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Digital Trade for Post-COVID Recovery and Resilience in the Commonwealth

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Abstract

Digital trade is increasingly touted as a key pathway for mitigating economic losses from COVID-19. On the one hand, the pandemic has accelerated the scope of a digital-led recovery; on the other, the existing digital divide across countries has been exacerbated by a sudden and increased reliance on digital technologies. This paper aims to deepen the understanding of the contribution digital trade can make in supporting a post-COVID economic recovery in the Commonwealth, and to situate this within the context of the diversity of challenges involved in growing digital trade and expanding the digital economy in Commonwealth countries. Analysis is presented for (i) trade in information and communications technology (ICT) and digital goods; (ii) trade in ICT and ICT-enabled services; and (iii) e-commerce.

JEL Classifications: F10, I15, O33

Keywords: digital trade, COVID-19, economic recovery, information and communications technology, digital goods, e-commerce

Contents

Abbreviations and Acronyms

B2B	business-to-business
B2C	business-to-consumer
B2G	business-to-government
BaTIS	Balanced Trade in Services
C2C	consumer-to-consumer
CIO	Chief Information Officer
CW	Commonwealth
DDS	digitally deliverable services
EABC	East African Business Council
ET	electronically transmitted
EU	European Union
GDP	gross domestic product
ICT	information and communication technology
IDC	International Data Corporation
IFC	International Finance Corporation
IMF	International Monetary Fund
IoT	Internet of Things
IT	information technology
ITA	Information Technology Agreement
ITC	International Trade Centre
ITU	International Telecommunication Union
LDC	least developed country
KAM	Kenya Association of Manufacturing
MSMEs	micro, small and medium enterprises
NPKI	National Public Key Infrastructure
NRI	Network Readiness Index
OECD	Organisation for Economic Co-operation and Development
SIDS	small island developing states
SS	small states
TisMOS	Trade in Services by Mode of Supply
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
WEF	World Economic Forum
WITS	World Integrated Trade Solutions
WTO	World Trade Organization

Executive summary

COVID-19, ICT goods trade and the Commonwealth

Commonwealth countries accounted for 12 per cent of global information and communication technology (ICT) goods trade in 2019. The share of CW Asia rose in the period 2009–2019, driven primarily by Singapore and Malaysia, while that of CW Africa declined, possibly because of a significant decline in ICT goods trade by South Africa, which accounts for roughly 70 per cent of ICT goods trade in the region. The share of intra-CW trade in total Commonwealth ICT goods trade is only 13 per cent, lower than the share of intra-CW trade in Commonwealth total goods trade (15.6 per cent). Just six Commonwealth countries account for 98.5 per cent of intra-CW ICT goods exports, driven by Singapore (48.04 per cent of intra-CW ICT goods exports), Malaysia (41.27 per cent), the UK (3.24 per cent), Australia (2.74 per cent), India (1.45 per cent) and South Africa (1.3 per cent). Annual intra-CW trade (exports plus imports) in electronically transmitted (ET) products (e.g. software, e-books, videogames) is worth more than US$4.6 billion. For many small states (SS), such as Botswana, Fiji, Solomon Islands and Trinidad and Tobago, over 90 per cent of ET exports goes to the Commonwealth.

Supply-side shocks from the pandemic to ICT manufacturing include suspension of manufacturing operations during lockdown, social distancing policies, shortages of material inputs from trading partners and border restrictions. Quarterly data for South Africa and Belize shows a decline in imports of optical and other apparatus between January and June 2020. In the case of Malaysia, imports declined between January and March but bounced back by June 2020. The magnitude of the supply-side shock from COVID-19 to ICT goods manufacturing is likely to be higher in developing Commonwealth countries; they have lower domestic capability with regard to substituting imports and also lower robot density in manufacturing. While robot density in Singapore, Canada and Australia is above the world average (74 units), India's robot density in manufacturing stands at 3 and South Africa's at 28, with over 60 per cent of robotics in India and South Africa deployed just in the automotive sector. Together, computers and peripheral equipment and other consumer electronic equipment together accounted for a sizeable 26.5 per cent of Commonwealth ICT goods trade in 2019. Some consumer electronics segments have witnessed a positive demand shock from the pandemic; global shipments of PCs had increased by 13.1 per cent by the end of the year. The demand for ET products is also expected to have risen during the pandemic.

COVID-19, ICT services trade and the Commonwealth

Commonwealth countries accounted for 18.5 per cent of global ICT services trade in 2019. The share of the Commonwealth in global ICT services trade has remained consistently higher than that of ICT goods trade, but the Commonwealth's share in global ICT services has been on a declining trend. CW Asia accounts for around 60 per cent of the Commonwealth's ICT services trade, driven primarily by India and Singapore. Looking at both ICT services and ICT-enabled services (i.e. digitally deliverable services, or DDS), we find that Commonwealth DDS trade has increased by 67 per cent, from US$708 billion in 2010 to $1.2 trillion in 2019. The share of DDS in Commonwealth total trade in services stands at 53 per cent but here again CW developed countries and CW Asia (mainly Singapore and India) dominate. The share of SS and small island developing states (SIDS) in Commonwealth ICT services trade and DDS trade has been low and on a declining trend.

At 21.8 per cent, the share of intra-CW in the Commonwealth's ICT services is higher than the share of intra-CW in its total services exports (20.1 per cent). However, just six Commonwealth countries account for over 90 per cent of intra-CW ICT services exports: India (accounting for 45 per cent of intra-CW ICT exports); the UK (16.5 per cent); Singapore (16.35 per cent); Australia (6.08 per cent); Malaysia (3.75 per cent); and Canada (2.71 per cent). Some CW members are dependent

on intra-CW trade for ICT services exports: roughly 50 per cent of the ICT services exports of New Zealand, Brunei Darussalam and Cameroon are intra-CW. In contrast, intra-CW exports form only 6 per cent of Canada's ICT services exports and 9.5 per cent of the UK's ICT exports.

As countries and firms adopt digital solutions to cope with the effects of the pandemic, the demand for DDS is expected to rise. But this will vary across sub-sectors. With firms focusing more on operational resiliency and business continuity plans during the pandemic, there was a delay in the roll-out of software applications in 2020; the software market is expected to grow by only 3.8 per cent year on year in 2020 (IDC, 2021). On the other hand, the demand for cloud and cloud-based apps has been more resilient. The magnitude of supply-side disruptions to ICT services ultimately depends on the mode of supply: of total Commonwealth services exports, only 35 per cent are actually being exported digitally (Shingal, 2020). In some countries, such as Ghana, Kenya, India, Pakistan and Papua New Guinea, the share of services supplied through Mode 1 is above 60 per cent. In others, such as Jamaica, Maldives and Tonga, it is less than 20 per cent. In CW Africa and Asia, services are predominantly exported through Mode 1, and are therefore likely to be less vulnerable to the pandemic. Across Commonwealth regions, 75 per cent of computer services exports are from Mode 1 and are therefore more resilient to the pandemic, but this is dependent on good digital access and connectivity.

COVID-19, e-commerce and the Commonwealth

The pandemic has directly accelerated e-commerce, with a spike in both business-to business (B2B) and business-to-consumer (B2C) online sales, particularly in medical supplies, household essentials and food products (WTO, 2020a). But only a few Commonwealth countries – the UK, Canada, Australia, India, Singapore and Malaysia – are well placed in leveraging e-commerce. In 2019, developing Commonwealth countries, mostly in Africa and Asia, ranked below the global average of the e-commerce B2C index. While over 60 per cent of the population in CW developed countries is undertaking internet shopping, this falls to less than 10 per cent in many CW Asian and African countries. Over 60 per cent of firms in CW developed countries have a website but this falls to less than 20 per cent in some CW African countries. Moreover, the e-commerce value chain has also faced several supply-side disruptions as a result of the suspension of manufacturing activity, decreased production and labour shortages. Cross-border e-commerce has been further affected by disruptions in transport and logistics services.

COVID-19 and policy priorities in the Commonwealth

Policy priorities for leveraging digital trade in economic recovery include expanding digital access in developing countries and least developed countries in the Commonwealth by targeting internet affordability. While more than 80 per cent of the population in CW developed countries has access to the internet, this falls to less than 30 per cent of the population in several CW Asian countries, such as Sri Lanka, Pakistan and India, and less than 10 per cent in some CW African countries. COVID-19 further threatens to exacerbate the digital divide within the Commonwealth, and consequently the divide in digital trade across developed and CW developing members. Broadband speeds have declined by over 30 percentage points in Malaysia, 23 percentage points in Sri Lanka, 24 percentage points in Ghana and 21 percentage points in India during the lockdown. Policies need to target digital infrastructure-sharing, efficient spectrum allocation and development of broadband infrastructure.

CW African countries and SS also lag behind in trade facilitation and logistics, which are critical to boosting digital trade. COVID-19 has magnified challenges related to border operations, customs cooperation and trade facilitation and automation. Digital trade facilitation, automation of customs, digital signature and digital financial inclusion have become all the more important during the pandemic. In addition, development of an appropriate legal framework around digital trade is critical. CW developed countries fare better in terms of regulatory quality, the ICT regulatory environment and the adaptability of legal frameworks to digital technologies. Moreover, the majority of the

Commonwealth countries that have legislation in only one of the four categories (data protection and privacy, cybersecurity, e-transactions and consumer protection) needed for e-trade are African countries and SS. An appropriate regulatory framework, addressing key issues of consumer protection, including through online dispute resolution, data governance and cybersecurity, can facilitate digital trust for cross-border e-commerce in CW developing countries.

1. Introduction

The COVID-19 pandemic is causing unprecedented disruptions across global value chains, with manufacturing and some services subsectors – particularly transport and travel, tourism, aviation and hospitality – hit hard. The World Bank's Global Economic Prospects January 2021 projects a fall in global gross domestic product (GDP) of 4.3 per cent, with an estimated 5.4 per cent decline in advanced countries and a 2.6 per cent decline in emerging markets and developing countries.

The contraction of GDP is being realised through the combined effects of supply- and demand-side shocks (Baldwin and Weder di Mauro, 2020). Supply has been affected directly through the closure and suspension of operations across multiple activities, leading to redundancies and suspensions, which have directly affected demand through dampening income expectations. The lockdowns have directly affected many services, such as hospitality and retail services, with a knock-on effect on their domestic and foreign suppliers. On the demand side, job and income losses have adversely affected consumption of goods and services, coupled with people staying at home and not going to movie theatres or restaurants, not travelling, etc.

The World Trade Organization (WTO) (2020a) forecasts a 9.2 per cent decline in global merchandise trade for 2020, with United Nations Conference on Trade and Development (UNCTAD) (2020a) estimates arriving at a more conservative figure of 5.6 per cent. Globally, some manufacturing segments were hit hard, such as garments manufacturing and automotive manufacturing, while those related to medical products, such as personal protective equipment, ventilators, thermometers and sanitisers, experienced high growth in Q2 of 2020, as did other non-medical products related to COVID-19, such as home office equipment, including Wi-Fi routers, laptops and portable storage. Commodities constitute almost 50 per cent of the Commonwealth's global merchandise exports but the share for 35 commodity-dependent Commonwealth countries is above 80 per cent (Ali et al., 2020). As a result of the pandemic, the commodity exports of the Commonwealth to five key destination markets[1] are expected to fall by between US$98 and $123 billion in 2020 (ibid.). The services trade activity index (WTO, 2020b), a measure of the volume of world services trade, also registered a year-on-year decline of 4.3 per cent in the first quarter of 2020, exacerbated by restrictions on international travel and travel bans. Some services sectors, such as financial services, displayed more resilience to the pandemic (ibid.).

Measures imposed to contain the spread of the virus, such as physical distancing and work from home policies, have increasingly shifted economic activity online and given a boost to digital trade. Global online transactions at the end of April 2020 were 42.8 per cent up from 2019 (Clement, 2020). However, the impact differed across industries; some sectors, such as supermarket and sports equipment, recorded more than 20 per cent increases in online traffic between January and October 2020, while others, such as fashion and luxury, recorded a decline (ibid.). Digital acceleration during the pandemic was witnessed even in the least developed countries (LDCs). In surveying 23 countries, mainly LDCs, in Africa and Asia-Pacific, UNCTAD (2020b) confirms that the pandemic has accentuated the trend towards greater adoption of social media and growth in sales through e-commerce websites, particularly in groceries, pharmaceuticals, health and hygiene products, restaurant delivery and financial services, from third-party online marketplaces.

Emerging evidence further suggests that firms that engage in digital trade are more resilient to the crisis. First, digital trade has increased the scale, scope and speed of trade (López-González and Ferencz, 2018). Second, countries/firms engaged in digital trade may be better able to implement and cope with containment measures imposed to curtail the spread of the virus, such as physical distancing policies, closure of schools and shops or travel bans. For instance, using the COVID-19 Policy Stringency Index of the Oxford Government Response Tracker,[2] Banga and te Velde (2020) find that low- and middle-income countries with higher internet access in 2019 were more stringent in their policy responses to COVID-19 – that is, they were

able to put in place a greater number of and stricter lockdown-style policies. Digital solutions – particularly in GovTech, EdTech and HealthTech – have emerged as crucial solutions in responding to the effects of the pandemic.

Third, digital trade can help offset some of the economic losses in traditional sectors as a result of COVID-19. Using data from the World Bank Enterprise Survey 2020 for 23 countries, Banga and te Velde (2020) find a positive correlation between the percentage of firms in a country that have adopted a digital response to the crisis (increased online business activity) and the percentage of firms that have increased exports compared with one year ago, and those that have increased delivery of goods and services and increased remote work. Moreover, using data from 1,182 firms across four African countries – Niger, Togo, Zambia and Zimbabwe – the authors further find that over 70 per cent of the firms with a digital response report having adjusted or converted production.

However, the ability to shift activities online and to engage in digital trade depends on a range of factors or "digital enablers" including digital infrastructure and access, awareness and skills related to e-commerce, mobile financial services, online payment systems, trade logistics and facilitation. There exists a significant digital divide within the Commonwealth, in terms of access to, and uptake of, digital infrastructure and technologies, with CW developing countries also lagging behind in other digital enablers (Commonwealth Secretariat, 2020a). Underneath digital trade is the movement of data; not only can data be traded itself but also it underpins digital trade facilitation. Data is at the core of new and rapidly growing business models around cloud computing, the Internet of Things (IoT) and additive manufacturing.

This paper aims to deepen understanding of the contribution the digital economy can make in supporting post-COVID economic recovery in the Commonwealth and to situate this within the context of the diversity of challenges involved in growing digital trade and expanding the digital economy in Commonwealth countries. This can help Commonwealth policy-makers better leverage the power of the digital economy and digital trade in their post-COVID economic recovery strategies.

Section 2 maps recent trends on digital trade in the Commonwealth. Section 3 develops a framework for understanding how the pandemic is affecting digital trade through first- and second-order effects. Sections 4–6 present discussion and analysis on trade in information and communication technology (ICT) goods, ICT and ICT-enabled services, and e-commerce as pathways for mitigating the economic effects of the pandemic, respectively. Section 7 discusses how Commonwealth countries are faring in terms of digital trade enablers and policy priorities for the Commonwealth to leverage digital trade for post-crisis inclusive recovery. Section 8 provides concluding remarks.

2. Digital trade trends in the Commonwealth

The Organisation for Economic Co-operation and Development (OECD), WTO and International Monetary Fund (IMF) (2020) handbook defines digital trade as international trade in produced goods and services that have been digitally ordered and/or digitally delivered. Digitally ordered trade refers to the international sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders; digitally delivered trade involves international transactions that are delivered remotely in an electronic format, using computer networks specifically designed for the purpose (ibid.). As a result of digitalisation, trade in smaller, often lower-value, physical packages (parcels ordered online) and digitally delivered services (such as internet banking and financial services) is growing (Lopez-Gonzalez and Jouanjean, 2017) with the emergence of new types of bundled goods and services, or services embedded in goods (Miroudot and Cadestin, 2017). Therefore, digital trade is more than trade in ICT goods and services; it also includes digital sales and purchases across a range of sectors.

New methodologies have emerged in terms of classification of digital products, such as the

OECD-WTO-IMF handbook (2020) on measuring digital trade. The handbook presents useful and new ways of classifying services, digital goods and digitally ordered goods, and digitally ordered and digitally deliverable services. For instance, it develops an "enterprise-based" approach to measuring digital trade and recommends that future enterprise surveys include questions on the share of purchases made by digital ordering, breaking down transactions imported or domestically produced. However, this is a forward-looking approach and provides information on how future surveys should be conducted and the information they should cover. As it is, the classification categories cannot be applied for current analysis of Commonwealth countries, owing to lack of data availability.

For the purpose of this paper, we use classifications followed by UNCTAD's World Integrated Trade Solutions (WITS) dataset, which presents useful information on ICT trade and good country coverage for the Commonwealth. We first present analysis on overall ICT trade in the Commonwealth and then split analysis on digital trade trends under three sections:

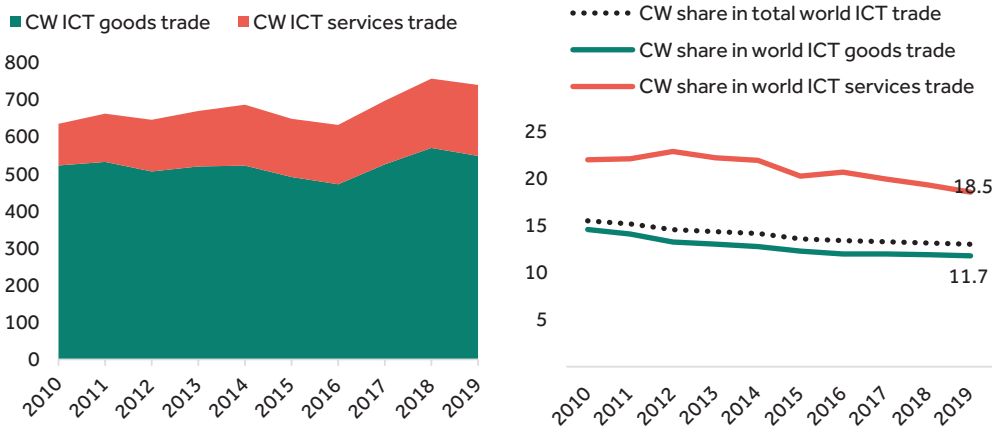
1. ICT goods (e.g. computer and communication equipment) and digital goods (e.g. software and videogames);
2. Digital services (ICT, cloud computing, data processing, etc.) and digitally deliverable export services (e.g. legal, digital health and education services, financial, business);
3. E-commerce (e.g. ordering apparel online through an e-commerce platform).

2.1 Commonwealth ICT trade (ICT goods and services)

Figure 1 shows that Commonwealth[3] ICT trade has increased in the decade by 16.5 per cent from US$634 billion in 2010 to $739 billion in 2019. However, the share of the Commonwealth in global ICT goods and services trade has declined, particularly in the case of ICT services, with a dip of roughly 3.4 percentage points between 2010 and 2019. This is partly driven by the marginal declines in ICT trade of major CW developed countries such as Canada (–2.0 per cent) and the UK (–1.4 per cent), combined with strong growth in ICT trade outside the Commonwealth, particularly China's ICT trade growth by 59.2 per cent during the period. Overall, the Commonwealth has fared better in terms of ICT services trade than has ICT goods trade; its share in global ICT services trade remained consistently higher than its share in global ICT goods trade in the period 2010–2019.

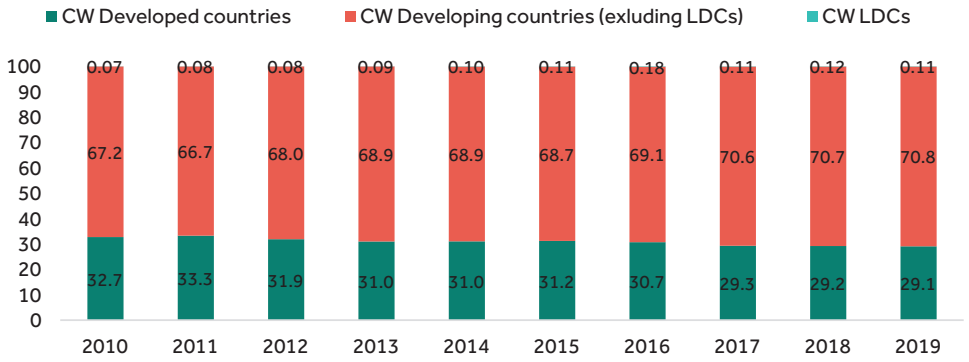
Within the Commonwealth, the share of developed countries has gradually declined, while that of developing countries has steadily increased, accounting for roughly 71 per cent of Commonwealth ICT trade in 2019 (Figure 2). The share of CW LDCs has remained stagnant. Within CW developing countries, the share of CW Asia in total Commonwealth ICT trade increased from 67.2 per cent in 2010 to

Figure 1. Commonwealth ICT trade in goods and services (% share in total world ICT trade and in US$ billions)



Notes: Only includes countries with import and export data on ICT goods and services. World ICT trade is a summation of 33 Commonwealth and 84 non-Commonwealth countries.
Sources: Authors based on UNCTAD and WTO-OECD databases.

Figure 2. Commonwealth total trade in ICT goods and services, by level of economic development (% share in total Commonwealth ICT trade)



Notes: Only includes countries with import and export data on ICT goods and services. Total Commonwealth ICT trade is a summation of 33 Commonwealth countries. The Commonwealth country sample covers 6 developed countries, 23 developing countries (excluding LDCs) and 4 LDCs.
Sources: Authors using UNCTAD and WTO-OECD databases.

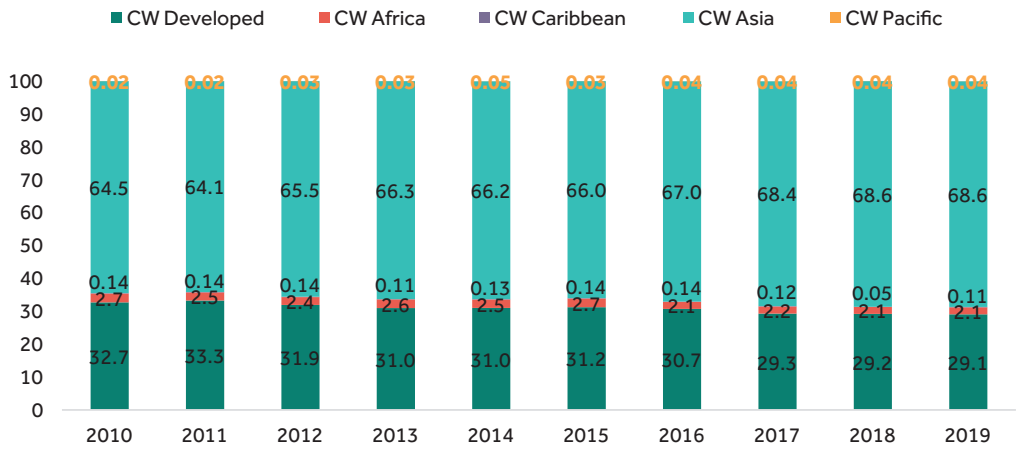
70.6 per cent in 2019. Meanwhile, the shares of CW Caribbean and Pacific countries in total Commonwealth ICT trade have remained low and stagnant in the past decade, even decreasing in the case of Africa (Figure 3). Annex 1 provides further information on country classifications across development status and regional groupings in the Commonwealth.

As of 2019, Commonwealth Asia accounted for US$507 billion of the total $739 billion Commonwealth ICT trade. It is noted that the largest share of developing countries and Asian countries in the Commonwealth's total ICT trade is driven predominantly by Singapore. Figure 4 shows that, in the period 2010–2019, Singapore, on an average, accounted for about 50 per cent of CW Asia's ICT trade.

2.2 Commonwealth trade in ICT and digital goods

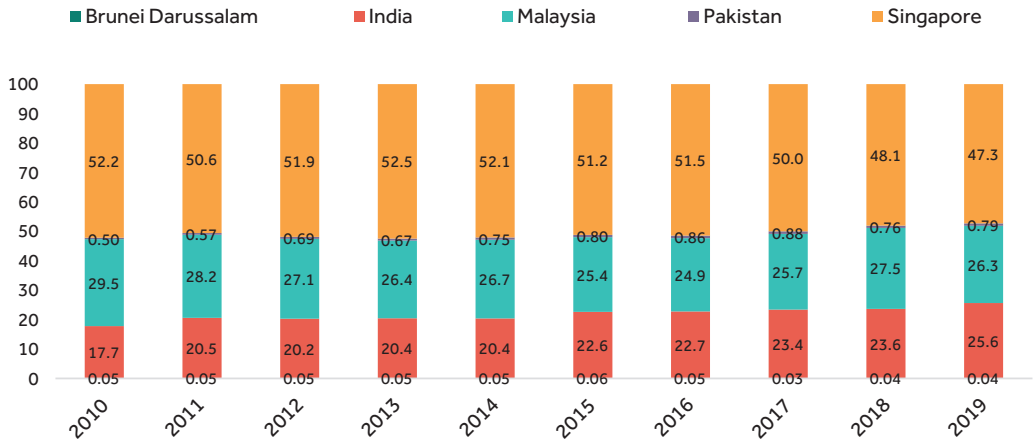
As Figure 1 shows, Commonwealth countries accounted for 11.7 per cent of global ICT goods trade in 2019. By product category,[4] electronic components (intermediate ICT goods such as valves, tubes, electrical apparatus, etc.) have the highest share (48 per cent) in the Commonwealth's total ICT goods trade, followed by computers and peripheral equipment (21.8 per cent) and communication

Figure 3. Commonwealth total trade in ICT goods and services, by region (% share in total Commonwealth ICT trade)



Notes: Only includes Commonwealth countries with import and export data on both ICT goods and services. Total Commonwealth ICT trade is a summation of 33 Commonwealth countries. The Commonwealth country sample covers 6 developed countries, 13 African countries, 5 Asian countries, 7 Caribbean countries and 2 Pacific countries.
Sources: Authors using UNCTAD and WTO-OECD databases.

Figure 4. Commonwealth Asia's total trade in ICT goods and services, by country share (% share in total CW Asia's ICT trade and in US$ millions)



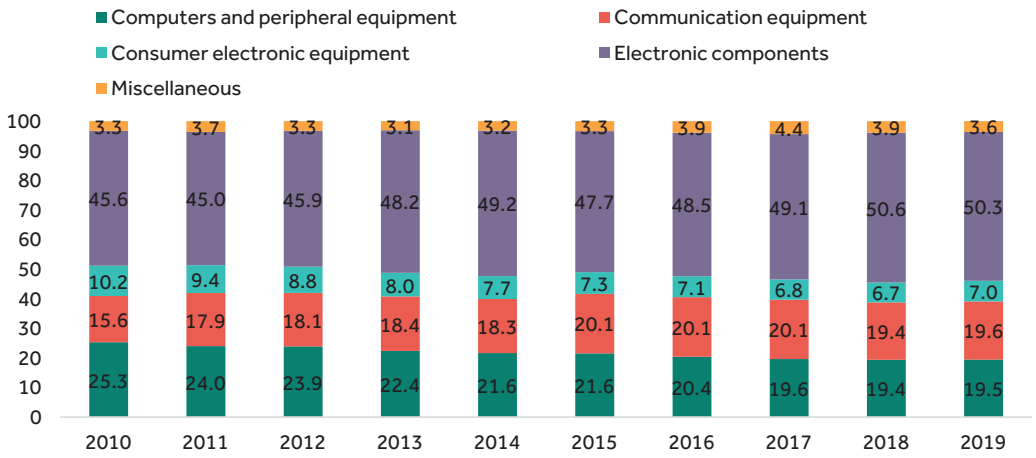
Note: ICT goods data is not available for Maldives, Sri Lanka and Bangladesh for 2019, hence these countries are not included in the computed total CW Asia trade in 2010–2019.
Source: Authors using UNCTAD and WTO-OECD databases.

equipment (18.8 per cent) on average in the past decade (Figure 5). The share of computers and peripheral equipment declined from 25.3 per cent in 2010 to 21.6 per cent in 2015 and further to 19.5 per cent in 2019, while the share of electronic components has increased in the Commonwealth's ICT trade.

CW Asia alone has accounted for an average of 69.6 per cent of the Commonwealth's ICT goods trade in the past decade (Figure 6). This is driven primarily by Singapore and Malaysia, which account for 57.4 per cent and 31.6 per cent of CW Asia's ICT goods trade, respectively and on average. CW Africa's share in ICT goods trade has declined from 2.7 per cent to 2.2 per cent, potentially because of a significant fall in ICT trade by South Africa, which drives almost 70 per cent of ICT goods trade in the region. South Africa recorded significant declines in its ICT imports in the period (by –17.1 per cent, from US$7.8 billion in 2014 to $6.5 billion in 2016) and ICT exports (by –27.5 per cent, from $1.4 billion in 2014 to $1 billion in 2016).

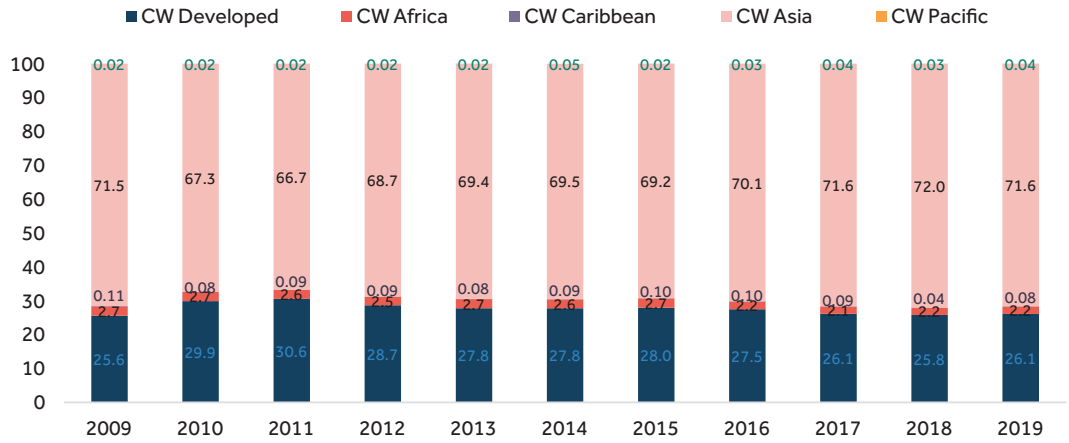
The share of intra-CW trade in total Commonwealth total goods trade is 15.6 per cent, while the intra-CW share in total Commonwealth ICT goods trade is lower, at 13 per cent (Figure 7). Examining across development regions, it is observed that almost 90 per cent of intra-CW ICT goods trade accrues to CW Asian countries (Figure 8). Small states (SS) and small island developing states (SIDS)

Figure 5. Commonwealth trade in ICT goods, by product (% share in total Commonwealth trade in ICT goods)



Notes: Only includes 31 Commonwealth countries with import and export data for each ICT goods category. Total Commonwealth trade in ICT goods is a summation of at least 29 to mostly 31 Commonwealth countries per year.
Sources: Authors using UNCTAD database.

Figure 6. Commonwealth total trade in ICT goods, by region (% share in total Commonwealth ICT goods trade)

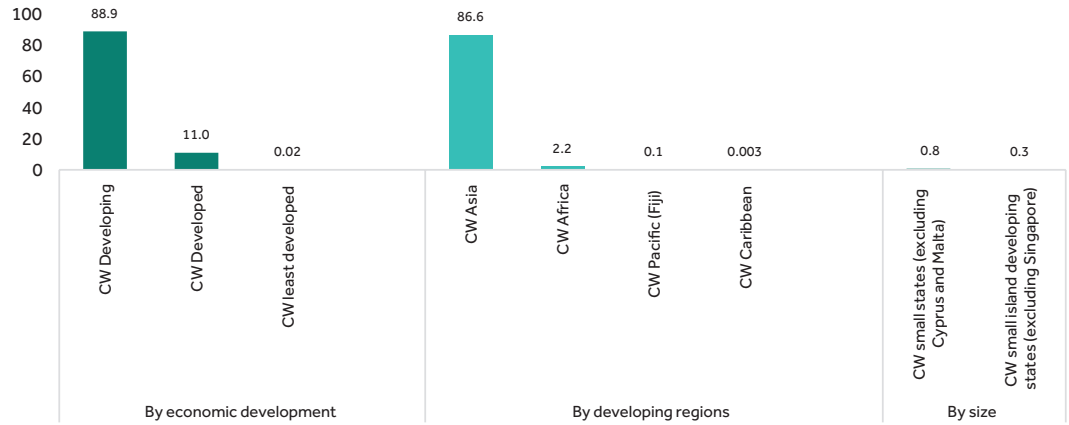


Notes: Only includes Commonwealth countries with import and export data on ICT goods. Total Commonwealth ICT trade is a summation of 33 Commonwealth countries. The Commonwealth country sample covers 6 developed countries, 13 African countries, 5 Asian countries, 7 Caribbean countries and 2 Pacific countries.
Sources: Authors using UNCTAD database.

Figure 7. Intra-CW share in ICT goods trade, 2019 (%)

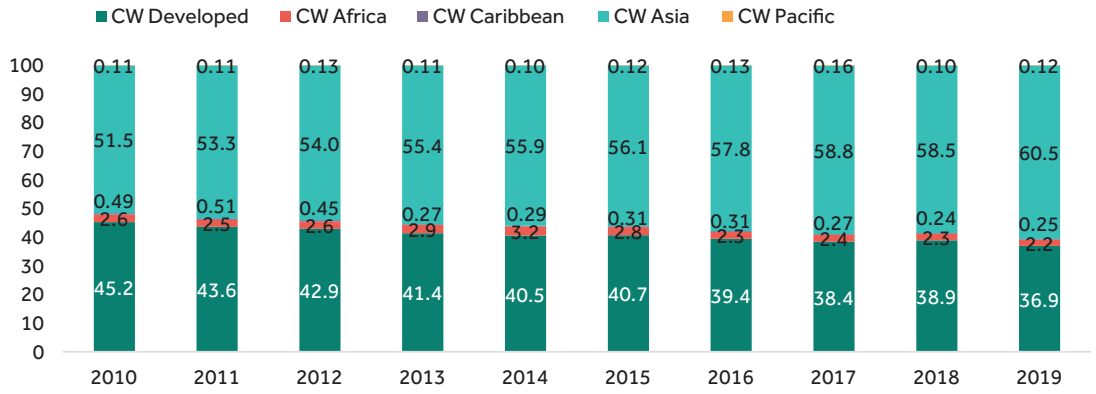
Note: CW ICT goods trade data covers 27 Commonwealth countries based on the HS 2017 nomenclature, which enables the authors to follow the HS2017 classification of ICT goods as suggested by the OECD-WTO-IMF (2020) handbook.
Source: Authors based on bilateral data using WITS.

Figure 8. Intra-CW ICT goods trade by country sub-grouping, 2019 (% share in total intra-CW ICT goods trade)



Source: Authors based on bilateral data from the WITS dataset for 27 Commonwealth countries.

Figure 9. Commonwealth total trade in ICT services, by region (% share in total Commonwealth ICT services trade)



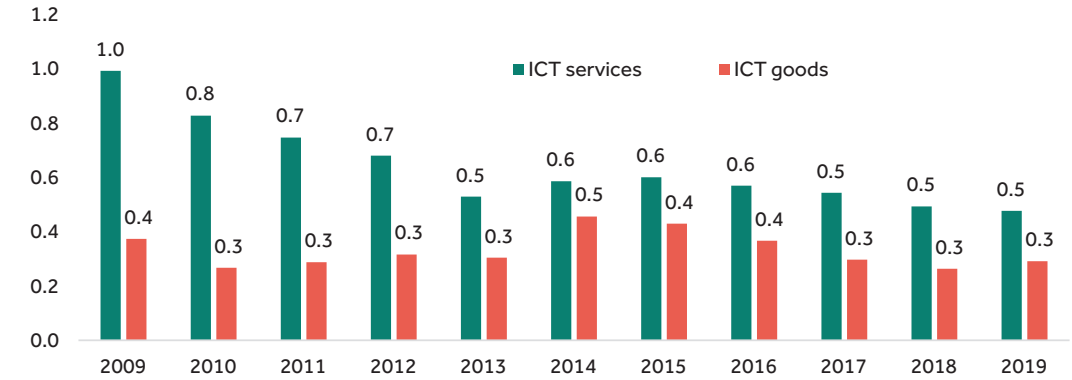
Notes: Covers data for 53 Commonwealth countries.
Source: Authors based on WTO-OECD database.

contribute less than 1 per cent of intra-CW ICT goods trade. Annex 2 presents country-level shares in intra-CW exports and imports of ICT goods. It is observed that just six Commonwealth countries account for 98.5 per cent of intra-CW ICT goods exports, driven by Singapore (48.04 per cent of intra-CW ICT goods exports), Malaysia (41.27 per cent), the UK (3.24 per cent), Australia (2.74 per cent), India (1.45 per cent) and South Africa (1.3 per cent).

2.3 Commonwealth trade in digital services

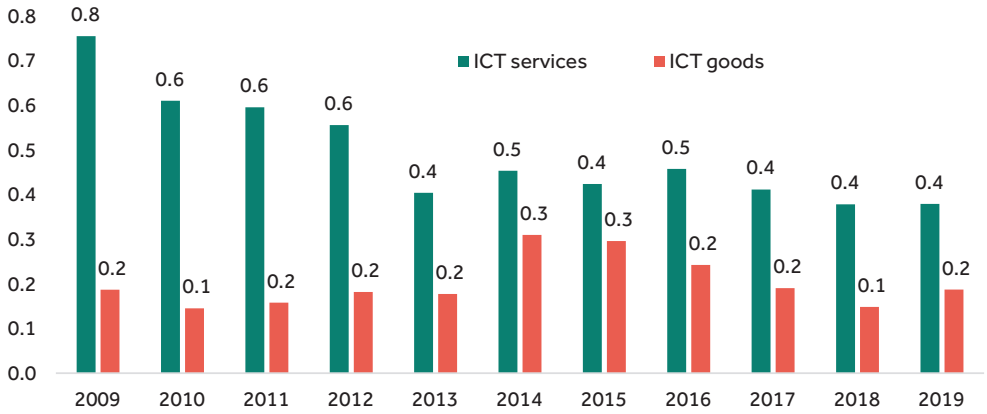
Within the Commonwealth, the contribution of ICT services to the Commonwealth's total services trade, and in terms of GDP, has been gradually increasing since 2012 (Commonwealth Secretariat, 2020a). CW Asia accounts for around 60 per cent of the Commonwealth's services trade alone from 2011 to 2019 (Figure 9), driven by the largest contributions from India (68 per cent) and Singapore (23 per cent). ICT services trade presents a particularly important channel for SS and SIDS that are lagging behind in physical infrastructure and capital investments. This is reflected in the relatively higher share of Commonwealth SS and SIDS in total Commonwealth trade in ICT services relative to these groups' share in total Commonwealth trade in ICT goods (Figures 10 and 11). However, the share of Commonwealth SS and SIDS (without the inclusion of Cyprus, Malta and Singapore) in total Commonwealth ICT services trade has been on a declining trend.

Figure 10. Commonwealth developing small states' ICT trade (respective % shares in total Commonwealth ICT trade)



Notes: Only includes Commonwealth SS (excluding Cyprus and Malta) with import and export data on ICT goods and services. The sample covers 15 SS except in 2010 and 2018, for which Belize and Jamaica's trade in ICT goods data is missing.
Source: Authors based on UNCTAD and WTO-OECD databases.

Figure 11. Commonwealth small island developing states' ICT trade (respective % shares in total Commonwealth ICT trade)



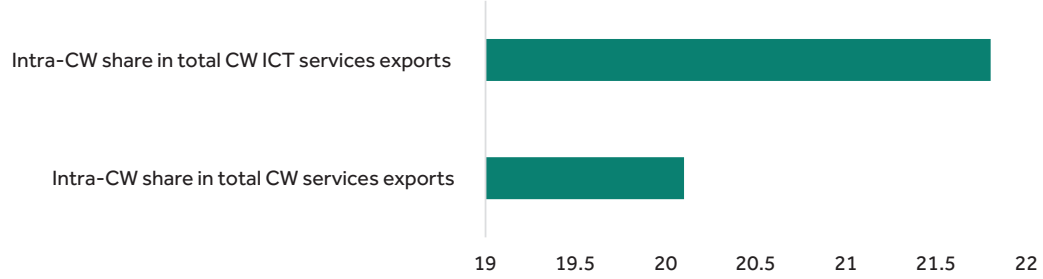
Notes: Only includes Commonwealth SIDS (excluding Singapore) with import and export data on ICT goods and services. The sample covers 11 SIDS except in 2010 and 2018, for which Belize and Jamaica's trade in ICT goods data is missing.
Source: Authors based on UNCTAD and WTO-OECD databases.

Recently released bilateral data on services sectors in the OECD-WTO's Balanced Trade in Services (BaTIS) dataset reveals that intra-CW trade fares better in the case of ICT services as compared with total services. The share of intra-CW exports in total Commonwealth services exports is 20.1 per cent, while that in the Commonwealth countries' exports of ICT services is 21.8 per cent (Figure 12). However, as observed from Table 1, just six Commonwealth countries account for over 90 per cent of intra-CW ICT exports. These include India (accounting for 45 per cent of intra-CW ICT exports); the UK (16.5 per cent); Singapore (16.35 per cent); Australia (6.08 per cent); Malaysia (3.75 per cent); and Canada (2.71 per cent). Table 1 further reveals high dependence of some Commonwealth members on the Commonwealth bloc for export destinations: roughly 50 per cent of ICT exports by New Zealand, Brunei Darussalam and Cameroon are intra-CW. In contrast, intra-CW exports form only 6 per cent of Canada's ICT services exports and 9.5 per cent of the UK's ICT exports.

ICT services are also a key enabler of trade in other services. UNCTAD's (2019a) classification of *digitally deliverable services* (DDS) therefore presents a useful proxy for estimating digital trade. DDS are an aggregation of *ICT services* (e.g. software, data processing services and IT consulting services) and *ICT-enabled services* such as insurance, financial, intellectual property charges, other business services (e.g. engineering, technical and research and development services) and audio-visual and related services (UNCTAD, 2019). Data on services in the UNCTAD database is the only available cross-country comparable data that is close to the OECD-WTO-IMF handbook's definition of digitally delivered trade in services (i.e. "*only includes deliveries that pass through "computer networks"*", page 81).[5]

Figure 13 shows the value and share of DDS in Commonwealth total trade in services

Figure 12. Intra-CW share in ICT services exports, 2019 (%)



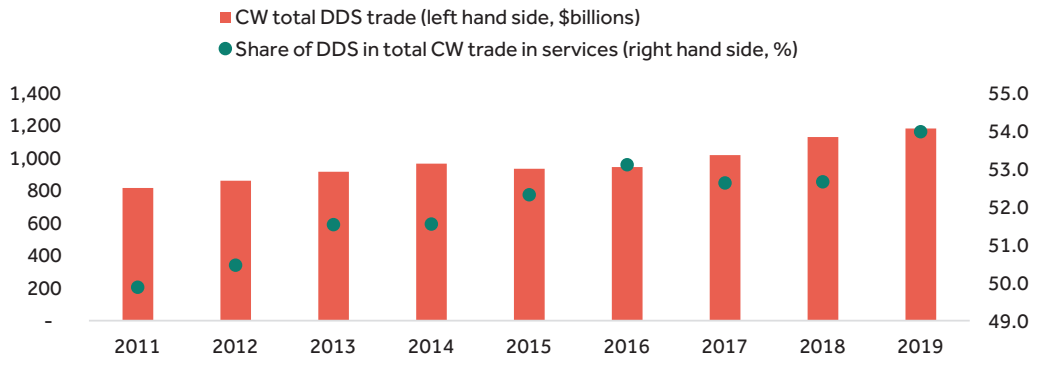
Source: Authors based on WTO-OECD database.

Table 1. Intra-CW ICT services exports, average 2017–2019

Commonwealth country	Intra-CW ICT services exports (US$ millions)	Share in intra-CW ICT services exports (%)	Share of intra-CW exports in country's total ICT exports (%)
India	8,587.33	45.11	20.25
UK	3177.67	16.56	9.53
Singapore	3108.67	16.35	26.31
Australia	1155.00	6.08	35.90
Malaysia	709.67	3.75	34.87
Canada	514.67	2.71	6.24
Cyprus	456.67	2.39	23.77
Bangladesh	428.67	2.25	35.38
New Zealand	245.33	1.29	50.30
South Africa	180.00	0.95	28.53
Pakistan	102.33	0.54	25.67
Mauritius	91.67	0.48	28.38
Malta	53.67	0.28	12.10
Maldives	45.00	0.24	16.52
Nigeria	37.67	0.20	22.06
Barbados	36.67	0.19	10.91
Seychelles	25.67	0.13	20.07
Fiji	17.33	0.09	20.72
Jamaica	16.33	0.09	20.07
Sri Lanka	15.33	0.08	27.58
Papua New Guinea	11.67	0.06	30.05
Brunei Darussalam	9.33	0.05	55.04
Belize	7.67	0.04	12.88
Kenya	7.67	0.04	23.47
Namibia	3.00	0.02	15.00
Tanzania	2.00	0.01	12.97
Bahamas	1.00	0.01	8.37
Cameroon	0.67	0.00	50.00
Eswatini	0.33	0.00	11.11

Source: Authors using bilateral trade in services data from the WTO-OECD database.

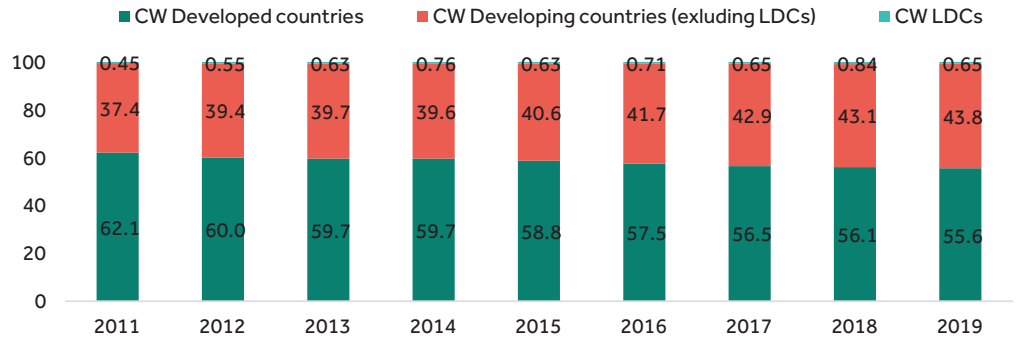
Figure 13. Commonwealth digitally deliverable services



Note: The sample covers 37 Commonwealth countries with both import and export data on DDS from 2011 to 2019

Source: Authors based on UNCTAD database.

Figure 14. Commonwealth digitally deliverable services trade, by economic development (% share in total Commonwealth DDS trade)



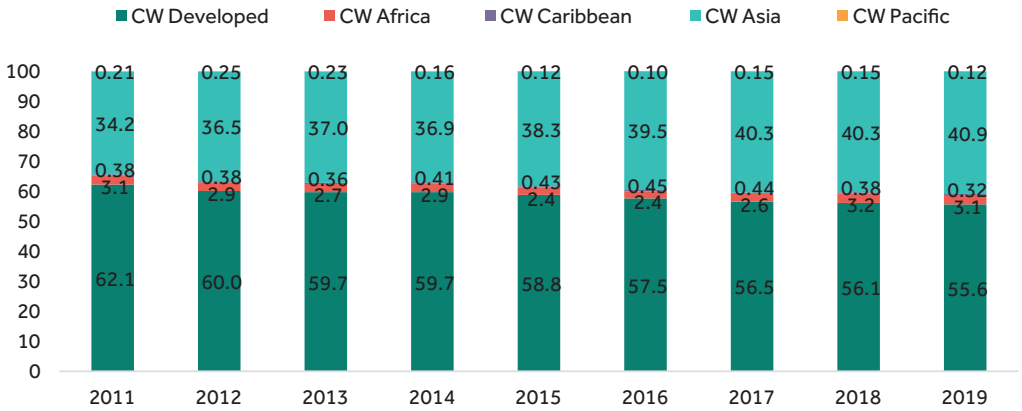
Note: The sample covers 37 Commonwealth countries with both import and export data on DDS from 2011 to 2019. The numbers of countries per grouping are as follows: 6 developed countries, 23 developing countries (excluding LDCs) and 8 LDCs.
Source: Authors based on UNCTAD database.

hovering around 50–54 per cent in the past decade. In terms of value, Commonwealth DDS trade increased by 67 per cent from US$708 billion in 2010 to $1.2 trillion in 2019.

In terms of DDS across development status of 37 Commonwealth countries with available DDS data, developed countries continue to have the dominant share of DDS trade, although this share has gradually decreased throughout the decade as the share of CW developing countries has caught up (Figure 14). While the share of six LDCs in total Commonwealth DDS trade has been stagnant at less than 1 per cent since 2011, in terms of value these LDCs' DDS trade has jumped by 111 per cent in the past decade from US$3.6 billion in 2011 to $7.8 billion in 2019. Across regions, we observe that CW Asia's share in Commonwealth DDS trade increased from 34.2 per cent in 2011 to 41 per cent in 2019 (Figure 15). This is driven primarily by Singapore and India, which are the second and third largest countries in the Commonwealth in terms of DDS trade (Figure 16).

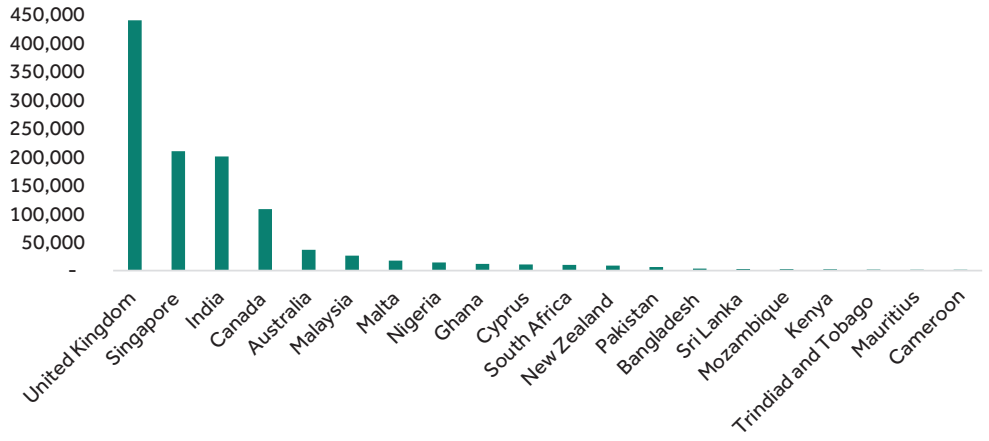
Although DDS provide an important development pathway for SIDS that lag behind in capital investments and physical infrastructure to access new markets and boost trade, Figure 17 shows that the share of Commonwealth SS and SIDS in DDS has been low and declining in the past 10 years. As of 2019, Commonwealth SS and SIDS have a less than 1 per cent share in Commonwealth DDS trade.

Figure 15. Commonwealth digitally deliverable services trade, by region (% share in total Commonwealth DDS trade)



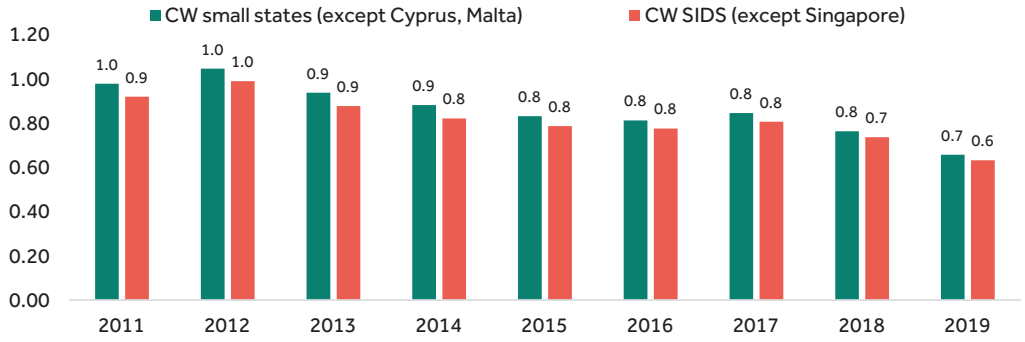
Note: The sample covers 37 Commonwealth countries with both import and export data on DDS from 2011 to 2019. The numbers of countries per grouping are as follows: 6 developed countries, 13 African countries, 6 Asian countries, 9 Caribbean countries and 3 Pacific countries.
Source: Authors based on UNCTAD database.

Figure 16. Top 20 Commonwealth countries with largest DDS trade (exports plus imports), 2017–2019 average (US$ million)



Source: Authors based on UNCTAD database.

Figure 17. Commonwealth developing small states and small island states' digitally deliverable services trade (% share in total Commonwealth DDS trade)



Note: The average number of SS with available data from 2011 to 2018 is 25. The average number of SIDS with available data from 2011 to 2018 is 21.
Source: Authors based on UNCTAD database.

2.4 E-commerce

Electronic commerce is broadly defined as the production, marketing, sale and/or delivery of goods and services via electronic means (OECD, 1997). Table 2 presents key categories of e-commerce. Domestic e-commerce platforms are important mechanisms for reducing the cost of exchange within the informal economy; connecting low-productivity segments with firms with higher productivity; and linking people to more formal parts of the economy across sectors and geographies (Pathways for Prosperity, 2018). E-commerce growth can also lower barriers to entry, creating new opportunities of market access and growth for the rural sector, micro, small and medium enterprises (MSMEs) and women. This is particularly important for Commonwealth SIDS with a very limited capital base; the potential of e-commerce and use of the electronic marketplace provide them with opportunities for reaching customers in distant markets without the costs of establishment or the use of intermediaries (Broome, 2016). E-commerce has also been linked to export diversification in some Commonwealth markets, such as Bangladesh (ITC, 2018). Economic benefits and cost savings realised through e-commerce – including through higher market access and improvements in productivity – can also contribute to job creation in information technology (IT), postal and delivery services. Therefore, leveraging e-commerce and related policies on inclusive finance and payments is key to post-COVID recovery.

Significant differences exist across Commonwealth regions and developed and developing

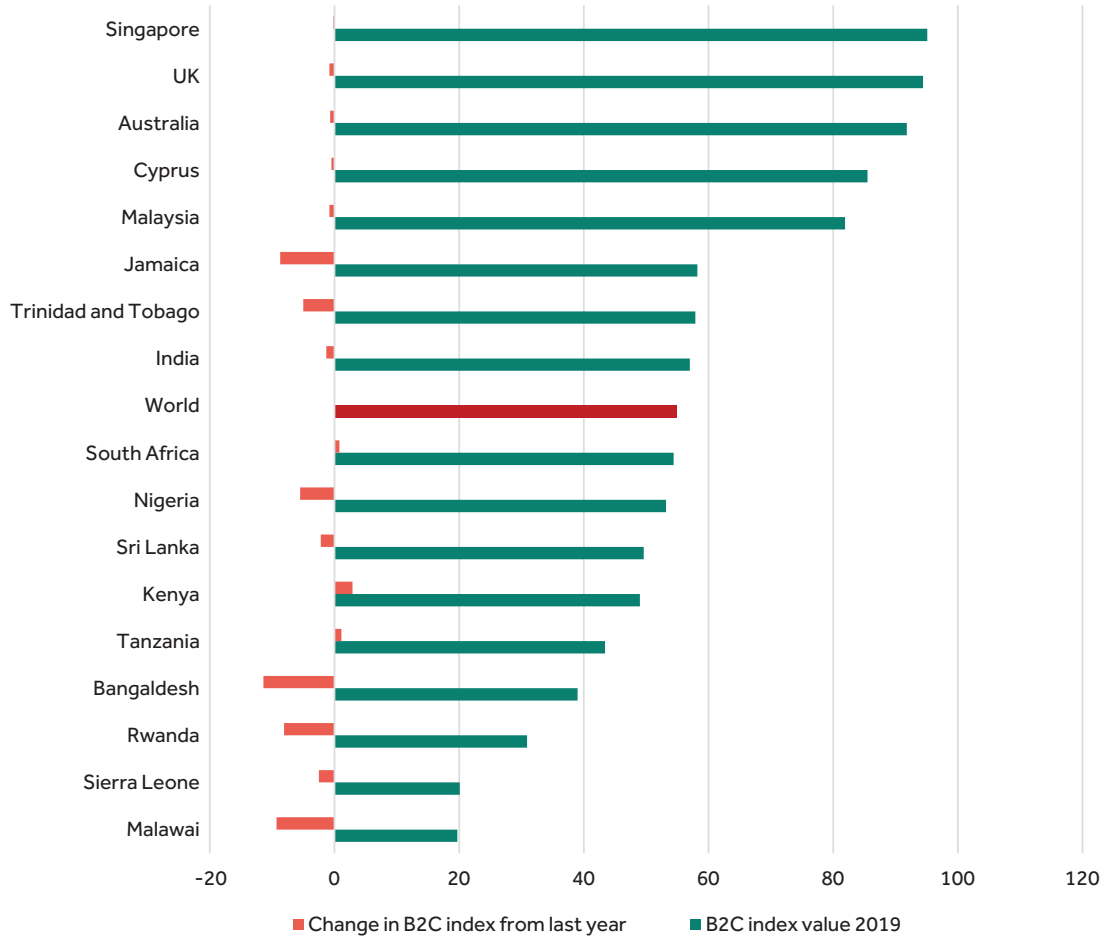
Table 2. Categories of e-commerce

Category	Agents involved	Description
Business-to-business (B2B)	Sales between wholesalers, retailers, manufacturers, etc.	Exchange of services or information between businesses rather than between businesses and consumers
Business-to-consumer (B2C)	Firms sell products directly to consumers	Financial transactions or online sale between a business and consumers
Business-to-government (B2G)	Firms and the public sector	Use of internet for public procurement, licensing procedures and other government-related operations
Consumer-to-consumer (C2C)	Consumers	Consumers selling products to other consumers; also involves use of second hand or used products

Source: Adapted from WTO (2013).

countries in B2C e-commerce. 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 (Commonwealth Secretariat, 2020a). Although data on cross-border e-commerce is not available for the majority of Commonwealth countries, Figure 18 demonstrates the potential of these countries to

Figure 18. B2C E-Commerce Index for Commonwealth countries, 2019



Source: UNCTAD (2019b).

conduct B2C e-commerce using the UNCTAD B2C E-Commerce Index 2019, which reflects the processes in an online shopping B2C transaction, comprising an enabling digital platform (i.e. web presence) to place an order, an electronic payment method (e.g. mobile banking, credit card) and postal delivery of digital products (UNCTAD, 2019b).

The global average value on the B2C E-Commerce Index in 2019 was 55.[6] Three developed Commonwealth countries – Australia, the UK and Cyprus – fare above the world average, alongside select CW developing countries, such as Malaysia, Jamaica and India. Other CW developing countries, mostly in Africa and Asia, rank below the global average. For example, Malawi and Sierra Leone have an index score of just 20. Compared with the 2018 index, Jamaica, Trinidad and Tobago, Nigeria, Bangladesh and Malawi record a decline in B2C e-commerce performance. A look at the sub-indices reveals a decline in the performance of Jamaica, Malawi and Bangladesh in terms of postal competence, and lower availability of secure internet servers per million population in Nigeria.

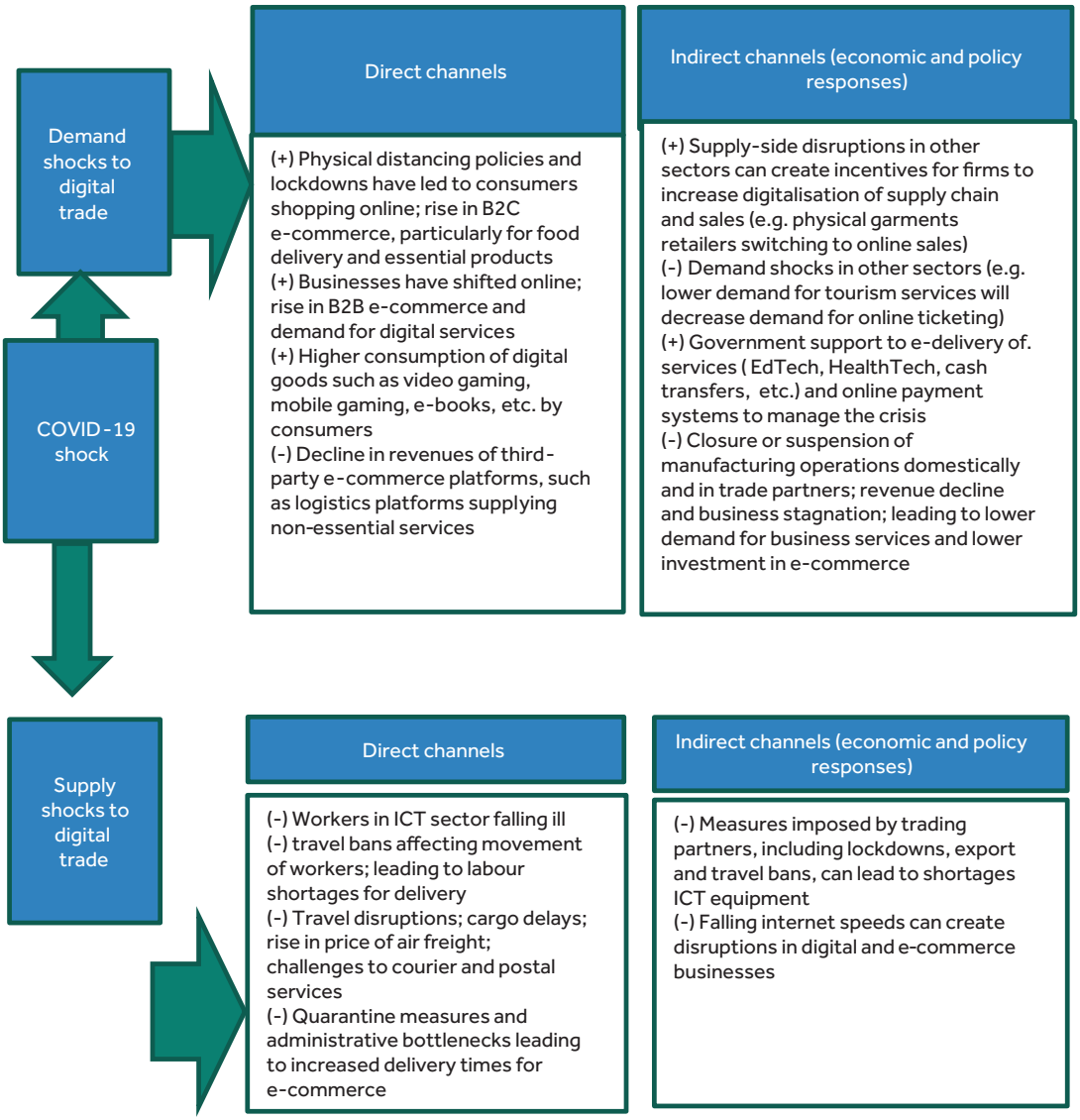
3. COVID-19, digital trade and the Commonwealth: A framework

This section applies Banga and te Velde's (2020) COVID-19 and digital economy framework to understand the demand- and supply-side shocks to digital trade in the Commonwealth (Figure 19). In this framework, the effects of the pandemic on the digital economy can be (i) direct, or first-order, effects or (ii) indirect, second-order, effects, which arise as a result of economic and policy responses to the pandemic. Consider direct effects: on the demand side, work from home arrangements, social distancing and businesses shifting online can increase demand for digital goods (such as e-books, videogames), digital services and e-commerce. On the supply side, workers in the ICT sector falling sick, travel bans and restrictions on the movement of workers, border delays and shortages of labour in delivery services can directly affect the supply of digital trade.

Indirect shocks to digital trade in the framework can arise from demand-side disruptions in other traditional sectors of the economy as well as through policy responses by governments. For instance, empirical analysis undertaken in Liew (2020) suggests that the lockdown in Wuhan exerted a significant adverse effect on Booking Holdings Inc., Expedia Group and Trip.com Group – the three largest global online travel companies, offering air ticketing, online hotel reservations etc. On the other hand, social distancing policies in physical stores and lockdowns can create incentives for firms in traditional sectors, such as garments, to shift towards online sales, creating a positive demand shock for digital trade. Indirect supply-side disruptions include shortages in ICT inputs owing to national lockdowns in trading partners.

The following sections apply the framework to Commonwealth countries and map the scope of digital trade as a mitigating pathway to COVID-19.

Figure 19. COVID-19 and digital trade in the Commonwealth



Note: (+) denotes a positive shock from the pandemic; (-) denotes a negative shock.
Source: Adapted from Banga and te Velde (2020).

4. COVID-19 and ICT goods trade in the Commonwealth

As shown above, Asia alone accounts for almost 70 per cent of the Commonwealth's ICT goods trade in the past decade, primarily driven by Singapore and Malaysia, while the share of CW Africa in Commonwealth ICT goods trade has declined, potentially because of a significant fall in both exports and imports of ICT goods by South Africa. Electronic components (intermediate ICT goods such as valves, tubes, electrical apparatus, etc.) have the highest share (48 per cent) in the Commonwealth's total ICT goods trade, followed by computers and peripheral equipment (21.8 per cent) and communication equipment (18.8 per cent).

The magnitude of the supply-side shock from COVID-19 to ICT goods manufacturing in a country is likely to be determined by the labour intensity of the ICT manufacturing segment,

with less automated labour-intensive ICT manufacturing segments (such as smartphone manufacturing) more adversely affected by social distancing and work from home strategies than capital-intensive and more automated manufacturing segments, such as semiconductors and memory devices (Banga and te Velde, 2020). Similarly, the data hosting and storage category is predicted to witness a lower decline than the broadband sector.

An indirect supply-side shock to the sector came from lockdowns and travel bans in key trading partners both within and outside the Commonwealth, leading to shortages in key imported materials. China, for instance, accounts for roughly 26 per cent of global Information Technology Agreement (ITA) exports[7] (Banga and te Velde, 2020). Hit by the pandemic, China's ICT spending is set to decline by 7.6 per cent in the first quarter of 2020, with its spending on hardware expected to decline by 8.5 per cent (Farrell, 2020). The lockdown in Wuhan, specifically, is likely to have had a spillover effect on the future digital strategies (of 5G technology and fibre optic roll-out plans) of various countries, given that Wuhan is home to Fiberhome, YOFC and Accelink, among other companies, which together comprise 25 per cent of the global optical fibre production capacity (Cabling Installation & Maintenance, 2020). In line with this, quarterly data for South Africa and Belize shows a decline in imports of optical and other apparatus in January-June 2020 (Table 3). In the case of Malaysia, imports declined between January and March but bounced back by June 2020.

Overall, these supply-side shocks are likely to have a greater effect on CW developing countries compared with CW developed countries, since the latter group has higher domestic capability of substituting imports and also higher robot density in manufacturing – that is, is more automated (IFC, 2020). In terms of robot density (i.e. units of industrial robots installed per 10,000 employees in the manufacturing industry), Singapore, Canada and Australia have robot density above the world average (74 units), while India's robot density in manufacturing stands at 3 and South Africa's at 28, with over 60 per cent of robotics deployed just in the automotive sector (Commonwealth Secretariat, 2020a). Excluding South Africa, CW Africa's robot density is almost negligible. Seric and Winkler (2020) further highlight the possibility of a global push towards automation and digitalisation by high-income countries in the future; in an effort to mitigate supply chain risks and increase flexibility post-pandemic, global lead firms may have an incentive to digitalise their supply chains and bring production back closer to home. This can lead to potential re-shoring of manufacturing operations and limited future offshoring to CW developing countries, such as Bangladesh and India, which have traditionally been major offshoring hubs (ibid.).

Table 3. Monthly imports of optical and other apparatus in select Commonwealth countries (US$ thousands)

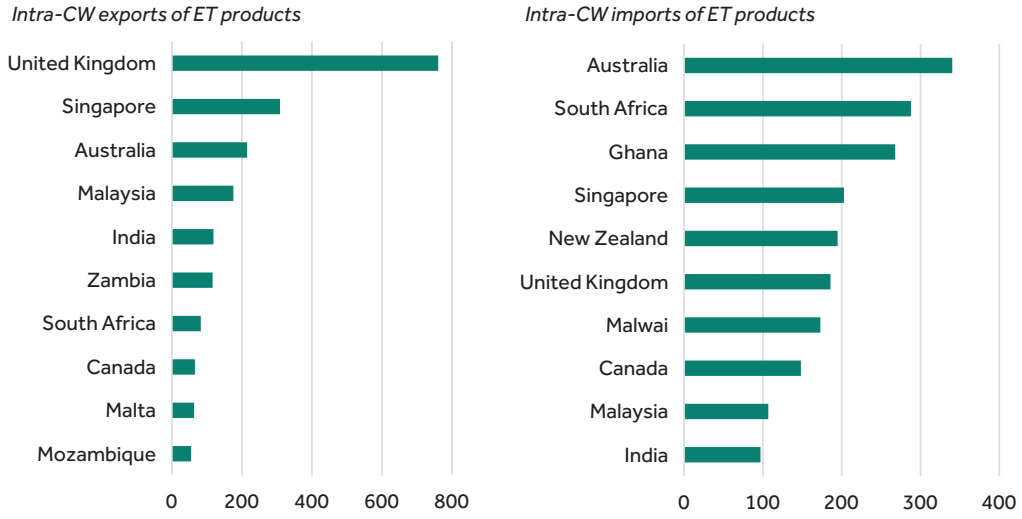
Country	January 2020	March 2020	June 2020
South Africa	168,550	161,168	138,865
Malaysia	419,890	396,192	449,083
Belize	853	832	566

Note: Countries chosen on the basis of data availability.
Source: ITC data for 2020.

As shown in Figure 5 above, computers and peripheral equipment and other consumer electronic equipment together accounted for 26.5 per cent of Commonwealth ICT goods trade in 2019. Emerging evidence suggests a varied impact of the pandemic on consumer electronics. In the case of mobile phone manufacturing, there was a 20.4 per cent decline in the second quarter of 2020 in the global sale of smartphones (Gartner, 2020). On the other hand, by the end of 2020, global shipments of PCs had increased by 13.1 per cent year on year, with the main catalysts being work from home, remote learning and restored consumer demand (IDC, 2021). Between March and October, the UK imported £4.7 billion-worth ($6 billion) of laptops, 20 per cent more than in the same period in 2019.[8] Similarly, providers in the memory and storage industry and data centres have flourished as cloud providers have added to their computing, networking and processing equipment to support remote work (WM REDI and CITY REDI, 2021).

The demand for *digitisable products* is expected to have risen during the pandemic. These are goods that can be electronically

Figure 20. Largest intra-CW members of digitalised trade (ET products), value of intra CW trade (US$ millions)



Notes: Products included in this category are films (HS 37), printed matter (HS 49), sounds, media and software (HS 8524) and videogames (HS 9504).
Source: Commonwealth Secretariat (2020a).

transmitted – ET – such as audio files, video files or video games. UNCTAD defines four categories of digitalised products as ET products: films (HS 37), printed matter (HS 49), sounds, media and software (HS 8524) and videogames (HS 9504). Trade in digitalised products is significant in the Commonwealth, particularly in the case of intra-CW trade. Based on the most recent available data for 2017, annual intra-CW trade (exports plus imports) in ET products is worth more than US$4.6 billion. Figure 20 shows intra-CW trade of ET products by the largest members. For many Commonwealth countries, exports to other Commonwealth members constitute a major share of their total exports of these products: 100 per cent of Mozambique's exports of ET products and more than 90 per cent of ET exports by Botswana, Eswatini, Fiji, The Gambia, Kiribati, St Vincent and the Grenadines, Solomon Islands, Trinidad and Tobago and Zambia are to the Commonwealth (Table 4).

Table 4. Top 10 members most reliant on intra-CW trade in ET products

	Most reliant on Commonwealth markets for exports of digitalised (ET) products (Commonwealth share of total ET exports, %)	Most reliant on Commonwealth members for imports of digitalised (ET) products (Commonwealth share of total ET imports, %)
1	Mozambique (100)	Solomon Islands (94.8)
2	Eswatini (99.9)	Ghana (93.6)
3	The Gambia (99.8)	Samoa (91)
4	Solomon Islands (99.8)	Botswana (88.4)
5	Kiribati ** (99.3)	Namibia (84.5)
6	Fiji (96.5)	Malawi (83.7)
7	Zambia (96.2)	Fiji (83.2)
8	Trinidad and Tobago * (95.5)	Brunei Darussalam (77.9)
9	St Vincent and the Grenadines (94.9)	Kiribati ** (75.4)
10	Botswana (92.4)	Seychelles (70.5)

Notes: Products included in this category are films (HS 37), printed matter (HS 49), sounds, media and software (HS 8524) and videogames (HS 9504). * Data used is for 2015; ** data used is for 2016.
Source: Commonwealth Secretariat (2020a).

5. COVID-19 and the Commonwealth's trade in digital services

On the demand side, as businesses shift online and consumers work from home, demand for ICT and ICT-enabled services is likely to increase, creating a new opportunity, particularly in the case of cloud services and data hosting in CW developing countries that have a supportive data and privacy framework. Rising demand for ICT services during the pandemic has been evident in the case of Kenya, a digital leader in CW Africa, with an estimated cloud service market at US$275 million in 2017 (see Banga, 2020). At present, 7,000 Kenyans work in business process outsourcing jobs, with an estimated 286,000 employed by digital services platforms in transport, logistics and e-commerce. In Kenya, the lockdown has generated larger demand for communications, computer and information services; Safaricom, for instance, has seen a 70 per cent surge in data usage as Kenyans stay at home to curb the spread of COVID-19 (Reuters, 2020a). In February 2020, Safaricom announced a partnership with Amazon Web Services to sell the latter's services, primarily cloud, to East Africans (Bright, 2020a). It is also offering doubled internet speed for home fibre packages at no extra cost to users, while Telkom Kenya is rolling out Google Loon to boost 4G coverage (Nyaga, 2020). However, containment measures (work from home and national lockdowns) imposed as a response to the pandemic, and the resultant stagnation in business growth, could potentially reduce outsourcing to developing Commonwealth firms. For instance, there are approximately 550,000 freelancers in Bangladesh exporting e-commerce or related services, predominantly to clients in North America and Europe (Banga and Mendez-Parra, 2021).

On the supply side, some segments of the ICT services sector are more affected than others. For instance, with Indian firms focusing more on operational resiliency and business continuity plans, there has been a delay in the roll-out of software applications in 2020, and the software market is expected to grow by only 3.8 per cent year on year in 2020 (IDC, 2020) (see Box 1). As Box 1 further shows, the supply of cloud computing and cloud-based services is less affected by the pandemic. However, access to and usage of cloud and data hosting services in many Commonwealth developing markets tends to rely on data centres outside their local market, with limited domestic capabilities, with the exception of some members such as India, which has already emerged as a leader in exports of specialised computer services, critical for expanding digital trade. As per Table 5, India exported around US$2.4 billion to the USA in computer software and $172 million in cloud computing and data storages services, on average, between 2017 and 2019, higher than even Australia, the UK and Singapore. South Africa also exports a sizeable $19 million in computer software services to the USA.

The resilience of a services sector to the pandemic is further dependent on the mode of supply. Consider the case of computer services, classified under ICT services. Computer services can be traded through four modes of supply: cross-border supply – that is, sales of computer and related services through electronic networks to a non-resident who stays in his/her home country (Mode 1); services supplied by an IT company to an overseas customer who is temporarily in the country (Mode 2); foreign investment in domestic firms providing computer services (Mode 3); and IT consultants who go abroad for work (Mode 4). Supply-side disruptions to ICT and ICT-enabled services may be limited for those services that

Table 5. Exports of computer services to the USA, 2017–2019 average (US$ millions)

	Computer software	Cloud computing and data storage services
Australia	202.67	9.67
India	2,350.67	172.67
Singapore	158.67	1.00
South Africa	19.00	5.00
UK	2,144.33	43.67

Source: Authors based on BaTIS database.

Box 1. COVID-19: How is digital trade faring in India?

IT services account for close to 40 per cent of India's total services exports and, along with management consultancy services, is one of the few sectors where the country exhibits a revealed comparative advantage (Shingal, 2020). More than three-quarters of India's IT services exports are now delivered online as opposed to on-site as before, making India's trade in these services more resilient to the pandemic. However, overall ICT spending across all infrastructure segments – hardware, services and software – is projected to fall in India in 2020 as a result of the pandemic. Demand for software is set to fall: resources are going to be directed towards expanding internet connectivity and improving international internet bandwidth, leading to a delay in roll-out of software applications in 2020. Enterprises at this point are focusing more on operational resiliency and business continuity plans.

As per the latest International Data Corporation (IDC) Worldwide Semiannual Software Tracker[9], the Indian software market grew by 16.0 per cent year on year in 2019. IDC forecasts estimate India's overall software market to grow by only 3.8 per cent year on year in 2020. Interviews conducted with Chief Information Officers (CIOs) in India in Deloitte (2020) shed light on the range of challenges the sector is facing. About 80 per cent of CIOs had to work on connectivity improvements to enhance work from home IT infrastructure (e.g. provision of WAN networks, VPN adoption, etc.), with a 60–65 per cent decrease in overall productivity owing to slow adoption of work from home culture, lack of required IT infrastructure, connectivity, etc. One segment that is doing relatively well is cloud services and cloud-based applications. Currently, cloud adoption stands at 20–30 per cent; some start-ups have managed to be 100 per cent on cloud (Deloitte, 2020). None of the third-party or cloud data centres showed any signs of disruptions during the national lockdown. There will be heightened demand for collaborative applications, application platforms, security software, system and service management software, and content workflow and management applications.

E-commerce in India presents a mixed picture. There are some success cases of e-commerce companies, such as Flipkart, for example, which reported surpassing 1.5 billion visits per month in July 2020, and registered 45 per cent growth in monthly active customers and 30 per cent growth in transactions per customer for FY20. However, other estimates suggest that e-commerce sales rose by only 7–8 per cent in 2020 in India, compared with almost 20 per cent in China and the USA, whose governments made full use of contactless buying (Peermohamed, 2021).

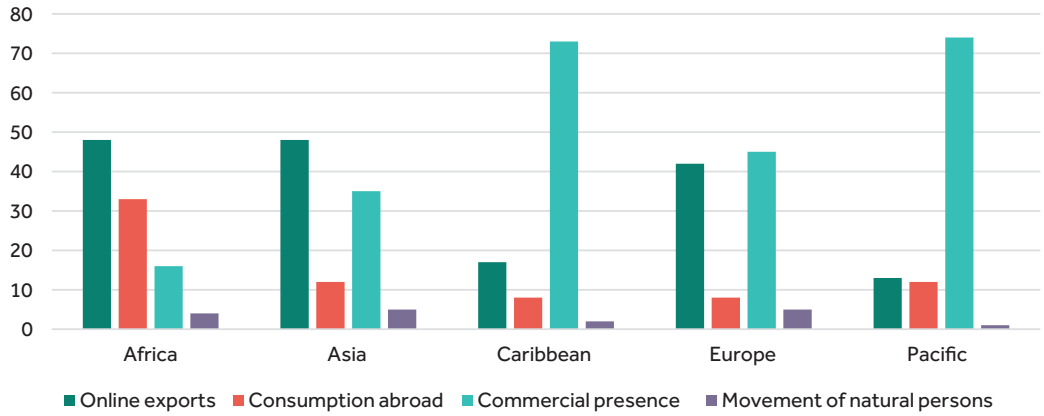
Source: Compiled from Shingal (2020), IDC (2021), Deloitte (2020).

are delivered digitally (Mode 1) in work from home scenarios and are therefore more resilient to distancing measures and travel bans.

Shingal (2020) provides useful insight into the actual modes of supply for trade in services for the Commonwealth in 2017. In the case of computer services, 75 per cent of exports are from Mode 1 in the Commonwealth, across regions. This sector is likely to be less affected by the pandemic as compared with other sectors such as business and personal travel, construction and manufacturing services, which are dependent on other modes of supply and are therefore more vulnerable to disruptions through lockdowns and travel bans. However, even in the case of computer, education and other business services, at least a quarter of services are exported through Mode 4 in the Commonwealth (movement of skilled professionals across borders) and are therefore at risk (ibid.). Moreover, even in Mode 1 supply, resilience depends on enablers such as digital access, which is particularly likely to affect CW LDCs. Even if digital access is not a problem, data security and client confidentiality can hamper trade in DDS, for instance in the provision of financial and legal services in work from home scenarios. Other services, such as e-health, are likely to witness growth.

On the whole, only 35 per cent of Commonwealth services exports, by value, were being exported digitally (through Mode 1) in 2017; 50 per cent were delivered by Mode 3, 10.4 per cent by Mode 2 and 4 per cent by Mode 4 (Shingal, 2020). But differences emerge across regions and countries. In CW Africa and Asia, services are exported predominantly through Mode 1, and are therefore likely to be less vulnerable to the pandemic (Figure 21). Countries dominant in Mode 2 supply are likely to be more severely affected (ibid.). This is particularly true for the Caribbean (The Bahamas, Saint Lucia), the Pacific (Tonga, Vanuatu) and some Asian (Maldives) countries whose economies rely largely on tourism and related services (ibid.). In some countries, the share of services supplied through Mode 1 is above 60 per cent (Ghana, India, Kenya, Pakistan, Papua New Guinea); in others, such as Jamaica, Maldives and Tonga, it is less than 20 per cent (ibid.).

Figure 21. Commonwealth services trade by modes of supply (% of 2017 exports)



Source: Authors using Shingal (2020), based on TisMOS data.

6. COVID-19, the Commonwealth and e-commerce

Emerging evidence suggests that the pandemic has directly accelerated e-commerce in many countries, with a spike in both B2B and B2C online sales, particularly in medical supplies, household essentials and food products (WTO, 2020a). Online marketplaces allow for remote purchases and delivery services that adhere to social distancing, with firms selling online through their own e-commerce-enabled websites or through third-party platforms. In the World Bank's 2020 Impact of COVID Survey with 1,182 firms across four African countries – Niger, Togo, Zambia and Zimbabwe – 266 firms (22.5 per cent of the sample) reported an increase in online business activity as a response to the pandemic (Banga and te Velde, 2020). In the case of manufacturing in CW Africa, evidence suggests firms are increasingly adopting a digital response. For instance, 30 per cent of Kenya Association of Manufacturers members reported a shift/or plans towards a shift to e-commerce (see Box 2). Many businesses in developing CW Asian and African countries are also selling goods and services through social media sites, such as Facebook (see Box 3 on e-commerce in Bangladesh).

However, the e-commerce value chain has also faced several supply-side disruptions, owing to suspension of manufacturing activity, decreased production and labour shortages. For example, in Bangladesh, the e-commerce company Paperfly – a third-party online logistics supplier – experienced an almost 90 per cent decrease in orders during lockdowns as a result of a shortage of qualified workers and safe packaging, poor delivery infrastructure and other factors (see Box 3 for more supply-side disruptions to e-commerce in Bangladesh during COVID-19). Cross-border e-commerce has been further affected by disruptions in transport and logistics services. Air cargo transports 80 per cent of cross-border B2C e-commerce shipments (Majeres, 2020). The introduction of new health regulations has disrupted land, sea and air cargo transportation, and led to the cancellation of flights used to carry postal shipments and other small consignments, while also increasing shipping prices. According to the International Air Transport Association and the Universal Postal Union, problems have been aggravated by administrative and regulatory bottlenecks, as well as crew quarantine conditions, which have prevented cargo flights from keeping pace with demand. In April 2020, air cargo volumes declined by 39 per cent, year on year, and capacity was 45 per cent lower (Lennane, 2020). Disruptions to shipping during the pandemic are also likely to be challenging for SIDS, which rely on sea transportation for cross-border e-commerce and already experience remoteness and marginalisation from the main shipping and trading networks. A 20 per cent drop in vessel calls were observed for SIDS during the second quarter of 2020 (UNCTAD, 2020c).

When analysing the implications of COVID-19 for e-commerce, it is important to understand the heterogeneity in this sector. For instance, cross-border e-commerce has been affected more by disruptions to international transport, logistics and border restrictions,

while domestic e-commerce has accelerated in many CW countries, and has been particularly important for MSMEs. Similarly, firms have adopted different e-commerce business models during the pandemic; some have physical stores and have also started to sell online through their own e-commerce-enabled websites or third-party e-commerce platforms, such as Amazon, or both. Others are e-tailers – that is, firms that sell only through online channels (using their own website or third-party platforms) and do not have a physical store. Then there are third-party market places or e-commerce platforms that are helping connect buyers and sellers online. Data from 257 representatives of e-commerce businesses in 23 countries, mainly LDCs in Africa and Asia-Pacific, suggests that third-party online marketplaces have been more resilient to the pandemic than e-commerce companies; nearly 60 per cent of third-party marketplaces, which are wholly digital, report an increase in monthly sales since the outbreak of the pandemic (UNCTAD, 2020c). However, data from the COVID-19 Commerce Insight shows that pure digital retails or e-tailers, which sell goods and services only through an online channel, have not been faring well in some developing Commonwealth countries, such as Malaysia, South Africa, India and Nigeria (Howe, 2020). In some markets, including India and South Africa, this could also be explained by the ban on transportation of goods deemed non-essential, which has effectively suspended e-commerce for small businesses (ibid).

Table 6 shows a significant disparity in internet shopping across the Commonwealth: over 60 per cent of the population is undertaking internet shopping in CW developed countries

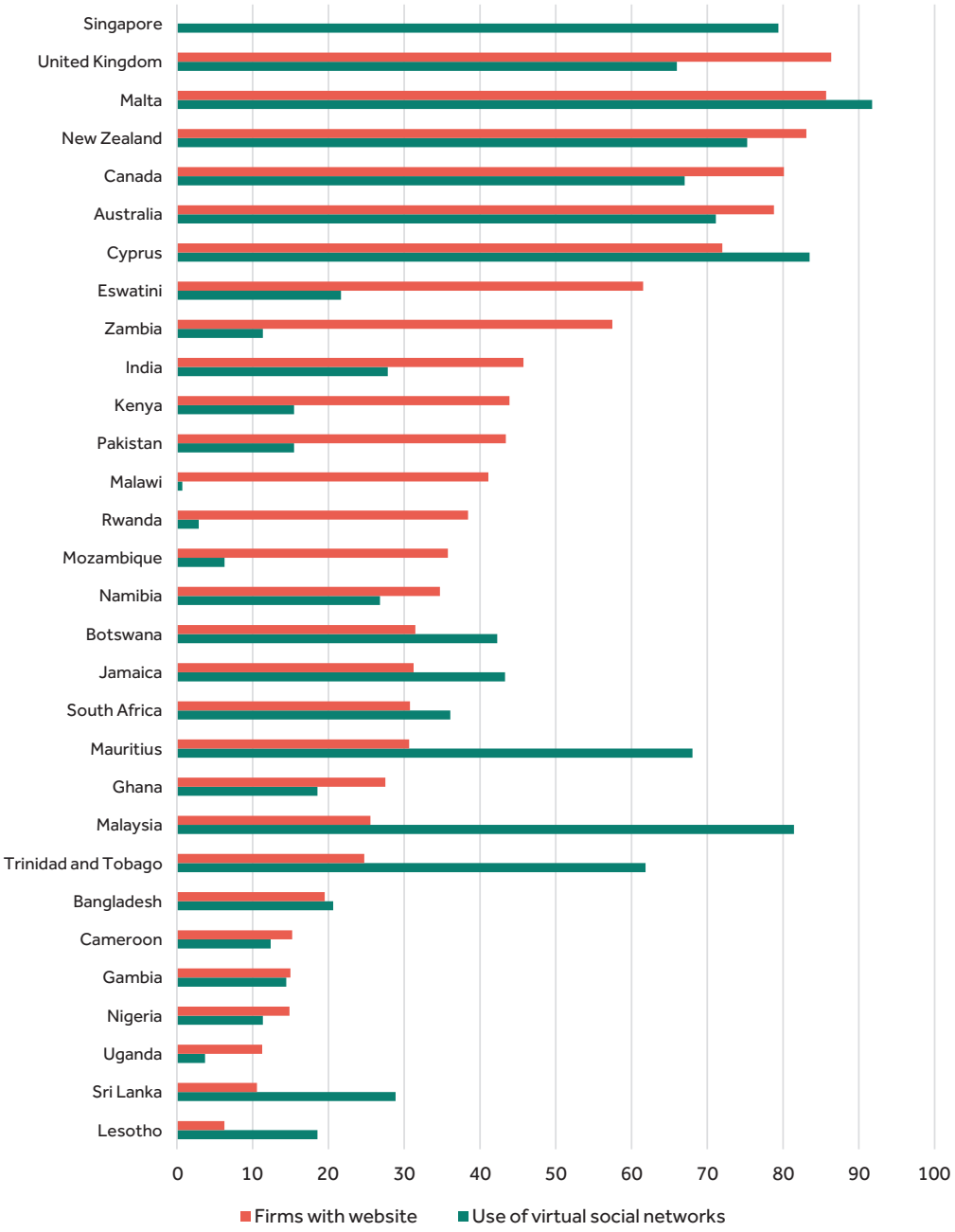
Table 6. Internet shopping, ICT skills and online banking in the Commonwealth

	Internet shopping (%)	Online access to financial account (%)	ICT skills (%)
UK	95.86	55.84	73.58
New Zealand	88.63	86.73	73.41
Canada	87.95	81.53	77.6
Australia	86.81	79.37	76.02
Singapore	61.58	56.92	92.69
Malta	59.74	51.17	67.18
Malaysia	43.46	43.4	86.39
Cyprus	41.45	42.11	71.23
Trinidad and Tobago	21.09	17.67	41.24
Mauritius	18.46	18.11	56.09
Namibia	15.54	48.77	35.1
Kenya	11.83	66.35	62.03
South Africa	10.05	28.13	24.43
Zambia	6.5	40.46	31.17
Mozambique	5.48	34.3	8.67
Ghana	5.41	32.31	52.14
Nigeria	5.21	19.7	28.86
Uganda	4.91	30.31	28.87
Botswana	4.6	36.21	36.86
India	3.63	5.99	58.68
Cameroon	3.51	24.15	42.89
Sri Lanka	3.45	9.76	52.61
Malawi	2.93	31.01	11.72
Lesotho	2.59	30.94	30.82
Bangladesh	1.59	14.08	32.6
Rwanda	1.23	14.35	44.78
Pakistan	1.05	11.51	50.23
Gambia			46.9
Jamaica			41.12
Eswatini			30.18

Source: Authors based on WEF NRI 2020.

but this falls to less than 10 per cent in many CW Asian and African countries. This can be traced to differences across ICT skills and online account penetration in Table 6. Figure 22 further shows how Commonwealth countries are poised to conduct e-commerce; while over 60 per cent of firms in CW developed countries (the UK, Malta, New Zealand, Canada, Australia, Cyprus) have a website, this falls to less than 20 per cent in several CW African countries (Lesotho, Nigeria, Uganda, The Gambia, Cameroon, Kenya, Rwanda) and less than 30 per cent in some CW Asian countries (Bangladesh, India, Malaysia, Sri Lanka). In some Commonwealth countries, there is potential for e-commerce through social media, including Bangladesh, Sri Lanka, Botswana, Jamaica, South Africa and Mauritius.

Figure 22. Channels of conducting e-commerce (%)



Note: Data for firms with website in Singapore is missing.
Source: Authors based on WEF NRI 2020.

Box 2. Commonwealth African firms and e-commerce responses to COVID-19

Established online marketplaces in Kenya have ramped up their operations in response to the COVID-19 outbreak, leading to a rise in e-commerce. These include Twiga Foods, Selina Wamucii, M-Farm, Farmers Market Kenya, Farmbiz Africa and Mkulima Young. Local platform GoBeba reported that its gross merchandise value tripled in the three weeks following the first reported COVID-19 case in Kenya on 13 March 2020, driven by sales of household essentials. Sky.Garden has seen an increase in demand for Fast-Moving Consumer Goods, productivity tools (computing products and accessories), entertainment electronics (TVs, home theatre, decoders), educational material and toys. Java House has also partnered with Uber Eats, Jumia Food and Glovo to encourage Kenyans to make use of online shopping and food deliveries. As a response to the crisis, 30 per cent of Kenya Association of Manufacturing (KAM) members surveyed are now aiming to increase online capabilities. Jumia has partnered with the Kenya Private Sector Alliance to enable local businesses to set up its e-shop on the Jumia platform at no start-up costs (Kariuki, 2020), with Jumia halving its commission on vendors for locally manufactured goods to 1 per cent. KAM has also launched a digital directory for locally manufactured goods to help customers shop online (Oxford Business Group, 2020). To encourage the use of digital payments by MSMEs, Safaricom is allowing them to increase their daily M-Pesa transaction limit from approximately US$700 to $1,500.

In a forthcoming paper, Banga et al. (2021) conduct a survey and interviews of 30 firms in Kenya, Rwanda, Nigeria and South Africa on e-commerce use in 2020 and find that, of 21 respondents, 13 have witnessed an increase in online sales through e-commerce since the onset of the COVID-19 pandemic. The average share of online sales since COVID-19 began is 43 per cent, up from 31 per cent in 2019. Interestingly, the average share of online sales in small firms has gone up by 13 percentage points from 49 per cent in 2019 to 62 per cent during COVID-19. This aligns with a broader United Nations Economic Commission for Africa outlook survey of 206 firms across Africa in June-July 2020, which found the setting-up of online platforms to be the top priority of companies responding to the COVID-19 crisis. Most firms are, however, selling through their own e-commerce website; commission fees charged by third-party e-commerce platforms (10–15 per cent) are a key obstacle for selling on cross-border platforms. Interestingly, the top five challenges to leveraging e-commerce, including for post-COVID recovery, as reported by firms, are traditional challenges to cross-border physical trade: (i) postal competence, delivery and transport costs; (ii) issues on taxation: foreign taxation, double taxation, VAT regulations; (iii) lack of reliable payment solutions; (iv) unawareness regarding national and regional rules; and (v) custom duties and customs procedures. Consumer protection has emerged as a new obstacle to e-commerce: 60 per cent of small firms in the sample rank low online trust as a primary obstacle constraining local e-commerce. Low online trust of consumers can stem from concerns around privacy of their data, cyber-crime and lack of dispute resolution mechanisms. Younger populations are using e-commerce platforms more and have higher online trust but low purchasing power. Lack of reliable online payment systems is also constraining cross-border e-commerce; some local payment providers, such as Equitel and Pespal, do not work on internationally hosted websites.

Source: Banga (2020); Banga et al. (2021).

Box 3. COVID-19 and e-commerce in Bangladesh: which platforms are benefiting?

The contribution of e-commerce to GDP in Bangladesh is estimated at 0.2 per cent, with the sector focused on B2C, B2B and C2C business strategies. Roughly 90 per cent of e-commerce is B2C, with f-commerce (e-commerce through the virtual marketplace in Facebook) emerging as the most prominent channel. There are an estimated 2,500 e-commerce websites, selling products worth over US$2 billion, with more than 300,000 stores operating through Facebook. The e-Commerce Association of Bangladesh estimates that, of the total workforce in the sector, 26 per cent are women and 74 per cent are men.

There has been a 70–80 per cent growth in online sales during the pandemic as compared with regular times. Some types of e-commerce platforms—such as online groceries and food deliveries—have witnessed significant growth in orders, with wholly digital businesses faring better. On the demand side, online marketplaces enabling remote purchases and delivery services that adhere to social distancing, with firms selling online through their own e-commerce enabled websites or through third-party platforms such as ClickBD and Daraz, have seen an estimated increase of around three to four times the number of pre-pandemic orders for necessities and a sharp decline in orders for luxuries (LightCastle, 2020). Companies such as Chaldal.com, one of the larger B2C businesses specialising in grocery delivery, have attempted to improve their own capacity significantly through the employment of more delivery drivers. The average order size has risen from BDT 1,300 to BDT 3,750. A number of e-commerce businesses have adapted by diversifying into essentials and online groceries, such as AjkerDeal.com, PriyoShop.com, Bikroy and Kotha.com. The negative supply shock in other sectors, such as

garments, has also created incentives for firms to switch to online sales channels. Of 500 MSMEs surveyed, 9 per cent have increased or started using the internet, social media, specialised apps and other digital platforms in their daily business operations as a response to the pandemic (UNCTAD, 2020b).

Some platforms, such as third-party logistics suppliers, have suffered from supply-side shocks, including labour shortages, initial collapse of the postal delivery system and suspension of manufacturing operations in production houses in key neighbouring partners India and China. Around 40–50 percent of restaurants have also closed down, leading to a fall in business and a decline in food delivery services; ridesharing by Uber and Pathao has also been banned to limit the spread of COVID-19. Third-party logistics suppliers in Bangladesh that do not sell online groceries and essentials, such as Paperfly, have experienced a 90 per cent fall in orders owing to supply-side disruptions (LightCastle, 2020); labour shortages have increased with workers migrating out of Dhaka. The demand for e-health and EdTech has increased but, since e-services and the e-commerce industry are highly dependent on day-wage/contractual earners, the sudden outflow of workers from the city has led to serious staffing shortages. Overall, an e-Commerce Association of Bangladesh study involving 1,100 of its member companies estimated a loss of BDT 666 crore directly to the industry as a whole, with a significant loss in e-commerce sales and sales for businesses not involved in the sale of necessities (ibid.).

Source: Banga and Mendez-Parra (2021).

7. COVID-19 and policy priorities for the Commonwealth to leverage digital trade

Responsive policies are needed to leverage digitalisation for post-crisis recovery. Key enablers to digital trade include digital access and digital infrastructure development, awareness and skills related to e-commerce, mobile financial services and online payment systems, trade logistics and trade facilitation.

7.1 Boosting digital access and digital infrastructure development

Access to good quality and reliable internet represents a necessary condition for digital trade. Currently, CW developing countries are lagging across key digital access and performance indicators (Table 7). While more than 80 per cent of the population in CW developed countries has access to internet, this falls to less than 30 per cent of the population in several CW developing countries, such as Pakistan, Bangladesh, Rwanda, Tanzania, Uganda and Nigeria. Similarly, a significant gap can be observed across CW developed and developing countries in terms of fixed broadband subscriptions: while 40 out 100 people in the UK and Canada have a fixed broadband subscription, fewer than 5 per 100 people have fixed broadband in South Africa, Fiji, Tanzania, Kenya and Bangladesh. The digital divide in access is partially explained by differences in affordability of internet. The poorest Commonwealth members have broadband that costs almost 11 times as much as that in developed economies, and more than double the Commonwealth average (Ashton-Hart, 2020). Another reason is a divide in digital skills (see Table 6).

COVID-19 further threatens to exacerbate the digital divide within the Commonwealth, and consequently the divide in digital trade across CW developed and developing members. The pandemic has given a boost to internet demand but this is likely to benefit CW developed countries more; these countries are advanced in terms of development and use of digital economy, with better infrastructure, more widespread access to fixed network technologies, larger capacity and more robust networks to deal with the surge in demand for digital infrastructure and rising internet traffic as a result of the pandemic (Strusasi and Houngbonon, 2020). In some developing CW countries, the surge in internet demand has come at the cost of overall decline in broadband speeds.

Table 8 shows that average download speeds during the lockdown period[10] were higher in CW developed countries compared with CW developing members, with significant differences across countries. For example, average download speed was above 50 Mbps in Singapore, New Zealand and Canada but less than 5 Mbps in Tanzania, Mozambique,

Table 7. Digital access in the Commonwealth

Country	Individuals using the Internet (% of population)	Fixed broadband subscriptions (per 100 people)	Mobile cellular subscriptions (per 100 people)
Brunei Darussalam	95.00	12.51	128.65
UK	92.52	39.60	117.55
Canada	91.00	39.78	92.53
New Zealand	90.81	34.72	134.93
Singapore	88.95	25.81	156.38
Australia	86.55	34.54	110.62
Cyprus	86.06	37.79	143.85
The Bahamas	85.00	21.13	109.25
Malaysia	84.21	9.28	139.60
Barbados	81.76	37.21	108.61
St Kitts and Nevis	80.71	16.65	147.71
Trinidad and Tobago	77.33	24.71	155.11
Antigua and Barbuda	76.00	9.43	192.82
Maldives	63.19	9.94	155.95
Grenada	59.07	22.84	102.08
Seychelles	58.77	27.60	198.15
South Africa	56.17	2.14	165.60
Jamaica	55.07	10.78	102.56
Saint Lucia	50.82	17.74	101.68
Fiji	49.97	1.48	117.83
Belize	47.08	7.58	65.30
Botswana	47.00	1.95	173.81
Eswatini	47.00	0.71	93.53
Nigeria	42.00	0.04	88.18
Tonga	41.25	3.54	59.43
Ghana	39.00	0.19	134.32
India	34.45	1.45	84.27
Sri Lanka	34.11	7.21	115.06
Vanuatu	25.72	1.59	88.44
Tanzania	25.00	1.78	82.21
Uganda	23.71	0.03	57.27
Cameroon	23.20	0.77	81.76
Kenya	22.57	0.93	103.77
St Vincent and the Grenadines	22.39	19.52	92.87
Rwanda	21.77	0.07	76.49
The Gambia	19.84	0.19	139.53
Pakistan	17.07	0.81	76.38
Zambia	14.30	0.50	96.41
Malawi	13.78	0.06	47.78
Bangladesh	12.90	4.96	101.55
Solomon Islands	11.92	0.16	71.38
Papua New Guinea	11.21	0.21	47.62
Mozambique	10.00	0.24	47.72
Sierra Leone	9.00		86.13

Source: World Development Indicators data for 2019.

Table 8. Average download speeds in Commonwealth countries, Mbps

	Mean download speed during lockdown period (Mbps)	% change during lockdown period compared with non-lockdown period
Singapore	76.99	–5.92%
New Zealand	66.33	–17.88%
Canada	56.36	–10.82%
Malaysia	46.26	–29.51%
UK	40.62	–1.70%
Trinidad and Tobago	40.14	19.16%
Australia	28.45	5.38%
Jamaica	25.47	7.68%
Sri Lanka	20.85	–23.29%
Cyprus	17.64	–3.79%
South Africa	14.85	–5.48%
India	12.92	–21.05%
Kenya	8.21	–8.50%
Mauritius	6.13	–12.82%
Guyana	5.85	8.51%
Uganda	5.2	–7.80%
Ghana	5.14	–24.58%
Tanzania	4.85	–5.65%
Mozambique	3.9	–5.73%
Nigeria	3.15	–20.84%
Bangladesh	2.79	–21.76%
Pakistan	2.31	0.87%

Source: data is from Cable.co.uk (2020)

Bangladesh and Pakistan. The decline in mean speeds during lockdowns was also higher in developing Commonwealth countries – perhaps because of higher sensitivity to surges in demand – with an over 30 percentage point decline in Malaysia, 23 percentage points in Sri Lanka, 24 percentage points in Ghana and 21 percentage points in India. A number of studies have linked higher broadband speed to increases in GDP and productivity (Carew et al., 2018; Katz and Callorda, 2019), with evidence for the Commonwealth indicating that, if 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). The reverse also holds a valid scenario: decreases in broadband speed of Commonwealth countries as seen in Table 8 can have an adverse impact on GDP while developed Commonwealth countries will be able to, at least partially, offset the negative effects of the pandemic (ITU, 2020).

Some CW countries successfully launched initiatives to boost digital connectivity during the pandemic. For instance, Ghana allocated emergency spectrum; Malaysia provided free 1 GB wireless data per day; and Australia allowed flexibility in spectrum use (ITU, 2020). Intra-CW efforts towards infrastructure-sharing arrangements can be critical for cost-saving, efficient spectrum allocation, more competition in telecommunication markets and investment in building foundation digital infrastructure such as digitalised power grids for more reliable electricity supply. A good example already exists: to expand digital connectivity, Kenya granted a Unified Licence for Mobile Virtual Network Operators to three companies that use Airtel India's digital infrastructure to offer mobile money and data services in Kenya (Ochieng, 2018). Other Commonwealth development partners can also play a key role in providing support to the development or acceleration of CW developing countries' initiatives in improving digital connectivity, particularly through

strengthening the broadband infrastructure by laying new underground and aerial cross-border fibre-optic cables or buying/renting spare capacity on existing ones. Progress at the multilateral level on the ITA can also lower barriers to trade in much of the critical infrastructure equipment necessary for digital trade; however, only two CW African countries – Mauritius and Seychelles – are signatories to the agreement.

7.2 Trade logistics, facilitation and online payments

According to the findings of an ITC survey based on 2,200 responses, the share of logistics costs in the final price in cross-border e-commerce transactions is almost twice as high for firms in developing countries (26 per cent) compared with developed countries (14 per cent). An extensive national postal network with robust delivery capacity and an efficient logistics system is essential for e-commerce growth. The Commonwealth Secretariat (2020a) compares Commonwealth countries across key trade logistics indicators – such as days taken to clear customers, postal coverage and reliability, and logistical performance – and finds that CW developed countries and Commonwealth countries in Asia and Europe perform above the world average, but Commonwealth low-income countries and those in Africa perform worse than the Commonwealth and world averages. Except for postal service penetration and customs export clearance, Commonwealth SS perform worse than the average across all indicators. Of the 30 Commonwealth SS 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 relatively small and remote Commonwealth countries. COVID-19 has magnified challenges related to border operations, customs cooperation and trade facilitation and automation. The cost of air freight, particularly in East African countries, has escalated drastically as a result of the pandemic (EABC, 2020).

Digital trade facilitation (e.g. electronic cargo tracking), automation of customs, digital signature and digital financial inclusion hold immense potential to boost digital trade. It is interesting to note that, while CW developed countries continue to lead in financial technology services, Kenya, India and Uganda have made significant progress in increasing mobile money service penetration – by about 40 percentage points from 2011 to 2017 (Commonwealth Secretariat, 2020a). Digital payments have emerged as a key pillar for e-commerce during the pandemic. Xente, an e-commerce and financial services mobile app based in Uganda, waived set-up and commission fees for small businesses during the first three months of the pandemic, which led to a 10 per cent increase in B2C transactions and a 200 per cent jump in B2B turnover (UNCTAD, 2020b). In Rwanda, the government has put in place various measures for MSMEs, such as removal of transaction fees on digital payments (Benni, 2021), which have contributed towards ramping-up e-commerce in the country.

In Kenya, the Central Bank has waived fees for financial transfers via mobile banking and Safaricom has removed fees for all user-to-user mobile money transactions under US$9.42, in addition to increasing the daily transaction limit for small and medium enterprises (Bright, 2020b). Nigeria-based Paga and JumiaPay have also both reduced user fees for digital transactions since the start of the pandemic (Oxford Business Group, 2020). The interoperability of locally available mobile financial solutions with international payment systems has emerged as an important enabler of cross-border e-commerce. It takes one day for a merchant in Bangladesh to receive payment for domestic e-commerce, three days in Pakistan and five days in Malaysia compared with five days in Bangladesh for cross-border e-commerce, five days in Pakistan and seven days in Malaysia (Banga and Mendez-Parra, 2020).

7.3 Development of an appropriate legal and regulatory framework for digital trade

Surveying 23 countries, mainly LDCs, UNCTAD (2020b) finds that the top measure to support COVID-19 economic recovery plans is to develop or update national e-commerce strategies. Leveraging e-commerce is constrained by the absence of an appropriate regulatory framework, the high cost of infrastructure services such as postal competence and port logistics, limited financial instruments, a lack of stakeholder buy-in and poorer overall ease of doing business in many CW developing countries. Moreover, many instances of development strategies have been marred as a result of the lack of an integrated approach, which

leads to policy instability and, inevitably, a lack of commitment by policy planners to implement them. The progress of national e-commerce policies in CW developing countries that feed into broader digital strategies is important, alongside efforts to create an enabling environment for digital trade in the Commonwealth. Further research into e-commerce readiness across CW countries is needed. Some progress has been made on this front, with the launch of the Commonwealth Secretariat's E-commerce Readiness Assessment Report for Sri Lanka (Commonwealth Secretariat, 2020b).

National e-commerce strategies should 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. It is important to put in place complementary policies that support inclusive digitalisation. A study by Krishnan et al. (2020) drawing on a survey of 821 farmers in Uganda using any of the four digital platforms – a Ugandan government-owned app called E-Voucher and private sector-owned apps MUIIS, KOPGT and EzyAgric – highlights the existence of a "dual" gendered divide on these platforms (Box 4).

As mentioned above, e-commerce, and more broadly digital trade, is underpinned by data flows, requiring a set of policies and regulation governing, among other aspects, data protection, data privacy, data processing, e-transactions and digital signatures. Using World Economic Forum (WEF) Network Readiness Index (NRI) 2019 data for Commonwealth countries, Table 9 shows that CW developed countries fare better in terms of regulatory quality, the state of the ICT regulatory environment and the adaptability of legal frameworks to digital technologies. Moreover, many CW African and SS members have legislation in only one of the four areas identified as necessary for e-trade to function effectively.

Development of an appropriate regulatory framework; addressing key issues of consumer protection, including through online dispute resolution, data governance and cybersecurity; and competition can further facilitate digital trust for cross-border e-commerce in CW developing countries and enable the management of e-commerce in a more inclusive

Box 4. Ag-platforms: mitigating the effects of COVID-19 for Ugandan farmers

The government of Uganda put containment measures in place to tackle COVID-19, including quarantines; bans on public gatherings and weekly markets; closures of schools, borders and nonessential retail outlets; and the suspension of international flights. These measures have negatively affected Ugandan businesses that deal in agriculture, with 71 per cent of agricultural firms reporting a severe decline in demand.

A survey of over 800 farmers in Uganda in 2019, conducted by the Overseas Development Institute, suggests that the top reason to register on ag-platforms is to find new buyers, cited by 20 per cent of platformised farmers, which has become even more difficult during the pandemic. Ag-platforms have been somewhat successful in achieving this: 23.44 per cent of platformised farmers have diversified into new markets, compared with only 19 per cent of non-users. With higher access to yield-enhancing services and higher market access through e-commerce platforms, Ugandan farmers on platforms are better linked into markets than non-platformised farmers. Platformised women farmers are also doing better than those who are not: only 12.5 per cent of female platformised farmers report no access to training, compared with 46 per cent of female non-platformised farmers. Women on platforms also seem to have higher access to formal work than women who are not on platforms: 21 per cent are given a contract for their produce and 49.5 per cent have access to working capital loans, as compared with 9.32 and 29 per cent of non-platformised female farmers, respectively. However, there is a "dual" gender digital divide in platforms. First, a lower share of female platformised farmers – 22 per cent – has access to the internet (compared with 38 per cent of male users). Second, in some cases, such as for maize producers, male platformised farmers are found to be more productive than female platformised farmers. The digital gender divide is likely being exacerbated by other major challenges, such as lack of tenure security, informal institutional constraints and intra-household dynamics.

In a forthcoming paper, Banga et al. report on a survey of over 400 Ugandan entrepreneurs, offering further insights on ag-platform use and COVID-19. Of 350 surveyed Ugandan youth entrepreneurs involved in agricultural value chains, 70 per cent rank a "lack of awareness of digital apps" as the primary obstacle in using ag-platforms. The youth who are on ag-platforms, however, report increased use of ag-platforms during COVID-19, mainly for finding information on COVID-19 support and to get more information and to contact buyers and sellers online.

Source: Krishnan et al. (2020).

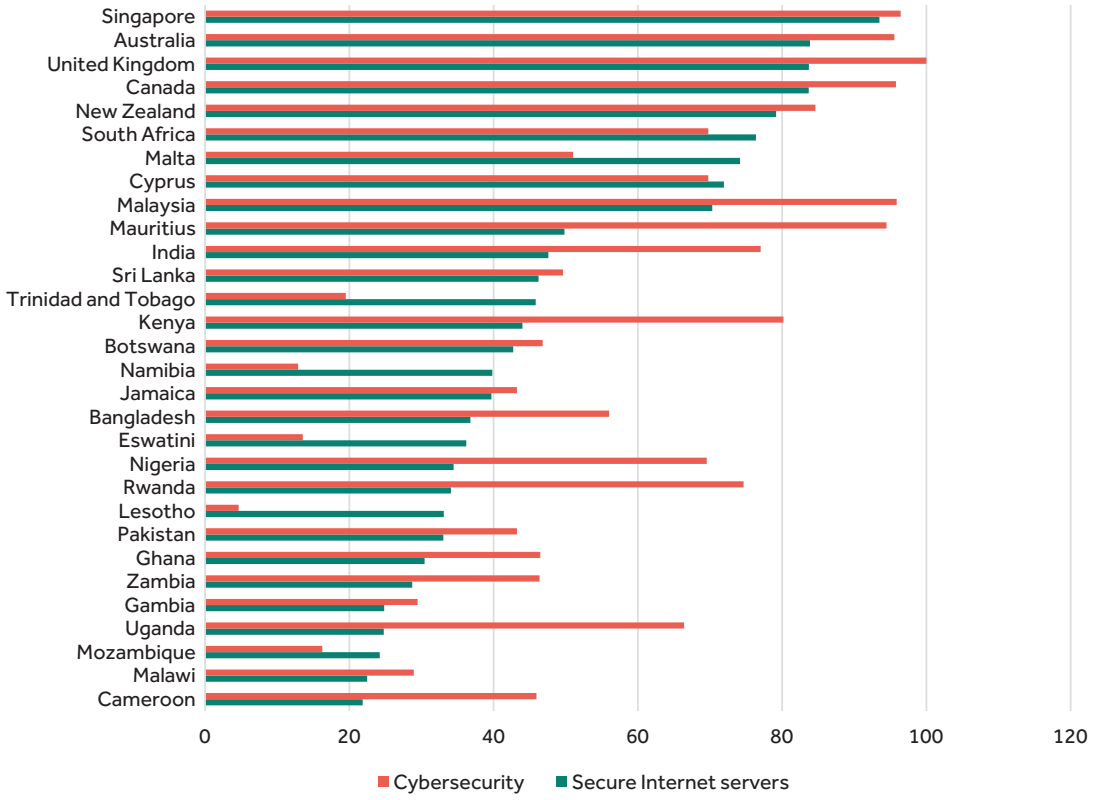
Table 9. Commonwealth performance in ICT and e-commerce regulations

	Regulatory quality index	ICT regulatory environment index	Legal framework's adaptability to emerging technologies	e-Commerce legislation score
Australia	93.91	96.72	70.66	100
Bangladesh	33.22	73.75	18.21	75
Botswana	61.43	85.72	22.24	50
Cameroon	33.81	61.39	26.29	75
Canada	88.09	86.3	77.69	100
Cyprus	73.82	86.49	48.15	100
Eswatini	38.11	55.98	11.5	0
The Gambia	37.5	72.59	40.81	100
Ghana	49.65	89.19	29.16	100
India	47.37	74.71	42.78	75
Jamaica	57.55	78.19	23.96	100
Kenya	46.42	88.61	37.75	100
Lesotho	40.48	65.83	0	50
Malawi	36.64	88.03	8.87	75
Malaysia	66.44	88.03	67.58	100
Malta	80.86	97.3	67.02	100
Mauritius	74.04	80.89	30.79	75
Mozambique	35.42	54.06	10.34	50
Namibia	50.26	69.12	35.76	0
New Zealand	95	80.51	65.82	100
Nigeria	31.98	77.99	22.7	75
Pakistan	37.22	89.19	43.43	50
Rwanda	53.27	82.62	44.54	75
Singapore	98.36	93.25	86.76	100
South Africa	55.2	69.88	51.13	100
Sri Lanka	48.06	59.46	49.83	75
Trinidad and Tobago	50.96	86.1	10.95	100
Uganda	45.88	86.88	17.92	75
UK	90.22	97.3	74.3	100
Zambia	41.67	70.28	15.07	100

Note: Data is for 2018–2019.
Source: WEF NRI2020, UNCTAD Cyber Law Tracker 2020.

manner. From Figure 23, it can be noted some CWC developing countries, such as South Africa and Malaysia, fare relatively well in terms of digital trust related to cybersecurity and secure internet servers. Among SS, Jamaica has made significant progress in terms of improving cybersecurity and regulatory frameworks for boosting digital trade and e-commerce, including as a response to the pandemic (see Box 5). Some CW developing countries have devised approaches to tax the rising trade in digital services by digital monopolies. Malaysia, for instance, introduced a 6 per cent digital tax on 1 January 2020 (Reuters, 2020b). Similarly, in India, the government introduced a 2 per cent tax on digital services provided by foreign companies, covering streaming services as well as e-commerce revenues on sites such as Amazon (The Phuket News, 2020). Kenya's New Financial Bill, 2020, also proposes that revenue from services provided through a digital marketplace in Kenya will be taxed at the rate of 1.5 per cent on the gross transactional value (Olowogboyega, 2020). The UK has also introduced a Digital Services Tax as part of the Finance Bill 2020; this represents a 2 per cent tax on revenues of certain search engines, social medial platforms and online marketplaces (Seidel, 2021).

Figure 23. Digital trust in the Commonwealth



Source: Cybersecurity Index value and normalised secure internet servers (per million population) from WEF NRI 2020.

Box 5. Leveraging digital trade: Jamaica's response to COVID-19

The Government of Jamaica has partnered with international firms to deliver digital marketing solutions and e-commerce opportunities to MSMEs as a mechanism to cope with the impact of physical distancing and other restrictive measures owing to the COVID 19 pandemic. This digitalisation programme is being spearheaded by the Ministry of Industry, Investment and Commerce. Over 1,000 MSMEs have created webpages and increased their market visibility to customers locally and overseas. Merchants can create their own webpage in less than five minutes at no cost. Moreover, the country's Universal Service Fund provided $17.5 million in ICT support to the Ministry of Health and Wellness to cope with the crisis (Angus, 2020). Furthermore, the government has commenced implementation of the National Public Key Infrastructure (NPKI) project (Jamaica Observer, 2020), which will enable individuals and entities to utilise e-signatures to transact and do business digitally with all state agencies in a safe environment. The NPKI system incorporates policies, institutions and technologies designed to manage the distribution, authentication and revocation of digital certificates – the electronic equivalent of a handwritten signature or seal – which will be issued by the certifying authority – e-Gov Jamaica Limited.

Jamaica is also one of the few countries in the Caribbean with a score of 4 (highest) on the UNCTAD's Global Cyber-Law Tracker. It has active policies on all four key areas critical for boosting digital trade: law on e-transactions, consumer protection, data protection and cybercrime. In fact, Jamaica is the highest scoring Caribbean country on the United Nations' Global Cybersecurity Index.

8. Conclusion

There exists a significant digital divide within the Commonwealth, in terms of access to, and uptake of, digital infrastructure and technologies, with CW developing countries also lagging behind on key digital enablers. This means that not all Commonwealth countries

will be able to leverage digital trade in any post-crisis recovery. In fact, COVID-19 and pressures to digitalise may exacerbate existing inequalities and/or create new economic and social divides within the Commonwealth, if appropriate policies are not put in place. Digital divides may also amplify the challenges facing some Commonwealth countries in the post COVID-19 recovery phase.

Responsive policies are therefore needed to leverage digital trade, particularly in CW developing countries and LDCs. Key enablers to digital trade include digital access and digital infrastructure development, awareness and skills related to e-commerce, mobile financial services and online payment systems, trade logistics and trade facilitation. There is much scope for boosting intra-CW digital trade through digital trade facilitation (e.g. electronic cargo tracking), automation of customs, digital signature and digital financial inclusion. National e-commerce strategies should aim at developing the e-commerce sector in the country by providing the required infrastructure, developing complementary skills and putting in place rules and regulations governing e-commerce.

Glossary

Indicator	Definition
ICT services	Information, communication and technology services such as computer software services, cloud computing services, news information services, etc.
Digitally deliverable services (DDS)	An aggregation of ICT services and ICT-enabled services and capture services that *can* be delivered remotely. This category includes insurance and pension services, sales and marketing, management, financial services, charges for the use of intellectual property, engineering and technical services, education and training services, other business services and audiovisual and related services. The DDS series is based on the concept of potentially ICT-enabled services by UNCTAD (2015).
Digitisable products/ electronically transmitted (ET) products	UNCTAD defines four categories of digitalised products as ET products: films (HS 37), printed matter (HS 49), sounds, media and software (HS 8524) and videogames (HS 9504).
ICT goods	Includes computer and peripheral equipment, communication equipment, consumer electronics equipment electronics components and other misc. items such as transmission apparatus, lasers etc. A further HS six-digit classification of ICT goods is provided by UNCTADstat.[11]

Notes

1 China, the USA, EU-27, the UK and Australia.

2 https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker

3 There are 33 Commonwealth countries (Antigua and Barbuda, Australia, Barbados, Belize, Botswana, Brunei Darussalam, Canada, Cyprus, Eswatini, Fiji, The Gambia, Ghana, Guyana, India, Jamaica, Kenya, Malawi, Malaysia, Malta, Mauritius, Namibia, New Zealand, Nigeria, Pakistan, Rwanda, Saint Lucia, St Vincent and the Grenadines, Samoa, Seychelles, Singapore, South Africa, the UK and Zambia), except for the following years where country data is unavailable: 2010 (Belize), 2011, 2012, 2014 (Kenya), 2016 (Nigeria) and 2018 (Jamaica).

4 There are 31 Commonwealth countries (Antigua and Barbuda, Australia, Barbados, Belize, Botswana, Brunei Darussalam, Canada, Cyprus, Eswatini, Fiji, Ghana, Guyana, India, Jamaica, Kenya, Malawi, Malaysia, Malta, Mauritius, Namibia, New Zealand, Pakistan, Rwanda, Saint Lucia, St Vincent and the Grenadines, Samoa, Seychelles, Singapore, South Africa, the UK and Zambia) with complete import and export data per ICT goods per category from 2010 to 2019; some countries (Belize, Jamaica, Kenya, Samoa,

Seychelles) have missing data in a limited number of product categories and a few years. The missing data does not substantially change the outcome regarding the shares of each ICT product category in total ICT goods trade.

5 While we note that the handbook provided a product list of potentially ICT-enabled services, the list entails a sufficiently detailed degree of product disaggregation, such as at the level of Extended Balance of Payments Services 2010 categories, which are typically available to only OECD members.

6 The lowest value on the index is for Niger (at 5.4) and the highest value is for Netherlands (at 96.4).

7 Currently, 81 countries are bound by the ITA to eliminate and bind custom duties at zero for all products specified in the agreement, which covers a large number of high technology products, including computers, telecommunication equipment, semiconductors, manufacturing and testing equipment, software and scientific instruments, as well as most of the parts and accessories of these products.

8 https://blog.bham.ac.uk/cityredi/wp-content/uploads/sites/15/2021/01/WK-42-v2.pdf

9 https://www.idc.com/tracker/showproductinfo.jsp?containerId=IDC_P25240

10 The lockdown period in a country is identified as the period between the first day on which the Oxford COVID-19 Government Response Tracker stringency exceeded 50 and the last day it exceeded 50. See https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker for more information on the tracker.

11 https://unctadstat.unctad.org/en/Classifications/DimHS2017Products_Ict_Hierarchy.pdf

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Annex 1. Country groupings

Commonwealth country	Economic development	Geographic location	SS	SIDS	LDCs
Antigua and Barbuda	Developing	Caribbean	SS	SIDS	
Australia	Developed	Developed			
The Bahamas	Developing	Caribbean	SS	SIDS	
Bangladesh	Developing	Asia			LDC
Barbados	Developing	Caribbean	SS	SIDS	
Belize	Developing	Caribbean	SS	SIDS	
Botswana	Developing	Africa	SS		
Brunei Darussalam	Developing	Asia	SS		
Cameroon	Developing	Africa			
Canada	Developed	Developed			
Cyprus	Developed	Developed	SS		
Dominica	Developing	Caribbean	SS	SIDS	
Eswatini	Developing	Africa	SS		
Fiji	Developing	Pacific	SS	SIDS	
The Gambia	Developing	Africa			LDC
Ghana	Developing	Africa			
Grenada	Developing	Caribbean		SIDS	
Guyana	Developing	Caribbean	SS	SIDS	
India	Developing	Asia			
Jamaica	Developing	Caribbean	SS	SIDS	
Kenya	Developing	Africa			
Kiribati	Developing	Pacific	SS	SIDS	LDC
Lesotho	Developing	Africa	SS		LDC
Malawi	Developing	Africa			LDC
Malaysia	Developing	Asia			
Maldives	Developing	Asia	SS	SIDS	
Malta	Developed	Developed	SS		
Mauritius	Developing	Africa	SS	SIDS	
Mozambique	Developing	Africa			LDC
Namibia	Developing	Africa	SS		
Nauru	Developing	Pacific	SS	SIDS	
New Zealand	Developed	Developed			
Nigeria	Developing	Africa			
Pakistan	Developing	Asia			
Papua New Guinea	Developing	Pacific	SS	SIDS	
Rwanda	Developing	Africa			LDC
St Kitts and Nevis	Developing	Caribbean	SS	SIDS	
Saint Lucia	Developing	Caribbean	SS	SIDS	
ST Vincent and the Grenadines	Developing	Caribbean	SS	SIDS	
Samoa	Developing	Pacific	SS	SIDS	
Seychelles	Developing	Africa	SS	SIDS	
Sierra Leone	Developing	Africa			LDC
Singapore	Developing	Asia		SIDS	

Continued

Commonwealth country	Economic development	Geographic location	SS	SIDS	LDCs
Solomon Islands	Developing	Pacific	SS	SIDS	LDC
South Africa	Developing	Africa			
Sri Lanka	Developing	Asia			
Tanzania, United Republic of	Developing	Africa			LDC
Tonga	Developing	Pacific	SS	SIDS	
Trinidad and Tobago	Developing	Caribbean	SS	SIDS	
Tuvalu	Developing	Pacific	SS	SIDS	LDC
Uganda	Developing	Africa			LDC
UK	Developed	Developed			
Vanuatu	Developing	Pacific	SS	SIDS	LDC
Zambia	Developing	Africa			LDC

Annex 2. Intra-Commonwealth ICT goods trade

Commonwealth country	Economic development	Intra-CW ICT exports		Intra-CW ICT imports	
		US$ millions (avg. 2017–2019)	% share	US$ millions (avg. 2017–2019)	% share
Australia	CW developed	1,082.86	2.74	1,909.09	5.71
Canada	CW developed	382.57	0.97	1,246.44	3.73
Cyprus	CW developed	2.11	0.01	14.38	0.04
UK	CW developed	1,282.13	3.24	1,128.71	3.37
Malta	CW developed	153.73	0.39	52.67	0.16
New Zealand	CW developed	99.06	0.25	360.18	1.08
Belize	CW developing	0.00	0.00	0.24	0.00
Barbados	CW developing	0.60	0.00	4.27	0.01
Brunei Darussalam	CW developing	4.37	0.01	41.89	0.13
Botswana	CW developing	9.51	0.02	121.65	0.36
Fiji	CW developing	10.78	0.03	74.60	0.22
Ghana	CW developing	0.89	0.00	29.51	0.09
Guyana	CW developing	5.77	0.01	6.70	0.02
India	CW developing	574.06	1.45	4,714.76	14.09
Jamaica	CW developing	0.00	0.00	5.87	0.02
Kenya	CW developing	10.68	0.03	38.93	0.12
Sri Lanka	CW developing	7.49	0.02	159.67	0.48
Maldives	CW developing	0.00	0.00	57.46	0.17
Mauritius	CW developing	17.10	0.04	38.18	0.11
Malaysia	CW developing	16,322.58	41.27	6,771.17	20.24
Namibia	CW developing	3.06	0.01	131.07	0.39
Pakistan	CW developing	1.03	0.00	113.72	0.34
Singapore	CW developing	19,000.85	48.04	15,670.95	46.84
Eswatini	CW developing	5.00	0.01	37.14	0.11
Seychelles	CW developing	0.33	0.00	11.15	0.03
South Africa	CW developing	514.55	1.30	448.65	1.34
Lesotho	CW developing/LDC	18.69	0.05	32.58	0.10
Mozambique	CW developing/LDC	0.48	0.00	58.11	0.17
Malawi	CW developing/LDC	3.05	0.01	16.24	0.05
Rwanda	CW developing/LDC	0.94	0.00	13.60	0.04
Tanzania, United Republic of	CW developing/LDC	28.71	0.07	27.57	0.08
Uganda	CW developing/LDC	6.72	0.02	19.90	0.06
Zambia	CW developing/LDC	3.03	0.01	102.41	0.31
Total of country averages 2017–2019		39,552.76	100.00	33,459.46	100.00

Source: Authors based on WITS data.