



Cambodia, COVID-19 and inclusive digital transformation: a seven-point plan

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Executive summary

This paper examines the impact of COVID-19 on sectoral transformation in Cambodia and discusses a seven-point plan to move towards inclusive digitalisation. As of 19 June, there are only 126 registered coronavirus cases in Cambodia;¹, however, Cambodia is facing significant economic losses in the wake of the crisis; economic growth in the country is expected to contract by 1.6% in the baseline scenario and by 5.7% in the downside scenario in 2020 (IMF, 2020).

In Cambodia, the share of services in total exports (average of 2014–2018) is close to 30%, above the world average of 23% (Mendez-Parra, 2020). The travel sub-sector accounts for roughly 80% of total services exports, followed by transport (11.40%). Telecommunications, computer and information services account for 1.72% of total exports. Emerging evidence highlights the negative economic impact of the pandemic across tourism, construction and business services, with limited impact on insurance, financial, telecoms and computer-related services. Within manufacturing, particularly hit are garment exports; there is falling demand from retailers in Europe and the US coupled with reduced access to inputs from China. The Garment Manufacturing Association in Cambodia reports that, as of 4 May, 180 garment factories have suspended operations in Cambodia, with 60 more shutdowns in the pipeline. More than 150,000 workers have been temporarily suspended without clear indication on the resumption of work. The withdrawal of Cambodia from the Everything But Arms initiative will further affect Cambodian exports to the EU.

This paper identifies service industries that can help in mitigating the impact of the economic losses: (i) communication and audio-visual services, including digital animation; (ii) IT-enabled business process outsourcing (BPO) services; and (iii) post and telecoms for e-commerce. The country is home to few but interesting high-quality providers of animation services. Cambodia's IT industry is concentrated primarily in the BPO segment offering services to international clients, such as in data processing, data analysis, document processing and non-voice call centres (e.g. chat services or IT support). New opportunities are arising from e-commerce. Cambodia has the highest internet connectivity growth in the Asia-Pacific region and a very young population, allowing most e-commerce ventures to reach a clientele of 15,000 consumers in 2017 (ITC, 2018). E-commerce has enabled Cambodia to diversify its export basket of manufacturing products. Given cargo delays and border closures during the pandemic, it is important for Cambodia to leverage domestic platforms, such as Tinh Tinh. This may enable greater micro, small and medium-size enterprise participation in e-commerce platforms, which has otherwise been low as a result of the high cost of membership and the commission charged on third-party platforms.

The government is already preparing a long-term strategy for the digital economy (for 2020–2035), which needs to target closing the digital divide and boosting an *inclusive* digital transformation in the wake of economic losses from COVID-19. In a companion report, we discuss key policy areas to foster a digital economy. To leverage digital industries in the COVID-19 recovery, this report build on that report and lays out a seven-point plan for inclusive digital transformation: (i) radically transform innovation in the manufacturing sector; (ii) provide appropriate and quality skills for the future; (iii) nurture the digital start-up economy for an inclusive economy; (iv) protect and enable the most vulnerable groups to take part in the digital economy; (v) ensure a public sector that leads by example; (vi) digitalise trade facilitation and boost e-commerce; and (vii) revise and extend social protection mechanisms to vulnerable groups.

¹ <https://www.worldometers.info/coronavirus/>

Acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BPO	business process outsourcing
CDRI	Cambodia Development Resource Institute
EBA	Everything But Arms
EU	European Union
GDP	gross domestic product
GMAC	Garment Manufacturing Association in Cambodia
GVC	global value chain
ICT	information, communication and technology
ILO	International Labour Organization
IMF	International Monetary Fund
IT	information technology
ITC	International Trade Centre
KAS	Konrad-Adenauer-Stiftung
MSMEs	micro, small and medium enterprises
NSSF	National Social Security Fund
ODI	Overseas Development Institute
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
US	United States
WDI	World Development Indicators
WTTC	World Travel & Tourism Council

1 Introduction

The coronavirus outbreak, the process to withdraw trade preferences and a ban on online gambling have laid bare the fragility of Cambodia's development success. The country is looking for a broader base to transform and recover in an inclusive way from the COVID-19 crisis. The digital economy presents a viable route for achieving this, particularly in Cambodia, where significant policy efforts are already underway to boost digital transformation. A core question for Cambodia's development is whether these efforts are enough to offset employment losses elsewhere, and how inclusive such a services-based transformation really is. This paper examines the impact of COVID-19 on sectoral transformation and discusses a seven-point plan to move towards inclusive digitalisation.

The COVID-19 crisis is expected to wipe out 10.5% of working hours globally in the second quarter of 2020 – equivalent to 305 million full-time workers (ILO, 2020), with large reductions foreseen for Asian economies. Although, as of 26 May, there are only 124 registered coronavirus cases in Cambodia,² with zero deaths, economic growth in Cambodia is expected to contract by 1.6% in the baseline scenario and by 5.7% in the downside scenario in 2020 (IMF, 2020). Cambodia ranks in the top seven low- and middle-income countries most vulnerable to economic losses owing to COVID-19, through both direct and indirect pathways (Rage and te Velde, 2020).

Direct effects include health impacts, lockdowns and flight cancellations, whereas indirect impacts include changing openness to the world and shifting global value chains (GVCs). These pathways will affect sectors differently. For instance, the tourism sector in Cambodia – accounting for 26% of total exports as per the World Development Indicators (WDI) – has already faced the direct impact of COVID-19 through border closures and economic lockdowns, whereas the garments sector has been affected through indirect pathways of disruptions in supply chains and demand from consumers. Cambodian garments are heavily dependent on relatively standard products in a wider GVC, with firms often headquartered in China, exporting to retailers in Europe or the US, which are also closing shop owing to containment measures. On the supply side, the pandemic has reduced access to inputs from China.

A further blow is the withdrawal of Cambodia from Everything But Arms (EBA): the garments sector could face more than \$100 million of additional duties in the EU, with the latter having decided to withdraw trade preferences from August 2020. Micro, small and medium enterprises (MSMEs) are expected to bear the brunt of these economic losses, and, since in most developing countries these firms employ about 70% of the workforce, this will only aggravate the economic downturn the pandemic has brought about. According to an association that represents small businesses and the self-employed, the incomes of small businesses in Cambodia have dropped by an estimated 70% since the beginning of the COVID-19 pandemic (Khmer Times, 2020).

Some sub-sectors will come increasingly in demand, such as communications and information, communication and technology (ICT) services. Homeworking, distance learning, entertainment and people's need to communicate with relations increased global internet traffic by 30% in March 2020 (Akamai, 2020). Recent developments and theoretical discussions also suggest low-income countries have an increasing comparative advantage in exporting services across borders through digital means, as long as there is digital connectivity (Baldwin and Forslid, 2020). There is an urgent need for Cambodia to diversify into these sectors and activities more actively and to increase resilience against economic losses from the pandemic.

Section 2 presents emerging evidence of the sectoral impact of the COVID-19 crisis in Cambodia, focusing on garments, tourism and digital services. Section 3 assesses Cambodia's *inclusive* digital transformation. Section 4 concludes by providing policy suggestions based on a recent study undertaken before the

² <https://www.worldometers.info/coronavirus/>

pandemic outbreak. The recent study provides further details on the policy suggestions; here we provide the suggestions in the context of COVID-19.

2 The sectoral impact of COVID-19 in Cambodia

Traditionally, Cambodian manufacturing has been dominated by garments and has faced difficulties in diversifying its base. The product space for Cambodia has become more complex over time, but only to a limited degree, and the country lags behind Vietnam and Thailand (CDRI and ODI, 2019). The Economic Complexity Index fell over 1995–2017, whereas that for Vietnam and Thailand increased. Cambodia remains concentrated in rice, garments, tourism and construction (World Bank and ADB, 2015). Several studies have identified promising sectors/sunrise industries in Cambodia: mining, textiles, food, non-metallic manufacturing and electricity, gas and water (Chhair and Ung, 2016); and agriculture (including rice, cassava, rubber, palm oil and vegetables), tourism, ICT and construction (ODI and UNDP, 2009).

However, the pandemic is now having adverse impacts on some of these sectors. Emerging evidence on the sectoral impact of COVID-19 for Cambodia is summarised below:

- **Agriculture:** The spread of COVID-19 has led to higher demand for food and storage in all countries, leading to increased demand for rice exports from Cambodia. Data from the Cambodian Rice Federation show that total rice exports to international markets reached more than 300,000 tonnes in the first four months of 2020, up 40.46% on the same period last year (Pisei, 2020), with China accounting for 41% of exports; the EU and the UK 32%; Association of Southeast Asian Nations (ASEAN) countries 13%; and other countries 14% (Chan, 2020). On 5 April, the government put in place export restrictions on fish, white rice and paddy rice to ensure local food security (The Standard, 2020); however, this ban did not affect Cambodian rice exports significantly, since Cambodia exports mainly fragrant rice to international markets. Moreover, on 20 May, the government lifted the ban on exports of white rice, paddy rice and fish (The Cambodia Daily, 2020).
- **Manufacturing:** Garment exports in Cambodia are facing a double whammy – the garments industry is heavily dependent on relatively standard products in a wider GVC, with firms often headquartered in China, exporting to retailers in Europe or the US, which are also closing shop owing to containment measures. On the supply side, the pandemic has reduced access to inputs from China. Further, the EU’s decision to withdraw Cambodia’s trade preferences under the EBA initiative from August 2020 because of human rights considerations could result in the garments sector facing some \$100 million of additional duties in the EU (European Commission, 2020). A labour-intensive manufacturing segment that is doing well during the pandemic is bicycle manufacturing. There are a number of bicycle manufacturers in Cambodia, from Taiwan (Atlantic Cycle, Smart Tech, Worldtec Cycles) and the US (Trek Bicycle and Ken International), and in 2017 Cambodia became the largest bicycle supplier to the EU. In the first quarter of 2020, the country exported almost half a million bicycles worth \$119 million, more than \$10 million over the same period last year (New Straits Times, 2020). It is expected that bicycle exports will continue to increase in the second quarter owing to heightened aversion to public transport.
- **Tourism, construction and business services:** These activities require movement of skilled and unskilled professionals across borders, and have been adversely affected by border closures. For instance, the tourism sector in Cambodia – which contributed 12% of gross domestic product (GDP) in 2019 and 13.6% of total employment directly (WTTC, 2018) – came to a halt in mid-March 2020, as tourists can no longer holiday abroad. For instance, between January and February 2020, the number of foreign tourists visiting Angkor Wat decreased by 37.2% (Forbes, 2020). On 20 May, Cambodia removed a ban on visitors from France, Germany, Iran, Italy, Spain and the US but, despite this easing, tourists from these countries are required to present a health certificate for entry, which certifies that the passenger has been tested negative for COVID-19 (Reuters, 2020b).

In addition, travellers need to undergo a health assessment. Between May 2019 and May 2020, the number of carriers went down from 44 to 15, and seats reduced by 96%, from 648,700 to 26,000 (Cirium, 2020). Under the best case scenario of a travel ban lasting up to two months, the Asian Development Bank (ADB) (2020) estimates a decline in total tourism revenue of \$345.7 million, which is roughly 1.41% of Cambodia's GDP; under the worst case scenario, estimated losses are roughly \$856.5 million, equivalent to 3.49% of Cambodia's GDP. Decreases in tourism services are likely to have a knock-on effect on the retail, entertainment and hospitality sectors.

- Effects of the pandemic on **insurance, financial, telecoms and computer-related services** are likely to be more limited. This is because most, if not all, of these services can still be delivered online in work-from-home scenarios and are therefore more resilient to any voluntary and selectively imposed social distancing once lockdowns get lifted (Shingal, 2020).

Table 1 summarises the pathways through which different sectors are being affected. Section 2.1 then takes a deep dive into garments and Section 2.2 into tourism and digital services. Direct pathways include economic effects of national measures imposed by the government to contain the spread of the virus, such as national lockdown, border closures, travel bans and social distancing. On the supply side, this can adversely affect local production in factories and distribution; on the demand side, it can result in a rise in consumer prices and a fall in domestic consumption. Indirect pathways include supply-side economic effects of disruptions in global supply chains owing to the pandemic and other factors (such as acceleration in global automation, potential re-shoring, etc.), and a fall in international demand.

Table 1: Summary of impact of COVID-19 on Cambodia

	Supply side	Demand side	Sectors most likely to be affected (examples)
Direct pathways: economic effects of national measures to contain spread of virus – social distancing measures, travel bans, national lockdowns, etc.	<ul style="list-style-type: none"> • Local manufacturing production affected by social distancing and cargo delays in short to medium run • Push towards automation of certain tasks within factories in long run • Travel bans in short run 	<ul style="list-style-type: none"> • Fall in domestic demand • Rise in consumer prices 	<ul style="list-style-type: none"> • Textile, clothing and footwear manufacturing • Tourism
Indirect pathways: economic effects owing to measures imposed by trading partners	<ul style="list-style-type: none"> • Shortages of imported raw material • Shortening of GVCs to build resilience • Push towards automation globally; potential re-shoring and or near-shoring by developed trading partners 	Fall in international demand	Of the country's 3.3 million wage employees, 1.8 million (54%) are concentrated in just three sectors: agriculture, garment manufacturing and construction (ILO, 2016). All three tend to be highly susceptible to technological substitution.

2.1 COVID-19: trouble for garment manufacturing in Cambodia

Cambodia's participation in GVCs has grown steadily since the 1990s, following the arrival of the export-oriented garment and footwear industry. The country has thus far embraced the 'Factory Asia' growth model, performing simple manufacturing tasks – primarily assembly – relying on its inexpensive low-skilled labour and foreign value added to boost its garments and footwear for exports. Firms are often headquartered in China, from where textiles are imported, for garments to then be manufactured (or assembled) in Cambodia at low cost, and finally exported to retailers in developed countries. In 2019, garments, footwear and travel goods accounted for 83% of the country's total industrial product exports (Xinhuanet, 2020a).

Measures of backward GVC participation show that the foreign value added in Cambodia's exports grew from \$5 million to \$523 million between 1990 and 2015, whereas measures of forward GVC participation

show that the domestic value added in third countries' exports grew from \$16 million to \$456 million (World Bank, 2019). Overall, the textile-clothing and footwear sector contributes roughly 60% to manufacturing employment. The garments sector – home to more than 600 factories – currently employs some 750,000 people, according to the Garment Manufacturing Association in Cambodia (GMAC), and supports roughly 20% of all livelihoods. In terms of footwear, there are estimated to be 83 operating factories in Cambodia, employing around 112,589 workers, of whom 87% are women (ILO, 2019)

The garments industry in Cambodia has been the worst hit by the pandemic; demand from the US and the EU has dropped significantly, with an estimated 14 brands now cancelling orders in the wake of COVID-19 (Hoekstra, 2020), leading to over 200 garment firms closing shop. Shortages of raw materials from China during the pandemic have also led to temporary suspension of factories' operations (Reuters, 2020a).

According to emerging evidence:

- GMAC reports that, as of 4 May, 180 garment factories have suspended operations in Cambodia, with 60 more closures in the pipeline. More than 150,000 workers have been temporarily suspended without clear indication on the resumption of work, affecting roughly 2 million Cambodian family members dependent on them (XinhuaNet, 2020b).
- On 7 April, the Cambodian government announced that temporarily laid-off garment workers would receive only \$70 per month, instead of a previous proposal of \$114, of which \$40 will come from the government and \$30 from the employers (The Phnom Penh Post, 2020). According to the unions, garment workers and their dependent families cannot survive on \$70 – a substantial drop from the minimum wage of \$190 (Industrial Union, 2020).
- Moreover, the withdrawal of Cambodia from the EBA initiative will further affect 20% (\$1.1 billion) of Cambodian exports to the EU (Cambodia exported a volume worth \$5.4 billion to the EU in 2019), affecting about 10% (75,000 employees) of the total garments sector workforce (Van, 2020). Since each factory worker enables five to six peripheral small businesses to thrive, the impact of laying off some 75,000 workers is rather concerning (ibid.).

Another indirect pathway through which the pandemic can affect the future of garment manufacturing in Cambodia is through a boost in automation and digitalisation, both nationally and internationally. Even before the pandemic, apparel contract manufacturers in Bangladesh, for instance, had started replacing workers with robots to adapt to increasing wages. Anecdotal evidence from Bangladesh suggests that rising wages and social unrest following the Rana Plaza disaster of 2013 led to increased automation in the apparel industry, with robots being able to manipulate fabrics, stitch pockets and attach belt loops to pants (Seric and Winkler, 2020). 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, potentially leading to re-shoring of certain tasks of assembly from Asian economies that have traditionally been major offshoring hubs. However, the impact on Cambodia is ambiguous: some of the re-shoring effects may be offset by the US–China trade war, and the increasingly political tensions between the two economies during the pandemic. Kearney's (2019) re-shoring index shows that the manufacturing import ratio for US firms increased to an unprecedented level in 2019 – 98 – but with firms reducing imports from China and increasing imports from Asian economies, including Cambodia. However, of the \$31 billion in US imports that shifted from China to other Asian low-cost countries, Vietnam absorbed 46%. In the short run, some lead firms, such as H&M, are moving towards repurposing their supply chains to manufacture personal protective equipment and masks for hospitals and health care workers, which may mitigate some employment losses in the sector (Kapfunde, 2020).

Women constitute the majority of the garments sector workforce in Cambodia – 80% are women, and mostly under the age of 35 (ILO, 2019) – and are therefore disproportionately affected by the pandemic (because garments are affected). There is likely to be an increased burden of unpaid care work as women are expected to take on the additional responsibilities of childcare, particularly with school closures to contain the spread of the virus. Economic insecurity and income stresses increase the risk of gender-based violence and threaten to further reduce women's access to support services including financial, health and reproductive health services. Effective coordination will be required across stakeholders to support women and help them navigate the future of work during and after the pandemic. Some leading

brands, such as H&M, PVH, Target and M&S, have committed to maintain their existing orders. Brands, suppliers, GMAC and the government need to work together to mitigate COVID-19 risks, address gender-specific challenges in responding to the crisis, ensure workers' rights are respected and provide financial support to workers.

2.2 Services-led growth: a boost to the digital economy

As per the World Development Indicators (WDI), services value added, as a percentage of GDP in Cambodia, was roughly 39.5% in 2018, higher than manufacturing value added, at 16.34%. Given that the services sector uses fewer intermediate inputs than the manufacturing sector, services industries tend to show a higher value added to output ratio than manufacturing. The ratios of value added to output for many industries in the services sector in Cambodia are higher than 0.50, with the sector average equal to 0.63, whereas the ratios for manufacturing are lower, averaging at 0.43 (ASEAN, 2019). The services sector has a relatively small foreign value added share, but has gained a much higher share in value added exports, of 54% in 2015. This reflects that Cambodia's services sector is playing a large role in the economy than manufacturing in terms of providing more value added to the country's exports. In Cambodia, the share of services in total exports (average of 2014–2018) is close to 30%, above the world average of 23% (Mendez-Parra, 2020). Table 2 shows that, on an average, the travel sub-sector accounted for roughly 80% of total services exports in Cambodia in 2014–2018, followed by transport (11.40%). Telecommunications, computer and information services accounted for 1.72% of total exports.

Table 2: Export share, by services sub-sector (average 2014–2018)

Services sub-sector	Share in total services exports (%)
Travel	79.09
Transport	11.40
Government goods and services n.i.e.	3.98
Other business services	2.9
Telecommunications, computer and information services	1.72
Others	0.86

Source: WDI

A services sub-sector that is emerging as increasingly important is digital services; lockdowns are generating larger demand for communications, computer and information services. The digital sector is also an important enabler of other services, such as legal, financial, business and government services, which can be increasingly delivered online and remotely. On the one hand, the economic lockdown could reduce demand for services provided to companies, including a wide range of consulting services for sectors that have virtually stopped all activity. On the other hand, as businesses increasingly shift online, the demand for both digital and digital services in Cambodia may increase, creating opportunities for skilled workers. Cambodia stands well placed to leverage new opportunities from the digital economy; mobile telephony costs in Cambodia are among the lowest in the region; post-paid computer-based mobile broadband prices are the lowest worldwide; and recent developments in the telecoms infrastructure have further enhanced the competitiveness of the IT sector to position itself as a new place for outsourcing and innovation in the region (UNCTAD, 2018).

Table 3 presents the industries that can help in mitigating the impact of the economic losses from garment manufacturing and tourism in Cambodia. These are (i) communication and audio-visual services, including digital animation; (ii) IT-enabled business process outsourcing (BPO) services; and (iii) post and telecoms for e-commerce.

As the COVID-19 pandemic raises global demand for health care services, online education and home entertainment, it is expected increase to increase the demand for audio-visual services, including animation services. A United Nations case study on Cambodia (UNCTAD, 2018) shows that the country is home to few but interesting high-quality providers of animation services, some with social and human development missions, offering full production services of 2D animation for television series, feature films, commercials and public service announcements. Some also offer 3D animation and at least two of the

studios offer post-production services (special effects, editing and output) to international companies. ODI and CDRI's (2020) case study of Ink Animation in 2019 points to a promising example of the new opportunities in a services-led economic transformation. The firm is involved in animation of films and distributes animated films internationally through online means, using its good contacts abroad, including through a Netflix series. In 2019, it employed some 60 staff, with plans to expand to 200–300 in coming years, and starting salaries are much higher than the minimum wage. It is a very good example of a promising digitally based services exporter in a lower-income country. Unfortunately, this activity is still low in scale, compared with that reached in Japan and India, among other countries.

Second, the crisis may increase the scope of BPO services in Cambodia, which absorbs educated labour. Cambodia's IT industry is concentrated primarily in the BPO segment, offering services to international clients. There is also a growing niche of call centres, as well as web and IT software development businesses and e-commerce companies. In the area of BPO, companies are focused on data processing, data analysis, document processing and non-voice call centres (e.g. chat services or IT support). One example is that of MangoTango, which was providing back-end processing for global brands such as Facebook in 2019 (ODI and CDRI, 2020). ICT services trade may also offer new and favourable employment opportunities for women; the share of females with digital skills is marginally higher than the share of males with digital skills in Cambodia, across basic to advanced digital skills (ODI and CDRI, 2020).

Third, during the pandemic, new opportunities are arising from e-commerce. Cambodia has the highest internet connectivity growth in the Asia-Pacific region and a very young population, allowing most e-commerce ventures to reach a clientele of 15,000 consumers in 2017. Using data on registered Cambodian sellers on Alibaba.com, an International Trade Centre (ITC) study (2018) finds that e-commerce has enabled Cambodia to diversify its export basket of manufacturing products; apparel and related products account for 70% of the volume of trade in Cambodia but machinery dominates in online exports, followed by beauty and personal care products. Similarly, only cereals appear as a major agricultural product in the top 10 exports, accounting for 3% of all exports, but in online exports Cambodia has diversified into fresh mangoes, rice and cashew nuts. Barring the US, the largest markets in Cambodia's overall exports, such as Germany, Japan and Thailand, are missing from the list of e-commerce markets, to be replaced by Pakistan, Egypt and Australia, indicating that e-commerce has enabled Cambodia to diversify in terms of export markets also. Given cargo delays and border closures during the pandemic, it is important for Cambodia to leverage domestic platforms, such as Tinh Tinh. This may enable greater MSME participation in e-commerce platforms, which has otherwise been low as a result of the high cost of membership and the commission charged on third-party platforms such as Amazon. Rising e-commerce also offers important opportunities for women-led MSMEs to enter the export market.

Table 3: Industries for mitigating economic losses from COVID-19 in Cambodia

Sunrise sectors	Trade category	Example (past or present)
Communication services	High value added niche services in audio-visual, such as digital animation	Ink Animation: animation of films and digital distribution
IT and IT-enabled services	BPO services	MangoTango providing back-end processing services for Facebook
Post and telecommunications	E-commerce; online buying and selling of goods and services	Tinh Tinh

3 Assessing the digital divide in Cambodia

The pandemic is likely to accelerate digitalisation of the Cambodian economy. The digital economy can help the economy recover more quickly and onto a more resilient and broad-based growth path. While digital transformation is a promising area, it will not automatically support all members of society to the

same extent, however. ODI and CDRI's (2020) report on 'Fostering an inclusive digital transformation in Cambodia' assesses the digital divide in Cambodia. Some key findings are summarised below:

- **Consumer access to the internet has been rising rapidly but is dominated by the 15–25 age group.** Internet access rose from close to zero in 2000 to 40% in 2018 but still remains below that in Thailand (57%) and Vietnam (70%). While 85.7% of the population in the 15–25 age group in Cambodia has access to the internet, the country is lagging behind other Asian economies in terms of internet penetration in the below 15 age group; only 4.5% of individuals in this group in Cambodia have access, compared with 18.1% in Indonesia and 63.4% in Thailand.
- **Firms' adoption of digital technologies remains low, even in the exporting, foreign-owned firms.** Data from the World Bank Enterprise Surveys show that less than a quarter of Cambodian firms maintain an internet presence (i.e. a website), against the 46% world median; and a very low share of exporting and foreign-owned firms have a website compared with other countries (Table 4). Cambodia also has a limited quantity of secure servers, limited use of digital services (i.e. in finance) and a lack of ICT enabling skills and supportive legal/regulatory frameworks.

Table 4: Share of firms with own website – Cambodia in comparison (%)

Country	Year of survey	All firms	Exporting firms	Firms with more than 10% foreign ownership	Manufacturing firms
Cambodia	2016	24.2	12.4	22.6	14.3
Myanmar	2016	13.2	22.5	29.7	17
Laos	2018	30.9	69.1	75.6	
Thailand	2016	45.5	88.1	90.5	
Vietnam	2015	48.6	57.5	46.8	
Indonesia	2015	20.5	54.4	74.7	

Source: ODI and CDRI (2020)

- **Digital adoption has been slow in agriculture, manufacturing and government services.** The agriculture sector, which remains the main source of employment in the country, is catching up more slowly through blockchain or precision agriculture. The manufacturing sector, which is a major source of female employment and foreign exchange, will also be highly vulnerable unless it embraces innovation and digitalisation more fully. Cambodia scores very low on the United Nations' e-Government Development Index – and the ranking actually declined between 2008 and 2018, to 145 out of 192 United Nations members included.
- **Case studies suggest that business and financial services are more digitalised,** with more than 50,000 tech talents working in Cambodia's formal sector. There are at least 300 active technology start-ups in Cambodia, at least 50 in Fintech, 40 in digital media and 30 in e-commerce (Kem et al., 2019). There is much potential here, because half of the population is below 25 years and because the country has 120% mobile penetration, cheap data access, more than 7 million Facebook users and a lack of financial inclusion (50% are unbanked).³ Meanwhile, digital payment systems are significantly reducing transaction costs but benefit urban (middle-class) consumers more than other groups.
- **There are specific gaps in the availability of digital skills in Cambodia** (Table 5). International Telecommunications Union data suggest that less than 30% of the population has basic digital skills, such as using a spreadsheet (compared with 50% in Indonesia). Less than 3% of the population has intermediate digital skills in connecting and installing new devices and less than 1% has advanced digital skills in finding, downloading and configuring software. Only 32.4% of individuals with tertiary education are using computers and internet, as compared with 68.1% in Bangladesh, 87.8% in Indonesia, 52.6% in Pakistan and 89.7% in Thailand. Employment in agricultural occupations has decreased and that in services and clerical work has increased but there has been no marked change in professional, technical and managerial occupations. A survey

³ According to the National Bank of Cambodia, around 50% of the population has access to at least one financial service – either a bank account or a borrowing account, an insurance account or an electronic wallet (e-wallet) account (see Chan, 2019).

of 61 companies in Cambodia conducted by Konrad-Adenauer-Stiftung (KAS, 2019) further finds that three skill-sets are currently missing: 49% of the firms choose ‘analytics’ – the ability to develop, format, modify and represent data using advanced spreadsheet formulas and functions to extrapolate trends and patterns; 82% say ‘online collaboration’, which entails using tools such as cloud storage, productivity applications, calendars, web meetings and learning environments; and 90% choose ‘managing online information’, which refers to the ability to search for, identify, evaluate and communicate online data. Currently, 82% of staff are using basic technologies (internet, email and Microsoft Office) extensively in their current work but less than 40% are doing video calling and using online storage and productivity tools.

Table 5: Individuals with ICT skills, by type of skill (% of population).

Level of skill	Type of skill	Cambodia	Indonesia	Pakistan	Thailand
Basic	Copying or moving a file or folder	27.8	49.5	5.5	
	Using copy and paste tools to duplicate or move information within a document	26.8	49.5	4.0	5.1
	Using basic arithmetic formula in a spreadsheet	9.0	7.9	2.1	
Intermediate	Connecting and installing new devices	1.5	21.8		
	Transferring files between a computer and other devices	20.6	56.6	2.4	25.8
	Creating electronic presentations with presentation software	2.5	7.9	1.7	27.6
Advanced	Finding, downloading, installing and configuring software	0.6	12.5	3.4	7.4
	Writing a computer programme using a specialised programming language	0.1		1.5	

Note: Data are for 2016 or 2017.

Source: ITU (2018)

4 What needs to be done to harness the digital economy post-COVID?

As shown in the above sections, garment manufacturing and tourism – two important sectors for Cambodia’s development – have been hard hit by the pandemic. The digital economy and e-commerce offer alternative pathways to mitigate some of these economic losses. However, there is a significant digital divide, which the pandemic may exacerbate. The government is already preparing a long-term strategy for the digital economy (for 2020–2035), which needs to target closing the digital divide and boosting an *inclusive* digital transformation in the wake of economic losses from COVID-19. The development and implementation of this new policy framework need much more emphasis now.

Building on the ODI and CDRI (2020) report, we identify seven policy suggestions to help in this effort:

1. Radically transform innovation in the manufacturing sector. In response to the crisis, there is a need to leverage technology and innovation to adapt existing local manufacturing capabilities in Cambodia towards much-needed medical equipment and personal protective equipment manufacturing for domestic consumption and export. The government needs to support manufacturers in changing current production lines towards production of essential goods to deal with the pandemic. A new incentives package (offering an ecosystem that encourages digital technology) can help attract technologically more intensive investment, encourage upgrading technology in factories and promote relevant skills, for example through an enhanced Skills Development Fund and targeted technical and vocational education and training placements. It could also embrace the concept of digital small and medium enterprise clusters.

2. Provide appropriate and good quality skills for the future. The pandemic is fuelling e-commerce growth in Cambodia, with the potential to create new employment opportunities. For instance, Grocerdel – an online startup that delivers fresh farm produce in Phnom Penh – has seen its sales skyrocket by over 165%, and has to increase its staff intake by 50% to meet the spike in demand (UNCTAD, 2020). Bringing new dynamism into the sector skills councils to embrace a digital economy would be a helpful, targeted measure. Skills development in the digital age requires supply-side policies on education and skills and demand-side policies on innovation and research and development, along with facilitating linkages between the supply and demand of skills through institutional intermediaries and complementary policies on technology transfer. There will also need to be more emphasis on education through digital means.

3. Nurture the digital start-up economy for an inclusive economy. The start-up economy in Cambodia is very dynamic but a challenge lies in seeking a better link between this and how it delivers for the poorest. Several organisations already support or invest in tech start-ups. New incentives by the government for collective action by start-ups could redirect some efforts to develop apps with relevant applications for the poorest. According to the Ministry of Commerce, the government has reduced the cost of registration by 40% to ease the burden of formalization for start-ups (UNCTAD, 2020). The digital start-up economy will be essential in advancing Cambodia’s recovery from the fall-out of COVID-19.

4. Facilitate digital infrastructure development to enable the most vulnerable groups to take part in the digital economy. In response to the pandemic, businesses are increasingly shifting online, people are being asked to work from home and there is rise in e-commerce activities and digital work – all of which is placing pressure on existing digital infrastructure. Targeted policies are required for digital infrastructure development during the crisis. For instance, Cambodia has very low fixed-broadband penetration and low mobile broadband penetration compared with other Asian economies, and its market is currently dominated by low-quality residential broadband services. Targeted support is also required to ensure that those who lose out from new technologies in industries can take part elsewhere in the economy. This could take the form of rolling out digital infrastructure to those who need it most or raising digital literacy in vulnerable groupings.

It is key to note that China is an important player in Cambodia's digital development plans; in March 2019, Cambodia signed an agreement with Chinese Huawei to develop 5G mobile network technology in the country. This was followed by an announcement in July of collaboration between Smart Axiata, Cambodia's leading mobile telecommunications company, and Chinese Huawei in building the 5G network in Cambodia. Wuhan – the worst hit city in China by COVID-19 – is the world's largest supplier of fibre optic cables. Therefore, development of digital infrastructure in Cambodia may itself be affected by the pandemic.

5. Ensure a public sector that leads by example. Digital leadership will be very important in the next few years as Cambodia manages economic recovery after the pandemic. Managing the process towards a new framework for a digital economy in a coordinated way is essential. Currently, for instance, the government is finalising an e-commerce strategy for Cambodia with the support of the Enhanced Integrated Framework, involving various key ministries. Institutional strengthening inside the government around the digital economy, and specifically securing the lead role of the Ministry of Economy and Finance, will be vital. It is also important for the government to progress on e-governance and electronic services by accelerating efforts towards adopting its e-Government Master Plan 2017–2022. E-government services can make it easier for consumers to pay their bills online and reduce evasion, coupled with better monitoring of tax collection. This can ultimately lead to increased government revenue, which can be spent on support to the poor, particularly during the pandemic.

6. Digitalise trade facilitation and boost e-commerce. All trade-related agencies must adopt and deploy the ICT system to simplify and automate their trade-related procedures, which will contribute towards building Cambodia's economic resilience against pandemic, climate change and other challenges. Currently, there is an absence of coordinating institutional mechanisms in this regard. Some efforts are being made to leverage the digital economy for trade facilitation; the Ministry of Commerce, for instance, announced on 7 May 2020 to all producers and exporters of goods to Association of Southeast Asian Nations (ASEAN) markets that the certificate of origin for exporting goods to ASEAN could be filled in online (e-Form D) from 1 June 2020. Legal and regulatory frameworks for electronic transactions and signatures as well as for accessing and sharing information and data need to be put in place (IBC Cambodia, 2020). E-commerce can help mitigate some of the economic losses that Cambodia faces in traditional sectors owing to the pandemic but inclusive recovery from the crisis will require targeted efforts to increase participation of MSMEs in the digital economy. This can be done by increasing their access to domestic and international digital platforms, addressing challenges pertaining to information asymmetry between platforms and sellers, providing training in digital skills, facilitating digital payments uptake and addressing issues around transport, logistics and delivery.

7. Revise and extend social protection mechanisms to the most vulnerable, who are most at risk of losing their jobs owing to the pandemic. It is key to note that digital technologies can help in improving the viability and efficacy of policy solutions, including those facilitating the extension of social protection. For instance, as part of future goals, the National Social Security Fund (NSSF) is exploring the potential to develop a comprehensive database management system to correctly identify poor and vulnerable people by linking the system to the IDPoor system (ILO, 2019). In the longer term, digital technologies can help support an increasingly harmonised social protection system, which can facilitate better coordination across IDPoor, NSSF and other cash transfer and social assistance programmes.

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