DEVELOPING DIGITAL ECONOMIES – POLICY RECOMMENDATIONS

07

This chapter provides policy recommendations for harnessing the benefits and addressing the challenges associated with digital transformation in the Commonwealth. Informed by the digital co-operation agenda laid out by UNCTAD (2018) and Banga and te Velde (2018), the chapter identifies strategic actions for Commonwealth countries to facilitate development in the digital age. It particularly explores the scope of intra-Commonwealth co-operation.

7.1 Facilitating best practices on internet and broadband digital infrastructure

Chapter 1 highlighted the significant digital divide that exists within the Commonwealth: the average internet penetration in the Commonwealth is 52 per cent (unweighted), with the average internet penetration in low-income Commonwealth being just 18 per cent. Moreover, the digital divide in terms of international bandwidth drastically increased between 2010 and 2017, with international bandwidth being roughly 40 times lower in low-income Commonwealth compared to high-income Commonwealth countries in 2017. Similarly, the proportion of fixed broadband subscriptions per 100 people has increased from 19 per cent to 27 per cent in high-income Commonwealth countries, but with negligible increases in low-income countries.

Developing Commonwealth countries not only need to focus on the quantity of digital infrastructure but also need to put in place policies increasing internet affordability and accessibility, such as those targeting public-access solutions, including free or subsidised access to public/ open areas. This is crucial to bridge digital divides within and between Commonwealth countries. Cross-country collaboration can help. Efforts should continue to support sustainable investment in digital infrastructure in the Commonwealth. Commonwealth members should continue to engage on how to develop digital infrastructure and share experiences, case studies and best practices. This should extend to how countries can improve access to digital infrastructure to bridge digital divides and promote inclusive growth.

Such information sharing and the exchange of best practice in digital infrastructure development within the Commonwealth can be especially beneficial for LICs and small states to enhance their digital infrastructure. Some countries grant mobile virtual network operator (MVNO) licenses to telecom companies. Such MVNOs do not have their own infrastructure, but rather practice 'infrastructure sharing' with already established telecom providers, who have excess network capacity. Each MVNO then sells services, such as data for internet, at its own price. A good example of collaboration in digital infrastructure within the Commonwealth is between India and Kenya. Kenya has granted MVNO licenses to three companies which offer mobile money and data services (The *Kenya Wall Street 2018),* with all three MVNOs depending on the Indian telecom company Airtel's infrastructure.

7.2 Promoting e-commerce and investments in a data-driven economy

Chapter 2 discussed the potential of e-commerce as a new development pathway for developing countries in the Commonwealth, and particularly for the Commonwealth's small state members. However, it also highlighted the current gap in e-commerce activity within the Commonwealth: while B2C e-commerce in the Commonwealth generates roughly US$354 billion in sales annually, representing 3.5 per cent of total Commonwealth GDP, only six Commonwealth countries – the UK, Canada, Australia, India, Singapore and Malaysia – account for 85 per cent of B2C e-commerce sales. Many developing Commonwealth countries, as well as LDCs, are unable to gain much from these new emerging trade portals due to a lack of ICT infrastructure, poor postal and addressing systems, low digital capacities, and a lack of e-commerce-related regulations and infrastructure.

There is a significant digital divide in terms of development of 'data infrastructure' in the Commonwealth – broadly defined as the ability to collect, manage, process and use data. Chapter 2 finds that currently within the Commonwealth only Australia, Canada, New Zealand and the UK have advanced data protection regimes in place, in line with the OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (OECD 2019). These countries have active data legislation across all four categories: a) the 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 only one piece of legislation in this framework, or no relevant legislation whatsoever, are African member states (such as Mozambique, Lesotho, Nigeria, Tanzania and Malawi) and small states such as PNG, Solomon Islands and Vanuatu.

The development of national e-commerce policies in developing Commonwealth countries that feed into broader e-commerce strategies, alongside efforts to create an enabling environment for digital trade in the Commonwealth, may be effective in closing the digital divide. National e-commerce strategies aim at developing the e-commerce sector in a country by providing the required infrastructure, developing complementary skills and putting in place rules and regulations governing e-commerce.

Promoting e-commerce, and ensuring all Commonwealth countries can engage effectively in e-commerce and digital trade, will require enabling digital infrastructure (e.g. a system of digital payments across borders, digital identity). However, UNCTAD (2018) warns that developing digital infrastructure to facilitate e-commerce can be difficult. Success in widespread use of digital payments requires a strong regulatory framework to supervise commercial banks, financial institutions and other e-money institutions and rules around consumer data protection and competition issues, as well as legal provisions around payment clearing and settlement systems, making international co-operation in digital payments challenging.

7.3 Exploring the use of smart agriculture and fisheries technologies

The Commonwealth can explore the use of smart agriculture and fisheries technologies, such as block chains for product traceability, smart phones for extension services, e-payment systems for online markets and sales, and connecting suppliers and markets. In the fisheries sector, the use of digital technologies such as monitoring control and surveillance, e-log books and electronic observation systems will aid in combatting IUU fishing and also enhance sustainability by preventing overexploitation of fisheries resources. For the Commonwealth, technology transfer and skills development in smart agriculture and fisheries should be prioritised. Such assistance can be provided through various Commonwealth partnerships with member countries or through bilateral donors.

7.4 Sharing experience on e-governance and smart cities within the Commonwealth

Chapter 4 shows that within the Commonwealth, low-income countries and small states lag behind in terms of e-governance and e-participation. Rwanda was found to have a conducive regulatory environment and a high level of digital usage within government, comparable to Australia. However, limited digital infrastructure coupled with low levels of digital penetration – a common challenge among Commonwealth LICs – restricts the economic gains from digitalisation in Rwanda. Furthermore, logistics and trade facilitation performance are especially challenging for relatively small and remote Commonwealth countries.

Exchanging knowledge and experience on digital policies and regulations across the Commonwealth, including in relation to e-government, represents a useful starting point. This can help to facilitate the identification of common approaches and best practice policies and regulations to support digitalisation.

India, in particular, can share its experiences and lessons from launching initiatives under the National e-Governance Plan (Government of India 2018). This is a progressive plan which promotes e-governance in a holistic manner. There are various policy initiatives and projects to develop core and supporting infrastructure. The major core infrastructure components are State Data Centres, State Wide Area Networks, Common Services Centres and middleware gateways, i.e. the National e-Governance Service Delivery Gateway, State e-Governance Service Delivery Gateway, and the Mobile e-Governance Service Delivery Gateway. Important support components include core policies and guidelines on security, human resources, citizen engagement and social media, as well as standards in areas related to metadata and interoperability. New initiatives include G-I cloud, an initiative which will ensure the benefits of cloud computing for e-governance projects. These initiatives involve sustained efforts at multiple levels to improve the delivery of public services to citizens and simplify the process of accessing them.

E-governance has also played an important role in building digital trust in Kenya (AfDB, 2013). In 2007, the Kenyan government embarked on a connectivity and e-services delivery project supported by the World Bank under the Kenya Transparency Communications and Infrastructure Project. The goal was to boost ICT connectivity in Kenya, improve service delivery to citizens, increase the type and quality of information and enhance the government's ability to ensure transparency and support anti-corruption efforts. The targeted areas include support to pension administration, drivers licence registration, land information and registration systems, a high court registrar, public servant's wealth declaration, company registration and improvements in e-procurement. To make the government a leader in ICT applications, e-applications and e-content development, and aggressive promotion of the use of the internet in learning, social and government institutions in all levels of service delivery in the country have been initiated. This has seen digitisation of several government registries and records and the introduction of mobile services to citizens.

In terms of smart transport, the UK has made significant strides. The London Transport System, for instance, exemplifies integrated digital payments through bank cards, mobile phones and Oyster cards for train and bus fares. Among developing countries in the Commonwealth, smart city initiatives are being undertaken by India and Malaysia. These member states can share their experiences with other developing countries as well as provide their expertise to jointly build smart cities in other developing countries. Commonwealth members should continue to discuss ways to encourage and upgrade existing infrastructure using smart technologies to respond to their current and future demands.

7.5 Promoting an enabling policy and regulatory regime

The Commonwealth is a major contributor to science and innovation: it is home to 12 per cent of the world's researchers and accounts for around 10 per cent of global research and development expenditure (Hogben 2018). At the national level, developing Commonwealth countries need to put in place pro-active innovation policies with the aim of facilitating technology transfer and FDI for positive spillovers (Mayer 2018; De Marchi et al. 2017). Singapore, for instance, has made significant progress in developing its science, technology, and innovation capability in the more than 50 years since political independence in 1965. Initially, this effort was based on an evolving national system that emphasised attracting and leveraging multinational companies to transfer increasingly advanced technological operations to

Singapore and developing infrastructure and human resources to absorb and exploit new technologies rapidly. In the 1990s, Singapore started to shift towards a more balanced approach, with increasing emphasis on developing its indigenous R&D and innovation capability. The government started to invest in R&D to develop capabilities, infrastructure, and talent, with 'Research, Innovation, and Enterprise' becoming the theme of Singapore's national system to support the continuum from research to value capture (Lim 2018).

Intellectual property is of key importance to innovation in the digital age. Industrial design rights may cover appearance, but they usually do not extend to functionality and ease of use (WIPO 2017).[1] Moreover, 3D-equipment in the digital age can scan a non-patented physical object and create a computer aided design (CAD) file that will reproduce the object (Osborn 2016). The CAD file can subsequently be used as a starting point for creating objects that have new functionalities or other novel characteristics. Given that digitalisation may bring about entirely new products, as well as enable new functionalities and ways of use, it would appear that existing IPR protection leaves scope for active design-oriented innovation policy in developing countries (Mayer 2018). Moving towards a digital world may also broaden the scope for developing-country firms to engage in cross-licensing arrangements with developed-country firms (ibid). Laws on the use of data and source-code sharing are increasingly integral to digital innovation. Within the domestic economy, it is important to encourage and support domestic open-source code sharing that will allow innovating firms in Commonwealth countries to push forward their inventions into the market, enabling faster roll-out and cost-savings. This can create a 'ripple effect' for innovation and foster spillover effects in other domestic firms and skills development in effectively using these open-source platforms for innovation. Important lessons can be learnt from Australia's experience. The Austrialian Government's Open Source Software Policy (2011) requires all agencies to consider open source software in relation to any approach to market to acquire software. This includes approaches to market for new services but only where the approach specifically details the software (AGIMO 2013).

While it is important for developing countries to attract foreign investment in ICT/IT services, and R&D, it also important to enable these foreign investments to facilitate positive technology and skills spillovers to the host firm. An important enabler of China's growth in the digital economy, for instance, has been requirements for technology transfer on international firms in exchange for market access, including in some cases the transfer of source-code as a condition to sell to the Chinese government or to gain relevant licenses to trade in the country. For small states and LDCs in the Commonwealth that do not have enough market power to negotiate, Commonwealth arrangements can help to foster technology transfers and innovations, if they allow source-code sharing and encourage tailoring of the digital technologies from open-source codes to specific country needs and requirements (UNCTAD 2018).

Effective public–private collaborations at the national level in Commonwealth countries are needed to support the creation of technology and innovation hubs. It is important to focus support on the development of hubs that can provide a manufacturing eco-system in the form of technical support (internet and ICT services), manufacturing maker-space (manufacturing equipment and shared spaces), skills development (training in hardware engineering, coding, digital fabrication, IoT and blockchains), while at the same time acting as incubators (providing support for product formation, conceptualisation of ideas, business development, networking and funding). It is also crucial to ensure that such hubs do not operate in silos, but rather are integrated and linked with the rest of the manufacturing sector. Good examples of government initiatives include susAso Villa Demo Day in Nigeria, while examples of corporate initiatives include EcoBank and GE Garage, both of whom fund and integrate innovations into the economy.

Private sector investment therefore needs to be directed towards well-integrated hubs, with telecom providers offering subsidised internet and digital services to these hubs. More generally, 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, innovation that supports digital development. Commonwealth governments could offer tax exemptions and incentives for R&D with reduced patent costs, as well as simplified regulatory practices for establishing a business and for obtaining licences. For example, policies launched by the Indian government under Startup India, a flagship initiative under the wider Digital India programme, can provide useful insights into how start-ups, particularly digital start-ups, can be promoted. The Startup India initiative offers tax exemptions, exemptions from inspection requirements (such as those related to the labour environment), roughly 80 per cent reductions in patent costs, easier regulations for businesses and procedures for licenses, easier exit (within 90 days) and funding support. State support to venture funds and incubators is also increasing. For instance, state support in Hyderabad to T-Hub or the Telangana Hub in India anchors the entire Hyderabad start-up eco-system.

A number of initiatives are already in place between Commonwealth members aimed at improving the innovative capacity of developing countries. For instance, Nauru partnered with Australia to improve education by 2015 (Government of Australia 2008). Similarly, Newton Bhabha Fund is a joint UK–India flagship programme supporting UK and Indian scientific research that provides solutions to challenges affecting India's economic development and social welfare (UK India Business Council 2018). In India, the fund is worth £50 million and is championed by both the UK and Indian governments through a ministerial agreement that has identified three priority areas: sustainable cities and rapid urbanisation; public health and well-being; and an energy-water-food nexus, together with capabilities in high-value manufacturing and Big Data. Other examples of UK–India innovation collaboration relevant to the digital economy include operations of the UK company Renishaw, which has built on its already strong presence in India by establishing an additive manufacturing solution centre that allows local Indian companies to access revolutionary 3D-printing equipment without high levels of capital investment. Moreover, Renishaw is adopting an open-source approach to collaborations and is in discussions with a number of Indian Institutes of Technology (IITs) to generate ideas regarding 3D-printing product development and manufacturing. Another example is that of IoT, in which BT is collaborating with the Indian Institute of Technology Delhi and Indraprastha Institute of Information Technology, Delhi to develop new uses of Quantum Key Distribution to identify security breaches in virtual networks.

At a Commonwealth-wide level, the Commonwealth Innovation Hub focuses on displaying and promoting innovation across the Commonwealth (Commonwealth Secretariat 2018). The Innovation Hub offers data and data analysis tools for evidence-based policy and innovative solutions; acts as a laboratory for new ideas, concepts and pilot projects; and works with partners to make innovation a key engine of sustainable development.

7.6 Promoting digital skills development within the Commonwealth

Chapter 3 showed that there is huge variation in the skills-readiness of Commonwealth countries to adapt to changes in the digital economy. In terms of basic digital skills, there are major divides across the Commonwealth: 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. The Commonwealth is faring better in the case of ICT skills for communication and collaboration, with the Commonwealth average exceeding the global average in terms of participating in social networks and using the internet for finding/

applying for a job. However, there is wide variation in country performance across indicators. While 74 per cent of the population in Kenya uses the internet to engage in social networks, only 2 per cent of the population is using the internet for finding or applying for a job. The digital gap within the Commonwealth is also re-enforced in the case of ICT skills for innovation or commerce: more than 70 per cent of the population in the UK and Australia are using the internet for purchasing goods and services, compared to less than 12 per cent in Bangladesh, Botswana and Jamaica. In terms of advanced digital skills, Chapter 3 finds that the share of the population in the UK using the internet for writing a computer program using a specialised computer programming language (8.5%), exceeds the equivalent shares in Botswana (4.8%) and Pakistan (1.5%) by notable margins.

To build future-relevant skills, Commonwealth countries need to boost the development of digital and soft skills under more STEM-focused TVET. In the realm of formal education and TVET, there is an urgent need to incorporate digital literacy and basic ICT skills at the primary and lower-secondary level of education. Beyond increasing access to TVET and changes in the curricula, effective and quality provision of digital and soft skills training may require continuous professional development of TVET trainers, the availability of resources to meet the relatively high cost of teaching STEM, building ICT capacity in education and teacher training, investment into digital infrastructure, and linkages with a dynamic private sector to align skills taught with industry needs. There is also a need to establish standard-setting bodies which can grade digital and soft skills as per different types and levels; define them in terms of outcomes achieved through both formal and non-formal TVET; provide skills certification that is recognised by employers and higher education institutions; and recognise prior learning in digital and soft skills (Banga and te Velde 2019). Efforts should continue within the Commonwealth to deepen understanding and develop the evidence base on policies that enable digital skills development.

Important lessons can be learnt from India's targeting of skills development. In 2015, the Indian National Skill Development Policy was set up to improve societal attitudes towards TVET through awareness campaigns and the introduction of certificates in education. Special focus is also being given to assessing and certifying prior learning and experience, along with short-term training for the unemployed or school/ college dropouts.

However, limitations in budgetary resources may necessitate trade-offs in the prioritisation of digital and soft skills in Commonwealth countries, as well as in the type of digital skills prioritised and their intended recipients. For instance, some countries that are at more advanced stages of digitalisation may focus policy interventions in reorienting secondary and tertiary education towards a more private-sector-led dynamic TVET programme. These countries may prioritise the development of intermediate- (such as, data extraction and analytics) to-advanced digital skills (computer programming) in order to realise the economic value of 'data' to upgrade into higher value-added industries with larger incumbent rivals. Other Commonwealth countries such as Pakistan, where large portions of the population lack basic ICT skills, may focus on strengthening basic digital literacy, while others may take a more hands-off approach by supporting private sector firms in providing skills training.

In addition to the above-mentioned digital co-operation agenda, sharing of best practices within the Commonwealth in dealing with other issues of the digital economy is also important. For instance, while digital technologies and apps can reduce labour informality in many developing Commonwealth countries by connecting labour demand and supply – for instance, Nigeria-based Jumia employs 3,000 people across Africa, but has signed up 100,000 commission-based affiliates who help customers make orders through the platforms – there is rising precarity of work on these online platforms, suggesting re-thinking of social protection laws is required. Similarly, sharing of best practices and laws on competition and taxation

policies in the digital age and innovative financing mechanisms can help developing countries in shaping their policies to maximise the benefits from the digital economy. Digital technologies can also be used to further skills development in the Commonwealth. For instance, the Commonwealth of Learning (CoL) – an intergovernmental organisation established by Commonwealth Heads of Governments to encourage the development and sharing of open learning and distance education knowledge, resources and technologies – can offer online digital skills development courses and training classes to facilitate e-leaning, which will be particularly useful for small states given their remoteness.

7.7 Deepening co-operation for inclusive and sustainable development

Work must continue, through the CCA and other Commonwealth initiatives, to mainstream gender, youth, green and blue economy considerations into Commonwealth co-operation. In the context of inclusive development and digitalization within the Commonwealth, gender disparities exist in favour of males over females in relation to access to, and use of, technology (including the internet) and associated training for the digital era. The gender divide exists at different levels and includes both developed and developing countries in the Commonwealth. While there are limited available data on this issue, it is nevertheless evident that digital empowerment for women and girls in the Commonwealth will result in positive economic empowerment by way of greater engagement of women in online activities such as e-commerce and MSMEs contributing to socio-economic development. Increases in digital skills for women and girls, through education initiatives, can support efforts to close the digital gender gap. In this regard, to further 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.

A strong focus on the green and blue economies is required in the context of sustainable development and digitalisation. Both of these sectors are important for the social and economic development of Commonwealth countries, especially small states. The use of digital technologies can raise yields and productivity and enhance efficiency in these sectors, while also supporting sustainable development initiatives.

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