Cambodia Outlook Brief*

Digital Transformation towards Industry 4.0

> "Digital technologies facilitate all manner of activities across the country, from people connectivity, commerce and startups to local service providers' accountability and transparency; note too, the cooperation and harmonisation within and between ministries and institutions."

Samdech Akka Moha Sena Padei Techo Hun Sen
Prime Minister, Kingdom of Cambodia

Cambodia has embarked on the digital transformation path to be ready for transition to a predominantly digital economy by 2023. The Cambodian government has prioritised readiness for the digital economy and Industry 4.0 in national development agenda, as set out in Rectangular Strategy IV 2018–23. Gaining a foothold in the digital world is not merely an economic ambition, but is necessary to secure the country's future economic prosperity for several reasons.

1. With the right strategy, the transformation of Cambodia's economy into a digital one can spur structural change towards more diversified and higher value-added and higher productivity activities, which are essential to sustain long-term growth, create decent jobs, and maintain competitiveness. This is evident through the stellar economic performances of China, Hong Kong, Singapore and South Korea, all of which made unceasing efforts to build a robust digital environment and capacity for a fully functioning digital economy.

2. Digital technologies can increase public sector capacity and reform public administration, reinvigorate civic engagement, improve local authorities' accountability and transparency in service delivery, and allow government to reach more communities and people in a cost-effective way. Further, digital technologies can strengthen cooperation and innovative partnerships within and between ministries and other institutions nationwide.

3. With an expanding talent pool of educated youth, a surge in the use of internet-connected smart devices, and rapid diffusion of technology from foreign direct investment inflows, Cambodia has the capability to take advantage of the digital transformation trends driving Industry 4.0.

4. Building a national digital platform will help bridge the digital rural-urban divide and deliver economic growth and development that is more inclusive of local businesses, industries and innovative ventures, thus boosting rural economies. Universal access to ICT infrastructure is essential for expanding the reach, quality and choices of educational programs and upgrading skills, including digital literacy, and linking local SMEs to domestic and external markets and to innovative foreign direct investment.

THE STATE OF CAMBODIA'S DIGITAL ECOSYSTEM

To realise its ambitious growth strategy, Cambodia needs to be ready to seize the opportunities of the digital economy. The adoption of emerging technologies can catalyse e-commerce growth, deepen domestic firms' participation in global value chains, and ease access to finance for innovative small and medium enterprises (SMEs) and startups. However, Cambodia's nascent digital ecosystem affects the ability of Cambodian businesses and consumers to adopt new technologies

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and innovations, hampering the speed and scale of technology diffusion. Cambodia is losing ground to its regional competitors. Its overall digital readiness score of 8.60 out of 25 (with 5.89 being the lowest, 20.10 the highest and 11.96 the average global score among 118 countries) in Cisco's Global Digital Readiness Index 2018 places it in the lowest stage of digital readiness, just ahead of Myanmar (8.41) but lagging behind Laos (9.48), Thailand (12.53), Vietnam (12.56), Malaysia (15.19), and Singapore (18.30).[1]

Technology infrastructure

Cambodia's core digital infrastructure is improving, but still fragile. The number of active mobile operators nationwide has risen from three in 2000 to six currently, the major operators being Smart Axiata, Viettel and CamGSM. Because of limited wired infrastructure, mobile broadband has thrived, with the first 3G network launched across Cambodia in 2007 followed by the high-speed 4G/LTE network in 2014 and 4.5G network in 2017. Whereas fixed line broadband is not as popular as wireless, there is a vibrant market for fixed (landline) telephone services which are provided by eight operators. Around 30 internet service providers are active across the country and three telecom companies provide 27,100 km of fibre optic backbone as of 2017. The Malaysia-Cambodia-Thailand and the Asia-Africa-Europe-1 submarine communications cables landed in Sihanoukville in 2017. These cable systems enhance Cambodia's global connectivity and provide faster, cheaper and more reliable access to ICT services. A consortium of local and international tech companies is building a state-of-the-art data centre, which is expected to come on line by early 2020. Such a centre is a critical asset for Cambodia's digital ecosystem. It will both boost the provision of digital and cloud services and attract foreign investments, experience and expertise in technology and cybersecurity.

Digital technology adoption

Mobile-cellular subscriptions in Cambodia as of 2017 were 11.5 percent higher than the average for the Asia-Pacific region. Even so, Cambodia underperforms on several measures including fixed-broadband subscriptions (0.83 per 100 people versus 12.56), internet users[2] (34.0 percent versus 44.3), households with a computer (12.5 percent versus 38.84 percent) and households with internet access (21.0 percent versus 49.02 percent).[3] At firm level, the digital ecosystem is expanding as the rise of social media influencers and e-commerce platforms, including Alibaba, online payment systems, delivery services, and taxi-booking applications such as PassApp, disrupts traditional business and retail models.

Cambodia needs to make up lost ground quickly if it is to catch up with digital adoption by firms and populations in competitor countries. Fewer than one-quarter of Cambodian businesses had a web presence in 2017 (versus the global average of 46 percent). Although some 50 fintech startups are active in Cambodia, the take up of digital financial services has been slow. For instance, in 2016, only 1 percent of Cambodians used a mobile phone or the internet to access an account at a financial institution – the lowest rate recorded in Global Findex 2017;[4] and around 16 percent made a payment using digital platforms such as PiPay, well below the average of 58 percent for the East Asia-Pacific region.

The shortage of technical skills in the workforce and inadequate logistics delivery infrastructure are the main reasons behind the slow adoption of digital technologies nationwide. E-government remains fragmented because of underdeveloped and sprawling government websites, the limited number of public services available online, and the lack of centralised multilateral payment platforms. The United Nations E-Government Surveys 2016 and 2018 place Cambodia in the middle e-government development index (EDGI) group. The most significant improvement is in online services where Cambodia's EDGI score rose from 0.05 to 0.25 out of 1.

Regulatory framework

Cambodia does not yet have a comprehensive regulatory framework for the new digital ecosystem. The government is working to develop policy and legal frameworks that provide clear guidance for the ICT sector. Cambodia's draft National Policy on Science, Technology and Innovation sets out four strategies: human resources planning, infrastructure and institutional development, research promotion, and setting up a Ministry for Science, Technology and Innovation. The Cambodia National Science and Technology Master Plan 2014–20, launched in 2014, focuses on industrial innovation in agriculture, primary industries, and ICT. The Cambodian ICT Master Plan 2020, released in 2014, is oriented towards

1   Tae Yoo, Mary de Wysocki and Amanda Cumberland. 2018. Country Digital Readiness: Research to Determine a Country's Digital Readiness and Key Interventions. www.cisco.com/c/dam/assets/csr/pdf/Country-Digital-Readiness-White-Paper-US.pdf.
2   Defined as individuals who used the internet (via a computer, mobile phone, personal digital assistant, games machine, digital TV, and so on) from any location.
3   ITU. 2018. World Telecommunication / ICT Indicators Database 2017 (version 1.0.1).
4   Natasha Beschorner, James Neumann, Miguel Eduardo Sanchez Martin. 2018. Benefiting from the Digital Economy: Cambodia Policy Notes. Washington, DC: World Bank.

empowering people, ensuring connectivity, enhancing capabilities and enriching e-services. It also serves as a guide for ITC strategy and policy. Telecommunication and ICT (T-ICT) Development Policy 2020, announced in 2016, aims to enhance the country's ICT connectedness and readiness by improving cyber security and ITC integration in industry, promoting ICT use, and building a strong foundation for T-ICT development. Sub-Decree No. 246 on Digital Signatures was approved in December 2017. Most legislative frameworks for the digital ecosystem, such as on electronic transactions, consumer protection for online purchases, and cybercrime prevention, are still in the drafting stages.

The digital workforce

Low digital literacy, lack of technical capabilities, and shortage of essential soft skills such as creativity, collaboration, communication, critical thinking and problem solving at all levels of the workforce remain a huge challenge. Indeed, the main reason for Cambodia's low ranking (110th out of 140 countries) in the new Global Competitiveness Index 4.0, introduced in the 2018 Global Competitiveness Report, is the lack of critical skills among the population. For overall skills, Cambodia ranks 121st with a score of 41 out of 100. For digital skills, it ranks 107th with a score of 43.5, behind Vietnam (44.6), Laos (48.5), Thailand (56.2), Malaysia (73.1) and Singapore (77.7).[5] Despite fast progress in expanding internet coverage (from 22.33 percent in 2015 to 34 percent in 2017), digital literacy and awareness among the population is still very low. Many users rely on the internet primarily for social media and entertainment instead of using it productively, for example, to learn new skills.

TWO DIGITAL TRANSFORMATION SUCCESS STORIES

Singapore is considered to be one of the world's leading digital economies. The government plays a vital role in fostering and capitalising on digitalisation by focusing on three key strategic priorities: digitalising industries, integrating ecosystems, and industrialising digital. It offers continuous support to businesses, especially SMEs, to build and continually adapt their digital infrastructure and push the boundaries of innovation. It enables them to evolve, scaleup and expand, helps address any business issues at hand, and encourages new talents and innovations. Emerging disruptive digital industries are nurtured and tapped into as new economic growth drivers. To succeed in this endeavour, the country never ceases to enhance its

workforce's digital skillsets and invest in research and innovation. Infrastructure, governance, policies and standards are continually improved to better facilitate digital advancement.

Thailand's digital transformation experience is fascinating. In terms of digital competitiveness, the country is ranked among the top three regionally and 39th globally. This accomplishment stems from its relentless efforts to develop soft infrastructure, digital infrastructure and human capital. Since 2005, the Thai government has enacted various digital frameworks, including Thailand 4.0, the National Digital Economy Masterplan, and numerous bills on digital subjects. New digital infrastructure has been built. In 2017, the government launched Digital Park Thailand to serve as a digital service hub, broaden access to submarine cable systems, groom talent and promote innovation. The Village Broadband Internet Project (Net Pracharat) was implemented in the same year to give poor households in more than 24,000 villages countrywide affordable access to high-speed internet. To build a digitally skilled workforce, the country recently launched SMART Visa to attract highly skilled workers from abroad to supplement homegrown talent.

CAMBODIA'S DIGITAL TRANSFORMATION POLICY

Cambodia has taken various initiatives to push digital transformation forward. The ICT infrastructure policies and laws demonstrate the country's efforts to build an inclusive, robust and safe digital environment where digital ideation and innovation can flourish. The government is boosting its own digital adoption by digitalising some public services, including the business registration process established by the Ministry of Commerce and the single-entry tourist visa issuance procedure by the Ministry of Foreign Affairs and International Cooperation.

The government is also setting up the national SME Bank and Techo Startup Centre, which are two among other supporting instruments to help businesses innovate and grow. Many of the government's policy actions have focused on building human capital for the digital economy. In 2014, the National Science and Technology Council was established to bridge the technological capability gaps between Cambodia and other countries. In line with Industrial Development Policy 2015–25, which stresses the importance of science and technology for the country's development, the Ministry of Education, Youth and Sport has been promoting STEM (science, technology, engineering, and mathematics) education at all school levels.

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5   World Economic Forum. 2018. *Cambodia: Global Competitiveness Index 4.0 2018 Edition.*

Due to accelerating technological change and competitiveness, the country's TVET (technical and vocational education and training) Policy 2017–25 sets out to produce more skilled workers and technicians. The establishment of the national Skills Development Fund is a recent step taken to enable the existing workforce to upgrade their skills.

Cambodia's digital economy is still in the nascent stage, and the country does not yet have a specific, fully fledged digital economy policy. However, in January 2019, the government formed a technical working group to formulate a digital economy policy framework as an official roadmap to seize opportunities arising from the digital revolution for further socioeconomic development, focusing on 1) building digital infrastructure and developing an e-payment system and logistics network, 2) creating digital platforms and developing a digital ecosystem, and 3) promoting e-government, entrepreneurship, digital literacy and open data.

STRATEGIC DIRECTION AND POLICY RECOMMENDATIONS

Cambodia has the potential to leapfrog to a digital economy and society where people are digitally capable, all sectors are digitalised, and there is an innovation-friendly regulatory environment. The above snapshot of the progress Cambodia has made to digitalise its economy suggests it is on the right track. Challenges lie ahead and there are many areas for continued development, but the outlook is promising.

Clearly understanding where it stands and learning from the two success stories, we offer three recommendations for Cambodia to take its digital transformation to the next stage leading to its envisioned digital economy:

1. *Develop a strong and efficient innovation ecosystem.* Such an ecosystem would help cultivate new digital players, technological solutions and growth opportunities which are indispensable for transforming the country into a robust digital economy. This calls for favourable and supportive conditions and thus requires collaboration between private and public sectors. Mechanisms should be put in place to:

- Promote competition in the provision of high-speed networks and investment in digital infrastructure, so that digital services can become faster, cheaper and more accessible in rural and remote locations;
- Construct digital zones attached with trade, tax and financial incentives to attract local and global business innovators;
- Encourage more spending on research and development across private and public entities in hope of identifying new ground-breaking digital opportunities;
- Establish more innovation partnership programs with the governments of the world's leading digital economies for development assistance to improve innovation in the country.

2. *Enhance the knowledge and skills base.* In this digital age, the entire workforce needs to be digitally competent in order to keep up with the fast pace of technological development and reap its full benefits. Therefore, it is recommended that government:

- Intensify the promotion of STEM education and careers, digital ethics and lifelong learning to widen the talent pool;
- Support workers across all sectors and levels to not just upskill but also reskill so that they can be adaptable to the demand of the current dynamic job markets;
- Make available and accessible affordable digital training labs and online certificate programs on digital topics to facilitate learning;
- Establish incentive policies to retain homegrown digitally capable workers and attract highly skilled workers from abroad;

3. *Adhere to regulations and standards.* Technology is a double-edged sword. Along with many positive benefits that it offers, it may also pose social, economic and political threats. Actions to insulate the country from these negative effects will not only build trust but also help ensure that it will stay on the right path. This is essential for the government to:

- Speed up the drafting of legislation, regulation and policy, particularly related to electronic transactions, consumer protection for online purchases, and cybercrime prevention;
- Put in place laws on data protection or privacy online as well as other related areas.