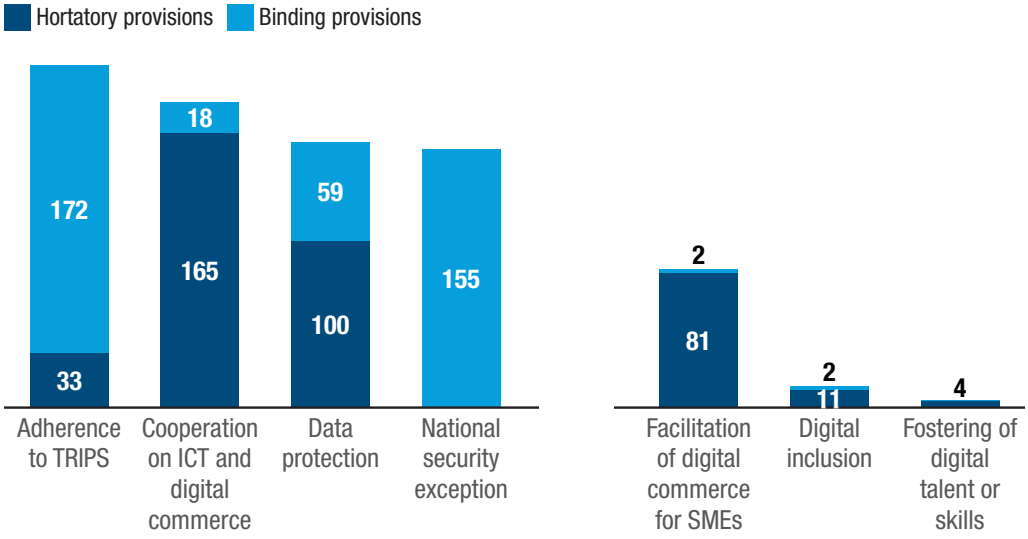
Development-focused provisions remain mostly non-binding and scarce. Figure III.5 contrasts the most frequently used trade and investment-related provisions in treaties that regulate the digital economy with the scarce inclusion of development-focused issues. The limited participation of developing countries, particularly LDCs, in treaty-making appears to drive this trend. The AfCFTA Digital Trade Protocol, which aims to promote and facilitate investment in the ICT sector in accordance with the Protocol on Investment, is exemplary in its adoption of development-oriented provisions for the digital economy. It includes actions to promote digital inclusion, such as improving digital literacy and supporting marginalized groups. The Protocol also addresses SME support, encourages digital innovation and entrepreneurship, and requires digital skills development. In addition, it acknowledges the need for technical assistance to drive implementation.

The top 15 countries participate to varying degrees in the network of treaties that regulate the digital economy. Singapore, for example, takes a central position and is one of the top treaty innovators, having adopted agreements with an array of other countries. Others such as Colombia, Costa Rica, Mexico, Peru and Thailand equally have, given the relative novelty of these types of international obligations, increasingly developed treaty networks. Kenya, Nigeria, Pakistan, Rwanda and South Africa do not have any in-force agreements that contain detailed provisions on the digital economy. The negotiations of the AfCFTA Digital Protocol, yet to enter into force, as well as the WTO Joint Statement Initiative on E-commerce, for which a "stabilized text" has been achieved, are significant first experiences in developing international obligations for some of them.

Figure III.5.

Development-focused provisions are scarce in treaties regulating the digital economy

Frequency distribution of treaty coverage of select policy areas related to the digital economy (Number of provisions in treaties; n=231)



Source: UNCTAD, based on the TAPED data set.

Abbreviations: ICT, information and communication technology; SMEs, small and medium-size enterprises; TRIPS, Agreement on Trade-Related Aspects of Intellectual Property Rights.

Policy lessons

1. IIAs cover the digital economy both implicitly through broad investment definitions and explicitly through new provisions on digital investment facilitation, promotion, and cooperation.
2. Old-generation IIAs lack measures to enhance digital investment and have generated ISDS cases involving data and intangible assets, while new-generation IIAs more directly address digital issues, often through chapters on e-commerce, digital trade, services, or IP.
3. Developing countries and LDCs remain underrepresented in international digital rulemaking, with the AfCFTA Protocol on Digital Trade marking a first major engagement for many African countries.
4. Development-oriented provisions are limited and mostly non-binding, though the AfCFTA Protocol includes commitments on digital inclusion, SME support, innovation, and skills development.
5. Emerging treaty areas include fintech, e-payments, and AI, generally framed as cooperation measures to promote secure and interoperable digital systems.

Policy guidance

Strengthen IIAs' impact on sustainable investment

1. Clarify the definitions of "investment" and "investors" and refine key protection standards provisions, particularly in relation to dispute resolution.
2. Ensure policy space for governments through carefully designed safeguards that account for the unique characteristics of sectors relevant to the digital economy.

Encourage technology transfer on mutually agreed terms through IIAs

3. Include provisions that promote transfer of the technology needed for several key policy objectives, including digital transformation.
4. Consider complementing these provisions with adequate exceptions in clauses that prohibit the imposition of performance requirements relating to technology transfer, labour turnover and vertical linkages.
5. Consider using explicit and implicit flexibilities within international IP commitments that can allow economies to adapt international IP protection rules to their level of development.

Facilitate participation by developing countries in global digital rulemaking

6. Strengthen capacity-building and technical assistance to align provisions on digital investment with developmental objectives.
7. Harness IIAs to strengthen development-oriented provisions relating to investment in the digital economy.

Annex: summary of policy guidance

Policy component	Policy sub-component	Policy guidance
Shaping the foundations	National, regional and sectoral digital strategies	1. Define priority sectors for investment attraction in the digital economy that support progression along the digital value chain and contribute to broader strategic industrial development goals. 2. Provide key elements to inform investment planning, including the identification of infrastructure gaps and planned regulatory initiatives. 3. Integrate environmental and sustainability considerations in digital strategies. 4. Inform targeted investment promotion efforts by specifying the types of investments and investors that can advance structural transformation and digital upgrading. 5. Reinforce coordination mechanisms to ensure that the IPA, regulatory bodies and digital economy institutions operate with aligned mandates and share implementation responsibilities effectively. 6. Define targeted frameworks for high-growth digital sectors, ensuring clarity on national priorities, regulatory expectations, and investment opportunities. 7. Align national digital investment strategies with regional digital initiatives to leverage economies of scale, facilitate cross-border digital integration, and promote regulatory consistency across countries.
	Data governance	1. Establish comprehensive data protection frameworks that mandate data breach notification, include data portability rights, and define effective sanctions to promote transparency, user control, and compliance. 2. Create independent and well-resourced enforcement authorities responsible for overseeing data protection and cybersecurity, ensuring accountability and effective coordination across institutions. 3. Adopt phased and adaptable regulatory approaches, using interim measures where comprehensive laws are not yet in place, and ensuring frameworks remain flexible and aligned with technological change and national development priorities. 4. Ensure that national cybersecurity legislation covers incident reporting, threat intelligence monitoring, and critical infrastructure protection, supported by clear coordination mechanisms, compliance standards, and regular legal updates supported by capacity-building. 5. Promote international and regional cooperation to harmonize data protection and cybersecurity standards, facilitate secure cross-border data flows, and develop shared cybersecurity resources. 6. Carefully consider provisions in IIAs that address cross-border data flows, while explicitly preserving the ability to regulate in the public interest, including for privacy, data protection and national security.
	Intellectual property	1. Adapt IP laws to cover digital innovations, including software, AI-generated content and other emerging technologies, and update legal definitions and frameworks to reflect new digital content types and distribution models. 2. Regulate digital platforms through clear takedown procedures, liability rules and safe harbour protections. 3. Promote revenue-sharing and fair remuneration models for digital content creators. 4. Leverage digital tools, such as mobile apps and AI-based enforcement methods, to streamline IP systems and improve accessibility, linking IP modernization with broader innovation and industrial strategies. 5. Foster international cooperation to combat online IP infringement and strengthen cross-border enforcement through existing mechanisms and global initiatives.

Policy component	Policy sub-component	Policy guidance
Shaping the foundations	Competition	1. Review and update national and international competition frameworks to reflect digital-economy-specific aspects of anticompetitive behaviour. 2. Promote an inclusive, open, safe and secure digital space, for instance by considering net neutrality. 3. Clarify regulatory roles by defining mandates between competition and ICT regulators, preventing institutional overlap and promoting coordinated enforcement. 4. Expand data policies to promote interoperability and develop sector-wide data-sharing frameworks. 5. Build institutional capacity for digital market investigation and platform regulation and regularly assess market dynamics to adjust policies in line with technological and market developments. 6. Harness IIAs for fair competition in the digital economy and tie competition-related provisions to cooperation mechanisms and, where necessary, capacity-building commitments.
Stimulating investment	Openness to FDI	1. Balance openness to FDI with national security and public interest. 2. Regularly review existing FDI restrictions in digital sectors, in particular core infrastructure, against strategic objectives. 3. When restrictions are introduced, ensure that they are clear, transparent and predictable to maintain investors' confidence, limited and aligned with the national development objectives for the digital economy. 4. If FDI screening is applied, clearly define the sectors covered in line with national digital development priorities and establish transparent, predictable procedures and criteria to preserve investor confidence and avoid unnecessary deterrence. 5. Simplify approval and exchange procedures for digital start-ups and technology firms to enable cross-border investment and innovation partnerships in the digital economy. 6. Consider the liberalization of key digital sectors in IIAs, using a phased approach to preserve regulatory flexibility and safeguard policy space for domestic digital development.
	Investment facilitation	1. Promote coordinated adoption of digital tools by relevant entities, including IPAs, to streamline investor communication, simplify establishment procedures, and reduce administrative burdens. 2. Ensure that IPAs' websites and investor portals reflect available digital investment facilitation tools, including regulatory procedures, sector-specific incentives and resources relevant to digital economy investors. 3. Consider regulatory sandboxes, where appropriate, to enable controlled testing of digital innovations, supporting innovation while maintaining necessary regulatory safeguards. 4. Embed provisions in IIAs to improve transparency, streamline digital approval procedures for sustainable investment, considering countries' level of economic development, and create engagement with digital economy stakeholders.
	Investment promotion	1. Align and focus the promotion activities with the type of investment and investors that advance the country's digital development goals and strengthen its position along the digital value chain. 2. Include IPA staff capacity-building to ensure their effective engagement with investors in emerging digital sectors. 3. Strengthen the policy advocacy role of IPAs and promote structured public-private dialogue to identify investor needs, improve the regulatory environment and encourage reinvestment in the digital economy. 4. Use online channels and digital platforms to improve the visibility of investment opportunities, facilitate information sharing and expand outreach to digital economy investors.

Policy component	Policy sub-component	Policy guidance
Stimulating investment	Investment promotion	5. Engage in structured public-private dialogue with digital economy stakeholders to design tax incentives that are aligned with both development objectives and business needs, ensuring effectiveness and long-term relevance. 6. Establish a review mechanism to periodically assess the impact and cost-effectiveness of tax incentives, revising them when necessary while maintaining policy stability to preserve investor confidence. 7. Include IIA provisions to promote sustainable investment in the digital economy, including for technological cooperation and joint promotion initiatives, operationalized through the establishment of joint institutional frameworks in treaties.
Fostering impact	Digital local content	1. Assess domestic capacity and funding to ensure digital content policies are feasible and do not discourage FDI or exceed local capabilities. 2. Align localization and content rules with FDI and digital economy goals, choosing approaches that protect data without limiting innovation or market access. 3. Promote FDI in locally relevant digital content through scalable, phased initiatives consistent with national strategies and global commitments. 4. Adopt flexible, phased frameworks for content and localization policies, with regular reviews and stakeholder consultations to ensure continued relevance. 5. Strengthen regulatory authorities to be independent, well-resourced, and transparent, ensuring effective enforcement and investor confidence.
	Taxation	1. Adopt or amend tax frameworks to explicitly address digital revenues, including rules that clarify tax liability and mitigate risks of double taxation and market distortion, ensuring predictability for investors. 2. Provide targeted training and technical assistance to tax authorities to build capacity for effective implementation and enforcement of digital tax measures, while strengthening participation in international initiatives to promote consistency and cooperation. 3. Streamline cross-border VAT registration and reporting systems for non-resident digital suppliers, improving compliance efficiency and revenue collection while minimizing administrative burdens. 4. Strengthen international cooperation through participation in global and regional tax initiatives to harmonize approaches, prevent double taxation, and promote transparency.
	Environment	1. Integrate environmental considerations into digital economy policies and regulations across both pre- and post-investment stages, addressing energy use, emissions, resource consumption, and e-waste management. 2. Establish and enforce environmental standards or certifications for data centres, digital infrastructure, and ICT manufacturing, ensuring that environmental measures are legally binding and consistently applied. 3. Adapt environmental impact assessments to address the specificities of digital sectors, ensuring that e-waste management and life-cycle considerations are embedded in project evaluation and regulatory review processes. 4. Strengthen coordination mechanisms between digital economy, environmental and energy authorities to align strategies, harmonize regulations and promote integrated sustainability planning.

Policy component	Policy sub-component	Policy guidance
Fostering impact	Digital skills and linkages	1. Implement talent mobility and skills transfer programmes that attract international expertise while fostering local capacity-building, ensuring that short-term inflows of foreign talent contribute to sustainable domestic skills development. 2. Partner with foreign universities, training institutions and industry actors to align international expertise with national education priorities, support research collaboration, and develop demand-driven digital training programmes. 3. Engage the diaspora through structured programmes that connect global expertise with local needs, fostering entrepreneurship, knowledge transfer, and digital innovation. 4. Integrate talent and innovation linkages into IPA strategies, using digital partnership platforms, events and matchmaking mechanisms to connect investors, firms and training institutions, and strengthen the broader digital ecosystem. 5. Include targeted IIA clauses on digital skills training, inclusion, SME support and digital infrastructure development.
	Other aspects of international investment agreements for sustainable development	*Strengthen IIAs' impact on sustainable investment* 1. Clarify the definitions of "investment" and "investors" and refine key protection standards provisions, particularly in relation to dispute resolution. 2. Ensure policy space for governments through carefully designed safeguards that account for the unique characteristics of sectors relevant to the digital economy. *Encourage technology transfer on mutually agreed terms through IIAs* 3. Include provisions that promote transfer of the technology needed for several key policy objectives, including digital transformation. 4. Consider complementing these provisions with adequate exceptions in clauses that prohibit the imposition of performance requirements relating to technology transfer, labour turnover and vertical linkages. 5. Consider using explicit and implicit flexibilities within international IP commitments that can allow economies to adapt international IP protection rules to their level of development. *Facilitate participation by developing countries in global digital rulemaking* 6. Strengthen capacity-building and technical assistance to align provisions on digital investment with developmental objectives. 7. Harness IIAs to strengthen development-oriented provisions relating to investment in the digital economy

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