

Summary

Exponential growth in new technologies and data flows are spearheading a digital transformation of the global economy, bringing major benefits as well as challenges for Commonwealth countries. Advances in digital technologies are already influencing the nature, scale, scope and speed of production and other economic activities. The expansion of the digital economy, on the back of the exponential growth of the internet and advances in information technology and massive growth in flows of digital data, is opening up new opportunities for digital trade and modifying the means of commerce in the twenty-first century. Digitalisation is an important conduit to economic growth and international trade.

In recent years, the digital economy has experienced unprecedented growth, with the internet becoming accessible to more than half of the global population in 2018 (ITU 2018) – a remarkable increase from the less than 10 per cent penetration rate in 2000 (World Development Indicators 2019). The value of business-to-consumer (B2C) online transactions has also tripled from 0.5 per cent of global gross domestic product (GDP) in 2010 to 1.5 per cent in 2017 (World Investment Report 2017). Another indicator of rising digitalisation is the increase in information and communication technology (ICT) trade; globally, ICT services grew by an impressive 40 per cent from 2010–2015 (IER 2017).

Chapter 1 maps trade trends in the digital economy in the Commonwealth. **It finds that while the contribution of ICT services to the Commonwealth's total services trade and GDP has been gradually increasing since 2012, the Commonwealth seems to be losing out on high-technology manufacturing.** The share of the Commonwealth in world high-technology exports declined from 19 per cent to 11 per cent in the period 2000–2017 (WITS 2019). In the last five years (2013–2017), manufacturing exports have been dominated by resource-based exports (equivalent to 5.3% of the Commonwealth's GDP), followed

by medium-technology exports (4%), and primary product exports (3.5%) in the Commonwealth.

Moreover, just six Commonwealth countries make up 98.8 per cent of the Commonwealth's total high-tech exports as of 2017 (WITS 2019).

The disparity in ICT trade participation among Commonwealth countries is also evident by income and size, with low-income countries (LICs) and small states contributing minimally to overall Commonwealth ICT trade.

Beyond ICT services, **the share of digitally deliverable export services (DDES)** – such as, insurance and financial services, intellectual property charges, telecommunications, computer and information, other business and audio-visual and related services (UNCTAD 2019) – **has increased in high-income as well as upper- and lower-middle-income Commonwealth countries, but decreased in small states and low-income countries.** Among Commonwealth countries, the share of DDES in total trade in services varies from more than 70 per cent in the United Kingdom (UK), India and Ghana to less than 10 per cent in some small states.

Chapter 2 discusses the new opportunities that digitalisation brings for Commonwealth countries through lowering the cost of, and facilitating, trade, reducing market entry barriers (including non-tariff barriers), enabling higher market access through e-commerce, supporting efficiency improvements, enabling movement into higher value-added products in the agriculture and services sectors, and raising overall export competitiveness. **If all Commonwealth countries achieve a minimum level of broadband penetration of 50 per cent (the world average), then Commonwealth GDP is expected to rise by between US\$74 billion and \$263 billion (Commonwealth Secretariat 2018).** In line with this, Chapter 2 finds that **productivity in the agricultural, industrial and service sectors is positively associated with internet penetration in the Commonwealth.**

However, the discussion of new opportunities through digitalisation needs to take into account the challenges brought about by the digital divide. While digital technologies present new opportunities to expand trade, a persistent digital divide between developing Commonwealth countries and the rest of the world can increase re-shoring and limit future offshoring of digitally advanced production to developing countries. **The average share of manufacturing value-added has been gradually declining across all Commonwealth regions in the period 2000–2018.** In the face of these challenges to industrialisation, countries may look towards a more service-led development model. International Labour Organization (ILO) data shows that the average employment share of services – both public administrative services and trade, transportation and accommodation – has increased in the period 2006–2018 across most Commonwealth countries, highlighting the growing importance of services.

Knowledge-intensive services and digital trade can support development strategies for Commonwealth countries, particularly in small states, which cannot rely on economies of scale in agriculture or manufacturing production. However, new opportunities brought about by e-commerce are only being realised by a few Commonwealth countries. **In 2015, B2C e-commerce in the Commonwealth generated roughly US\$354 billion in sales, representing 3.5 per cent of total Commonwealth GDP, but only six Commonwealth countries – the UK, Canada, Australia, India, Singapore and Malaysia – accounted for 85 per cent of all B2C e-commerce sales.** These countries have active legislation in four key categories relevant to data regulation: a) presence of a legal framework for electronic transactions/e-signature; b) a legal framework for data protection/privacy online; c) a legal framework for consumer protection when purchasing online; and d) a legal framework for cyber-crime prevention. The majority of the Commonwealth countries with legislation in only one or none of these areas are African countries (such as Mozambique, Lesotho, Nigeria, Tanzania and Malawi) and small states.

Chapter 3 examines how the increasing digitalisation and growing importance of services is changing the landscape of labour markets and skills in Commonwealth countries. **Productivity across sectors is found to be higher for Commonwealth countries in which both digitalisation (measured as internet penetration) and skills development (measured as secondary school enrolment) is above the median levels,** followed by countries with high digitalisation and low skills, low digitalisation and high skills and, lastly, low digitalisation and low skills. **New empirical evidence presented in this study for a sample of low- and middle-income countries shows that a doubling of the internet penetration rate, on average, increases manufacturing labour productivity by 5.3 per cent, but the impact is lower for Commonwealth countries compared to their non-Commonwealth counterparts, possibly indicating a lack of overall digital capacity in Commonwealth low- and middle-income countries in areas such as digital infrastructure, skills and general infrastructure.**

Furthermore, **a 1 per cent increase in skills, measured using a human capital index, can increase the impact of internet penetration on manufacturing labour productivity in the Commonwealth by roughly 7.4 per cent, on average.**

How do Commonwealth countries fare on future-relevant skills? The performance of Commonwealth countries is examined on five categories of skills relevant for the digital economy: a) *basic ICT skills*; b) *information management skills*; c) *ICT for communication and collaboration*; d) *ICT for content creation and commerce*; and e) *ICT for analytical thinking*. **In terms of basic digital skills and information management skills, the Commonwealth is found to be lagging behind –** for instance, compared to the global average of 40 per cent, only 27.8 per cent of the population in Commonwealth countries is using the internet to get information about general government organisations (ITU 2019). Even within the Commonwealth, there is a significant gap: more than 80 per cent of the population in the UK is using the internet to acquire information about goods or

services compared to just 14 per cent in Bangladesh (ibid). **The Commonwealth is faring better in terms of ICT skills for communication and collaboration, with the Commonwealth average (21.4%) exceeding the global average (17%) in terms of using the internet for finding/applying for a job.** However, there is significant variation within Commonwealth countries; for instance, only 2 per cent of the Kenyan population uses the internet to find, or apply for, a job (ibid).

The digital gap within the Commonwealth is also present in the case of ICT skills for innovation or commerce (ITU 2018). More than 70 per cent of the population in the UK and Australia is using the internet for purchasing goods and services compared to less than 12 per cent in Bangladesh, Botswana and Jamaica. In terms of ICT skills for analytical thinking, while 8.5 per cent of the population in the UK is using the internet for writing a computer program using a specialised computer programming language, just 4.8 per cent of the population in Botswana and 1.5 per cent in Pakistan are doing so (ibid).

Chapter 4 takes a deep dive into levels of development of digital infrastructure and the 'smart economy' in the Commonwealth. Digital infrastructure is categorised into three types: *basic* digital infrastructure, which encompasses internet infrastructure, cable and mobile networks; *intermediate* digital infrastructure, which captures the overall quality and reliability of internet infrastructure; and *advanced* digital infrastructure, referring to the use of digital technologies such as robotics and e-commerce within production systems. Additionally, soft digital infrastructure also complements the hard infrastructure. Education, training and capacity building are required to utilise digital infrastructure effectively.

In both basic and intermediate digital infrastructure indicators, the Commonwealth performance is weaker than non-Commonwealth countries. Furthermore, there is a significant digital divide within the Commonwealth. On average, 85 per cent of the population in high-income Commonwealth countries has access to the internet, compared to just 18 per cent in low-income

countries in the Commonwealth. Only 5 to 10 per cent of households in Commonwealth low-income countries have access to computers and the internet, while in the small states of Kiribati, Malawi, Sierra Leone, Solomon Islands and Papua New Guinea, less than 15 per cent of the population is connected to the internet. The lower access to basic technologies in the Commonwealth's LICs may be explained by the higher cost of the internet – it costs roughly US\$66 to acquire a fixed broadband internet connection in these economies, compared to the Commonwealth average of US\$39 (ITU 2018).

In terms of international bandwidth per internet user, a proxy for intermediate digital infrastructure, the digital divide within the Commonwealth has increased in the period 2010–2017. On average, 63 per cent of the LIC population is covered by at least a 3G network, but the international bandwidth per internet user is roughly 40 times lower compared to Commonwealth high-income countries (HICs). Unsurprisingly, **the digital divide translates onto advanced digital infrastructure: 20 out of 31 Commonwealth countries fell below the world average score on UNCTAD's Business-to-Consumer E-Commerce Index in 2016** (UNCTAD 2018). Of these 20 Commonwealth countries, 15 are in Africa and 15 are categorised as LICs or lower middle-income countries (LMICs).

Various indicators are used to capture aspects of the 'smart' economy in Commonwealth countries, including expenditure on research and development (R&D), availability of venture capital, patent penetration and e-governance. **Commonwealth HICs (Singapore, Australia, the UK, Canada and New Zealand) and Malaysia (UMIC) continue to be the highest R&D spenders since 2009.** In terms of ICT patent penetration, Singapore ranks at the top, with 60 ICT-related patent applications filed under the Patent Cooperation Treaty (PCT) per one million people, followed by Canada, the UK, Australia and New Zealand. In comparison, among 33 Commonwealth countries with 2016 data, 10 countries have less than one ICT patent application per one million people, and 13 countries reported zero patent penetration in 2016.

While the Commonwealth performs on par with the world and non-Commonwealth country averages in e-governance, discrepancies exist among Commonwealth countries. LICs, countries in Africa and Commonwealth small states rank lower on e-governance indices. **Except for postal service penetration and customs export clearance, Commonwealth small states perform below the global average across all indicators measuring trade and logistics performance.** Of the 30 Commonwealth small states in the sample, 20 are located in either the Caribbean or the Pacific, reinforcing the reality that logistics and trade facilitation performance is especially challenging for small and remote Commonwealth countries.

Chapter 5 focuses on the role that regulatory co-operation can play in supporting the development of the digital economy within Commonwealth member countries. As per the ICT Regulatory Tracker, Malta, the UK, and Australia rank in the top 10 out of 193 countries in terms of ICT regulatory preparedness. Within the Commonwealth, small states fare least favourably in terms of ICT regulations, and their global rank is low, driven by low scoring performance in the regulatory authority and regulatory regime dimensions. The Chapter further identifies the different approaches undertaken by some Commonwealth countries in terms of adapting taxation and competition policies in the digital economy. **It is crucial that competition laws in the Commonwealth address standard competition issues of anti-competitive agreements, cartels, abuse of dominance, and merger control, but also extend to competition challenges within the context of an increasingly digitalised economy. Furthermore, Commonwealth governments should also consider whether current intellectual property rights frameworks strike the right balance between incentivising innovation and promoting competition.**

Chapter 6 sheds light on the scope for inclusive development in the digital economy and how new opportunities for small states, women and youth can be realised by managing digital transformation in a

more inclusive manner. To realise the opportunities of digitalisation at scale, harmonisation of ICT may be key for Commonwealth countries, particularly the small states. However, leveraging e-commerce is constrained by the absence of a harmonised regulatory framework, high cost of infrastructure such as postal competence and port logistics, limited financial instruments, lack of stakeholder buy-in and poorer overall ease of doing business in some small states.

For many developing Commonwealth members, including small states, youth unemployment constitutes another serious and growing challenge. **The untapped potential of youth in Commonwealth countries is reflected in the share of youths not in employment, education or training (the NEET rate), which varies across Commonwealth members, with small states having a higher untapped potential for youths.** Trinidad and Tobago has a NEET rate of 52.1 per cent, followed by Kiribati (46.9%), Botswana and Eswatini (25.5%) and The Gambia (34%).

The gender digital divide in the Commonwealth also presents a significant challenge. Firstly, there is less parity in the use of the internet across developing countries, compared to developed Commonwealth countries such as Australia and the UK. Internet usage rates show male bias in developing countries such as Botswana, Cameroon, Malawi, Nigeria and Zambia, indicating marginalisation of women in the digital age. For countries such as Fiji, Malawi and Eswatini, the time it takes for females to start a business is also high in comparison to countries such as Australia and The Gambia, reflecting the trade facilitation constraints faced by women. Secondly, it is observed that the proportion of the male population with basic information management skills – i.e. for copying or moving a file or folder and using basic arithmetic formulae in a spreadsheet – is higher than the equivalent share of the female population in the majority of the Commonwealth countries examined. In the case of advanced digital skills for ICT programming, apart from Brunei Darussalam, other Commonwealth countries such as the UK,

Singapore, Malta, Malaysia and Botswana have gender disparities in favour of males.

In terms of sustainable development, **the chapter outlines a number of successful projects initiated in Commonwealth countries where digital technologies, particularly smart agriculture and smart fisheries, are being used to boost the green and blue economies respectively.** Nevertheless, there still remain major challenges in the adoption of technology in agriculture and fisheries for Commonwealth members, including: lack of capital in micro, small and medium-sized enterprises for adopting these technologies; lack of capacity, including in relation to human capital and know-how among farmers to utilise agricultural technology; and the absence of other key enablers for the use of agricultural technologies, such as access to the internet and broadband connectivity.

In the face of these challenges, Chapter 7 identifies possible policy initiatives for the Commonwealth to foster the digital economy, with a focus on intra-Commonwealth efforts. These initiatives are:

1. **Facilitating best practices on internet and broadband digital infrastructure**, including through increasing internet affordability, targeting public-access solutions and digital infrastructure sharing. In this regard, information sharing and the exchange of best practice in digital infrastructure development within the Commonwealth can be particularly key for LICs and small states to enhance their digital infrastructure.
2. **Promoting e-commerce and investments in a data-driven economy to take advantage of the next wave of manufacturing and services**, including through the formulation of a supportive legal and regulatory framework on 'data infrastructure'. In addition to the development of national data policies, devising national e-commerce policies, alongside efforts to creating an enabling environment for digital trade, that feed into e-commerce strategies within the Commonwealth, may be effective in closing the digital divide.
3. **Exploring the use of smart agriculture and fisheries technologies** such as blockchain in product traceability, smart phones for extension services, e-payment systems for online markets and sales, and connecting to suppliers and markets. Technology transfer and skills development in the use of such technology should be prioritised in Commonwealth countries. Such assistance can be provided through Commonwealth partnerships with member countries or bilateral donors.
4. **Sharing experience on e-governance and smart cities**: Commonwealth initiatives by small states, coupled with knowledge sharing on both a north-south and south-south basis, by leading digital Commonwealth states, can help foster development. The sharing of lessons and best practices in e-governance can further help the process.
5. **Promoting an enabling policy and regulatory regime** through pro-active policies at the national level. These policies should aim to facilitate access to technology and foreign direct investment for positive spill-overs. Care should be taken, through international regulatory co-operation and the promotion of Good Regulatory Practices, to ensure the regulatory environment in Commonwealth countries promotes, rather than hinders, digital development.
6. **Promoting digital skills development within the Commonwealth**. To build future-relevant skills, Commonwealth countries need to boost the development of digital and soft skills through: more STEM (science, technology, engineering, mathematics)-focused technical and vocational educational training (TVET); provision of workplace learning opportunities by the private sector to enhance long-term employment prospects; and expanding digital skills training in non-formal TVET for out-of-school youth and marginalised sections of society. Training capacity needs to be leveraged through better coordination across existing players and linkages with national accreditation systems, which

continue to present key challenges in many Commonwealth Asian and African countries.

7. **Deepening co-operation for inclusive and sustainable development.** Efforts need to continue, through the Commonwealth Connectivity Agenda and other Commonwealth-wide initiatives and platforms, to mainstream gender, youth, green and blue economy considerations into Commonwealth co-operation. To assess the magnitude and impact of digital inclusivity for women, the Commonwealth needs to commission studies to

collect primary data on gender gaps in different regions, develop an Economic Empowerment Index and determine the gender parity within countries and across Commonwealth regions. Boosting opportunities for youth entrepreneurship will require addressing key challenges related to a limited regulatory environment in small states; poor coordination between national and sector-based policies promoting youth entrepreneurship; and data gaps on youth unemployment and youth entrepreneurship.