



DRIVING DIGITAL TRANSFORMATION IN CAMBODIA

Issues, Challenges, and Recommendations

POLICY BRIEF

Issue 02 | November 2024



Driving Digital Transformation in Cambodia: Issues, Challenges, and Recommendations

Policy Brief Issue 02 | November 2024

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Driving Digital Transformation in Cambodia: Issues, Challenges, and Recommendations
Policy Brief Issue 02 | November 2024

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Profound thanks to our KAS & IISPP Team and all of our esteemed authors.

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Freedom, justice and solidarity are the basic principles underlying the work of the Konrad-Adenauer-Stiftung (KAS). The KAS is a political foundation, closely associated with the Christian Democratic Union of Germany (CDU). As co-founder of the CDU and the first Chancellor of the Federal Republic of Germany, Konrad Adenauer (1876-1967) united Christian-social, conservative and liberal traditions. His name is synonymous with the democratic reconstruction of Germany, the firm alignment of foreign policy with the trans-Atlantic community of values, the vision of a unified Europe and an orientation towards the social market economy. His intellectual heritage continues to serve both as our aim as well as our obligation today. In our European and international cooperation efforts, we work for people to be able to live self-determined lives in freedom and dignity. We make a contribution underpinned by values to helping Germany meet its growing responsibilities throughout the world. KAS has been working in Cambodia since 1994, striving to support the Cambodian people in fostering dialogue, building networks and enhancing scientific projects. Thereby, the foundation works towards creating an environment conducive to social and economic development. All programs are conceived and implemented in close cooperation with the Cambodian partners on central and subnational level.

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The Royal University of Phnom Penh (RUPP) has been a bastion of Cambodian intellectual training and talents cultivation for the past thirty-two years since its reopening in 1980. Particularly, it has significantly contributed to the building of human and institutional capitals, and practical knowledge in Cambodia's development. While the country is playing an increasingly important role in the regional and global economic, political and cultural dynamics, the past thirty-two years of integration into the international political, capital and cultural flows have brought about challenges and opportunities specific to Cambodia but highly relevant in various ways to countries in both the region and of the world. This Cambodian development experience – of negotiating cultural (knowledge) exchange and identity, confronting the (new) order of international capitalism, western ideologies and dominant knowledge, and engaging in various forms of regionalism and internationalism – and the Cambodian development perspectives of the increasingly connected world remain inadequately understood and under-theorized. Knowledge production on Cambodia in the globalizing world remains undertaken largely by non-Cambodians, and there remain few locally based institutions engaging in studying Cambodia and its regional dynamics. Therefore, it is a high time that RUPP, in the name of Cambodia, established an indigenous knowledge application and production base for furthering the country development and promotion to the world.

www.rupp.edu.kh/iispp/

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FOREWORD

With great pride, we present the second publication of the Adenauer Young Scholars for Excellence Program, Cohort 2024, a distinguished initiative jointly managed by the Institute for International Studies and Public Policy (IISPP) and the Konrad-Adenauer-Stiftung (KAS) Cambodia. This publication serves not only as a compendium of scholarly essays but also as a significant milestone in our ongoing commitment to fostering intellectual development among Cambodia's emerging leaders in public policy.

The Adenauer Young Scholars for Excellence Program is designed as a comprehensive talent cultivation platform, aimed at nurturing young scholars' analytical and leadership capabilities. By engaging with complex public policy issues and participating in rigorous training, these scholars acquire the necessary knowledge and skills to navigate Cambodia's multifaceted challenges. This initiative is instrumental in shaping a cadre of informed and capable leaders who are prepared to contribute to the nation's socio-economic advancement.

This publication exemplifies our dedication to cultivating a new generation of thinkers and decision-makers who will play vital roles in shaping Cambodia's future. It aligns seamlessly with the foundational rationale behind the establishment of the IISPP as a base for the application and production of knowledge pertinent to Cambodia's development. Our objective is to create an environment conducive to the flourishing of innovative ideas and to facilitate the intersection of research and policy-making, thereby driving sustainable development.

As we invite readers to engage with the insights and recommendations contained within this volume, we encourage a recognition of the potential embodied by these young scholars. They represent not only the aspirations of a nation poised to embrace the challenges and opportunities of the digital age but also the promise of a more informed, inclusive, and resilient future for Cambodia.

We extend our gratitude to all contributors and stakeholders who have supported this initiative, reinforcing our collective commitment to the advancement of knowledge and public policy in Cambodia.

Assoc. Prof. Dr. Neak Chandarith

Director, Institute for International Studies and Public Policy
of the Royal University of Phnom Penh

FOREWORD

Welcome to the second issue of the annual policy brief of the Konrad-Adenauer-Stiftung Cambodia and the Institute for International Studies and Public Policy of the Royal University of Phnom Penh.

This edition, “Driving Digital Transformation in Cambodia: Issues, Challenges, and Recommendations,” takes a bold look at the complexity of various issues concerning Cambodia’s digitalization progress.

We are proud to have the 14 fellows of Adenauer Young Scholars For Excellence in the 2024 Cohort utilizing the knowledge and skills gained through their 10-month fellowship to dive deeper into specific issues of their interest. They are the future policy leaders that will catalyze Cambodia’s socio-economic development.

Starting from Kov Phanna’s piece on how to leverage digital transformation to enhance the service delivery of the National Social Security Fund Schemes. The paper contributed insights to the timely and progressive development of an emerging welfare policy of the Kingdom. The two following pieces by Hout Sereyboth and Mey Minith addressed potential pathways to strengthen Cambodia’s most attractive sector, tourism. Moving forward, the book provided interesting insights on the betterment of urban management in Cambodia, counting from inputs on the smart cities by Dong Sakmay, enhancement of public buses by Khorn Sokcheata, and the ICT infrastructure development by Sothy Pichseth.

This edited volume also offers inputs onto aspects of financial sector through two articles from Im Pohnavoatey that address the promotion of financial inclusion and Chiev Raksmeay on the role of digital finance in climate resilience and sustainable development. Onto the human resource development and SME sector, Sar Puthirith offered his takes on the strengthening of TVET’s digital governance, while Pork Pagnapich provided insights on how digital transformation can serve as a key to advancing the SMEs sector in Cambodia, and finally Kosal Bopha illustrated on the benefits for FDI flows from the advancement of digital government in Cambodia. Finally, our last two fellows, Hean Sinal and Tip Oussa, shared their takes on the improvement of higher education by advancing the library system and the future of passports.

We hope that our readers will find this volume as intriguing and insightful as we are. We look forward to discussing more about these issues with you.

Jason Chumtong
Country Director
Konrad-Adenauer-Stiftung Cambodia

EDITORIAL NOTE

As Cambodia has undergone a rapid transformative development, a pressing question arises: How can young Cambodian scholars best contribute to this effort? This question guided the establishment of the “Adenauer Young Scholars for Excellence (AYSE)” in 2022, the first collaboration between the Konrad-Adenauer-Stiftung Cambodia and the Institute for International Studies and Public Policy at the Royal University of Phnom Penh.

Cambodia is a great nation with a promising future, with its greatest strength lying in the resilience and kindness of its people. One of the most critical challenges the country has been facing is how to unlock the potential from within, especially among talented and energetic young Cambodians, to ensure a bright future for the Kingdom.

While our project is relatively small, we believe that each step taken with the right narrative and mindset lays the groundwork for broader expansion. Although our outreach remains limited in the short term, our vision for progress is driven by upbeat hope and commitment to an achievable ideal for Cambodia’s development.

We are firm believers in the role of young Cambodians as agents of change and prosperity. Through the AYSE program, we aim to nurture their knowledge, skills, talents, and mindset, encouraging active participation in scientific research to develop evidence-based perspectives to address existing and potential challenges facing our society.

This year, as Cambodia advances toward a digitalized economy and society—a key pillar of the Pentagonal Strategy Phase I—we have sought the insights of young scholars on pertinent issues in this transformation. In response, our young fellows have contributed their views through 14 policy briefs compiled in this second edited volume: *Driving Digital Transformation in Cambodia: Issues, Challenges, and Recommendations*. This volume is, indeed, thought-provoking, insightful, timely, and crucial to the better understanding of digital transformation in Cambodia.

As the AYSE program coordinators and mentors, we have been inspired by our young fellows’ curiosity, commitment to learning, and aspiration of realizing their vision of an ideal Cambodia. These articles mark their first steps on a long journey of continuous learning and active engagement.

We hope you enjoy the volume and look forward to your constructive feedback.

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Soth Chhayheng is set to pursue a Master of Public Policy at the Crawford School of Public Policy at the Australian National University in January 2025, supported by the Australia Awards Scholarships from the Department of Foreign Affairs and Trade. He holds a Bachelor of Political Science, majoring in Politics and International Relations, from Thammasat University, earned through a fully-funded scholarship. His academic accolades include the Australia Awards Scholarship, Fulbright Foreign Student Program 2025-2026 (as a primary candidate), Thammasat University Scholarship, and Krou Yeung Scholarship. His research focuses on Cambodia's domestic and foreign policy, Thailand's affairs, and ASEAN geopolitics.

Chhayheng has been working for the Konrad-Adenauer-Stiftung Cambodia for three years, where he has progressed from a Junior Research Associate to a Program Manager. He manages the office's Global Affairs and Governance objective. His responsibilities include managing relevant projects, research and publication, facilitating track 1.5 and track 2 dialogues, and coordinating external relations with governmental, diplomatic, think tank and civil society stakeholders. A passionate advocate for youth empowerment, Chhayheng has held several leadership roles including Chapter Leader of The Young SEAkors Cambodia Chapter, Co-founder of the Cambodian Student Club at Thammasat University, and President of the Student Council at Krou Yeung School among others. He is also a recent member of the Youth Sounding Board for the Delegation of the European Union to Cambodia.

ASSISTANT EDITORS

Luy Ung Techhong is currently working at the Konrad-Adenauer-Stiftung Cambodia as a Program Officer, where he progressed from a Junior Research Associate role in 2023. His portfolio at the country's office includes supporting relevant initiatives in foreign affairs, governance, public policy, and communication. He holds a Bachelor of Arts in International Relations from Paragon International University, where he graduated with High Honors under scholarship. His research interests include Cambodia foreign affairs and public policy.

Sean Mouy Ing is a Junior Research Associate at the Konrad Adenauer Stiftung Cambodia, where she contributes to advancing the foundation's three core objectives. She recently graduated with distinction from Paragon International University on a full scholarship, earning a Bachelor of Arts in International Relations. Mouying's primary interests lie in foreign relations and foreign policy, particularly concerning Cambodia's interactions with international partners, as well as in research-driven initiatives. Additionally, she has a keen interest in public policy, having been an Adenauer Young Scholar for Excellence and an alumna of the program's first batch in 2023. Starting in 2025, she will take on the role of Program Officer at KAS Cambodia.

THE AUTHORS

Kov Phanna holds a Bachelor of Arts in Social Policy and Development from Thammasat University, Thailand, where he graduated with First-Class Honors and received Academic Excellence Awards for four consecutive years under a fully-funded scholarship. Currently, he serves as Deputy Manager for Partnership Development at a locally-led non-profit organization, where he is responsible for building and leveraging high-impact partnerships with public and private sectors to catalyze educational transformation and leadership development in Cambodia. He has cultivated a strong interest in social policy, social protection, education, and Thailand's affairs.

Hout Sereyboth is a recent graduate from Paragon International University, majoring in International Relations. He is currently an Intern at the Ministry of Foreign Affairs and International Cooperation of Cambodia, working in the Department of ASEAN Political-Security Community, under the General Department of ASEAN. His primary interest is foreign affairs, diplomacy, and international security. Through his affiliation with the Adenauer Young Scholars for Excellence (AYSE) program, he concentrates on the tourism sector in Cambodia, with a particular emphasis on the integration of digital technologies within the industry. Through AYSE, he seeks to engage with policymakers and practitioners to explore the industry's potential for growth and revitalization. In addition to his education and career, he is actively involved in various social projects and serves as a mentor at conferences, such as the Model ASEAN Meeting.

Mey Minith is a Junior Researcher at the Center for Southeast Asian Studies and a Lecturer at the Institute for International Studies and Public Policy (IISPP) at the Royal University of Phnom Penh. He is a fellow of the Adenauer Young Scholar for Excellence (AYSE) program in the 2024 cohort. Having been awarded a full scholarship from the Ministry of Education, Youth, and Sport, Minith graduated with honors from IISPP with a Bachelor of Arts in International Studies majoring in International Relations. In 2023, he received an Erasmus+ scholarship to participate in a spring semester exchange program at Windesheim University of Applied Sciences in the Netherlands. Minith's research focuses on Cultural diplomacy, Southeast Asia affairs, Cambodia's foreign policy, soft power, and public policy. His recent piece with AYSE explores the intersection of digital media and diplomacy through the lens of Cambodian cuisine. Moreover,

Minith is passionate about youth empowerment, DEI society (Diversity, Equity, and Inclusivity), digital literacy, inclusive education, and debate, believing that integrating these pillars into public policy can create an informed community.

Dong Sakmay is a Senior Research Analyst at Knight Frank Cambodia, where he leverages his expertise in market analysis and strategic insights to inform decision-making in Cambodia's real estate sector. Sakmay holds an International Business Management (IBM) degree from the Royal University of Phnom Penh (RUPP). As a fellow of the Adenauer Young Scholar for Excellence (AYSE), a prestigious public policy fellowship of the Konrad-Adenauer-Stiftung Cambodia and the Institute for International Studies and Public Policy, Sakmay has developed a deep understanding of how public policies shape economic trends, empowering him to evaluate the impact of regulatory changes on the real estate market and provide strategic recommendations. By integrating public policy insights with market analysis, Sakmay is dedicated to navigating the complexities of Cambodia's real estate landscape and fostering sustainable growth.

Khorn Sokcheata is a senior student at Institute for International Studies and Public Policy of Royal University of Phnom Penh, majoring in International Relations. Beyond her academic pursuits, Sokcheata is deeply committed to academic exchange and learning from other youths across the ASEAN region and beyond. She was selected to participate in the NUS Summer Program in Entrepreneurship 2023 at the National University of Singapore and the ASEAN Foundation Model ASEAN Meeting Plus Australia 2024 in Jakarta, Indonesia. Sokcheata has also been awarded the Global UGRAD scholarship by the United States Department of State to pursue undergraduate study in the United States for the 2025 Spring Semester. As an Adenauer Young Scholars for Excellence Fellow in the 2024 cohort, the program is a launchpad for her enthusiasm for research and writing, providing her with the support and resources to explore her research interests further. Her recent co-authored article examines how the Funan Techo Canal has influenced Cambodia's international standing amidst a complex geopolitical environment.

Sothy Pichseth has graduated his bachelor's degree from Inha University majoring in Economics. In the teenage years, Pichseth encountered an existential crisis in which he constantly asked himself the meaning of life. Philosophy has been his friend as it has tremendously helped him from a deep hole he dug himself into. A eureka moment happened when he was enlightened that: "Sometimes it is not about finding the answers. It is about asking the right questions." From that moment, instead of asking about the meaning of life, he asked himself: "With what I am having and who I am now, what can I do to make my parents proud, contribute to society, and help people around?". That simple question has compassed him to take on an amazing journey of life. Currently, Pichseth serves as a Public-Private Partnerships (PPP) analyst at the Ministry of Economy and Finance (MEF). Pichseth's main responsibilities are project monitoring and portfolio management. His portfolio includes some notable projects such as National Railway, Sports Village, SME Cluster, and Plantation Development. Besides his full-time role at MEF, Pichseth is also one of the Adenauer Young Scholars for Excellence (AYSE) fellows in the 2024 cohort. At AYSE, he has gained foundational knowledge of public policy and obtained hands-on experience in policy research and drafting a policy brief. Committed to democratizing economic knowledge, Pichseth has also volunteered as an author and editor at the SEED Cambodia, a learning platform dedicated to sharing knowledge and information about the global economy, entrepreneurship, and international politics.

Im Pohnavoatey is a senior student pursuing a double major in International Relations at the Institute for International Studies and Public Policy and Professional Communication at the Institute of Foreign Languages, of the Royal University of Phnom Penh. Throughout her academic journey, she has been awarded a scholarship from the Scranton Women's Leadership Center in

Seoul, and she was also honored to participate in the Belt and Road Countries Program in China, hosted by the Shanghai International Studies University. With a strong dedication to empowering youth and women, she took part in the 2024 UNESCO-UNITWIN Digital and Leadership Local Training program, where she emphasized the importance of digital literacy, a theme closely linked to her research as a fellow of the Adenauer Young Scholar for Excellence (AYSE) in the 2024 cohort.

Chiev Raksmei is a Junior Accounting and Finance major at CamEd Business School, currently working towards an international CAT qualification accredited by the International Federation of Accountants (IFAC). She is also a proud alumna of the Rotaract Club of Phnom Penh Metro, an affiliate of Rotary International. Throughout her academic journey, she has been honoured with a Shanghai Government Scholarship for an exchange study at Shanghai University. Raksmei is gaining practical experience in the financial sector as an External Auditor Trainee at Deloitte, a UK-based private company limited by guarantee (DTTL). Additionally, as a Fellow of the Adenauer Young Scholars for Excellence (AYSE), she combines her interests in policy and financial affairs, driving her confidence in developing strategic audit recommendations that help clients ensure compliance with auditing and regulatory standards, both financially and legally.

Sar Puthirith is currently serving as Monitoring & Result Measurements Officer under the Skills Development Programme (SDP) project, implemented by Swisscontact Cambodia. He holds a Bachelor of Arts in International Studies majoring in International Relations from the Institute for International Studies and Public Policy of the Royal University of Phnom Penh from July 2022. Motivated to deepen his understanding of policy design and effectiveness, Puthirith joined the Adenauer Young Scholar for Excellence (AYSE) in the 2024 cohort. Furthermore, he sought to utilize this fellowship as the platform to present problematic research and practical recommendations.

Pork Pagnapich obtained a Bachelor of Arts in Teaching English as a Foreign Language from the Institute of Foreign Languages and a Master of Arts in Development Studies from the Royal University of Phnom Penh. He has around 10 years of experience with non-profit and profit entities, both local and international NGO and Government bodies on various social projects, social businesses, and businesses. One of the outstanding achievements is when he was volunteering as a representative of the working group of NGO Education Partnership organization that he advocated the Ministry of Education, Youth and Sport to improve legislation regarding the Community Learning Centers to move projects forward to helping Cambodian marginalized youth in the rural areas. Currently, he is a Senior Entrepreneurship and Innovation Specialist at Khmer Enterprise (KE). His passion is to improve the entrepreneurial ecosystem through the enterprise development programs, which he strongly believes plays a pivotal role in strengthening and increasing the Cambodian economy. He is also a focal point from Khmer Enterprise for the SME Policy Working Group of the Ministry of Industry, Science, Technology and Innovation.

Kosal Bopha is a junior student majoring in International Relations at the Paragon International University. Currently, she works as a Clean Energy Policy Intern at a non-profit organization. Given her academic background and leadership skills, she also received a scholarship from the dormitory and leadership skills center, the Harpswell Foundation. Bopha decided to enhance her practical knowledge and skills by applying for the Adenauer Young Scholars for Excellence (AYSE) in the 2024 cohort, a public policy training program. She has a keen interest in development, sustainability, and public policy. She also dedicated herself to making a positive impact on the community by initiating and co-leading a social project called Trey Visay in 2023, which aims to provide job skills, knowledge, and mental awareness to university students in Phnom Penh.

Using the AYSE program as a stepping stone, she successfully obtained another research program to further develop her skills in public policy to which she can apply the knowledge she learned from the AYSE program to make positive changes for livable communities.

Pen Somavattay is a senior university student majoring in International Relations at the Institute for International Studies and Public Policy of the Royal University of Phnom Penh. She is a junior researcher at The Young SEAKers Cambodia and is also a former volunteer at ActionAid Cambodia, where she gained her passion for social impact. With passion coupled with the global trend of digitalization, Somavattay is focused on leveraging her research skills to identify the driving forces that can help Cambodia achieve her Vision 2050 in her first published article as a fellow of the Adenauer Young Scholar for Excellence (AYSE), a public policy training program organized by the Konrad Adenauer Stiftung Cambodia (KAS) and the Institute for International Studies and Public Policy (IISPP) that provide her the opportunity to showcase her perspective on social matters.

Hean Sinal graduated with a Bachelor's degree in Economic Development from the Royal University of Phnom Penh. She is an Economic Cooperation and Private Sector Development Advisor with the FABRIC project at GIZ Cambodia. With over six years of experience in the development sector, she is a strong advocate for empowerment through education, believing that access to high-quality education is essential for improving the well-being of all individuals. Sinal focuses her efforts on developing policies that promote educational initiatives, particularly in the digital realm, recognizing education as a powerful tool for transformation. By championing opportunities for marginalized communities, she aims to create an environment where everyone can thrive and reach their full potential. Through her work, Sinal is dedicated to fostering sustainable solutions that uplift young women and vulnerable groups, ensuring that education remains accessible and impactful for all.

Tip Oussa is a freshman at Paññāsāstra University of Cambodia majoring in Law and a sophomore at the English Language Based Bachelor of Law program within the Royal University of Law and Economics. Currently, she is a volunteer at ActionAid Cambodia whose interests span from public policy, criminal law, transitional justice, physics, philosophy, geopolitics and empowering marginalized and underrepresented people. Being a fellow of AYSE has enriched her understanding of the intersections between law and public policy. Parallel to this, she also had an opportunity to co-author an article that examines how the Funan Techo Canal influences Cambodia's international standing amidst a complex geopolitical environment with another AYSE fellow.



Photo: កម្មវិធីជំរុញផ្សាយស្តីពី គោលការណ៍បទប្បញ្ញត្តិច្បាប់ និងអត្ថប្រយោជន៍របបសន្តិសុខសង្គម, បេឡាជាតិសន្តិសុខសង្គម on Facebook

CHAPTER 1

Leveraging Digital Transformation to Enhance the Service Delivery of the National Social Security Fund Schemes in Cambodia

Kov Phanna

Executive Summary

- Established in 2007, the National Social Security Fund (NSSF) has played a vital role in providing social security benefits to Cambodian workers. However, it continues to grapple with challenges, including a lack of awareness of its benefits among employers and employees, and burdensome administrative processes that hinder broader registration and participation.
- Recent policy initiatives have shown significant progress in expanding the NSSF schemes, including the introduction of voluntary social security schemes for self-employed workers, demonstrating a commitment to enhancing social security coverage in Cambodia.
- Recognizing the potential of digital transformation to address these challenges, this policy brief delves into recent policy initiatives and explores how the NSSF can harness digital transformation to improve its operational efficiency for service delivery for its members.

Introduction

A prolonged period of peace and stability has laid a solid foundation for Cambodia's remarkable economic growth and poverty reduction. From 1995 to 2019, the country's annual GDP growth averaged 7.6%, positioning Cambodia as one of the fast-growing economies in the world.¹ Cambodia also reached a low-middle-income status and is set to become an upper-middle-income country by 2030 and further a high-income nation by 2050. Despite these economic achievements and a significant rise in people's living standard, Cambodia's social protection system is at its nascent stages of development.

Recognizing the pivotal role of social protection in poverty reduction, enhancing human resource development, and fostering national economic growth, the Royal Government of Cambodia (RGC) has identified social protection as a strategic opportunity to reduce poverty, vulnerability, and inequality while strengthening human resource development and building national resilience to achieve sustainable economic growth. Within Cambodia's social protection system, which encompasses social security and social assistance programs, the National Social Security Fund (NSSF) stands out as one of the primary social security schemes.² Established in 2007 under the Law of Social Security 2002, the NSSF is tasked with managing various schemes to safeguard working-age individuals in the private sector against life-cycle-contingent risks, including employment-related accidents, sickness, and old age. Operating as a contributory scheme, the NSSF registers formal enterprises and institutions, collects contributions, issues membership cards to employers and employees, and coordinates the provision of services and benefits to members. Since its establishment, the NSSF has made considerable progress in raising the workers' welfare and livelihood in the case of encountering hardships and expanding its coverage nationwide, with total registered enterprises and institutions of 21,430 and 3,120,208 members in 2022.³

While the NSSF has made significant progress in improving the welfare of workers and expanding coverage nationwide, challenges persist, including a lack of awareness among employers and employees regarding the benefits offered by the NSSF, as well as burdensome administrative processes. These challenges underscore the need for digital transformation in streamlining

1 World Bank, *The World Bank in Cambodia*, April 2024. <https://www.worldbank.org/en/country/cambodia/overview>

2 Royal government of Cambodia, *National Social Protection Policy Frameworks 2016-2025*, March 24, 2027. https://nspc.gov.kh/Images/SPFF_English_2019_10_28_12_10_56.pdf

3 National Social Security Fund, *Report on annual achievements 2022 and action plans*, 2023. <https://www.nssf.gov.kh/wp-content/uploads/2023/04/NSSF-Annual-Report-2022.pdf>

processes to enhance accessibility and efficiency. The advent of digital transformation offers a promising avenue to address these issues, enabling the NSSF to increase awareness of its schemes and benefits, and coverage among enterprises that are not yet registered. It can help improve the efficiency of service delivery by simplifying administrative processes for registering and making contributions. Consequently, this policy brief seeks to assess the recent policy initiatives and delve into how digital transformation can be effectively utilized to enhance the delivery of NSSF services.

Analysis of Recent Policy Initiatives

Cambodia has made significant strides in expanding the coverage of the NSSF and addressing administrative challenges. The NSSF, which initially focused on employment-related injury insurance in 2008, has progressively broadened its scope to include healthcare insurance in 2016 and pensions in 2021, offering a wider array of benefits for employers and employees. In 2017, the RGC adopted the National Social Protection Policy Framework (NSSPF), which laid the foundation for a comprehensive social protection system by enhancing the existing schemes, introducing new social assistance schemes, and extending other types of benefits under the NSSF schemes.⁴

In 2018, the RGC also took another proactive measure to extend the NSSF mandate, initially covering and targeting enterprises with eight employees or more, to cover all enterprises in Cambodia, including small and medium-sized enterprises (SMEs), regardless of the number of employees they employ. This resulted in wider coverage of workers from approximately 1.4 million in 2017 to 3.1 million in 2022. In August 2023, another measure was taken by the RGC and the NSSF to launch a voluntary social security scheme for self-employed workers, aimed at extending healthcare coverage for this group and the NSSF members' dependents. This measure is considered a significant step in closing the gaps in social security coverage and services for all Cambodian citizens while promoting comprehensive social security coverage in Cambodia. By January 2024, this scheme had registered 100,000 self-employed workers, representing 3.5% of Cambodia's 2.9 million self-employed workers.⁵

In addition, awareness and knowledge of the NSSF benefits among enterprises and workers are crucial for extending social security coverage. Supported by the International Labor Organization (ILO), the NSSF developed and launched a communication strategy using various channels, including the internet, radio, and social media campaigns, to increase public awareness of social security benefits provided by the NSSF and motivate people to register with the NSSF.⁶ Information shared included the NSSF benefits and registration and other administrative procedures and was complemented by real-life stories on the values of the NSSF benefits. This strategy combined traditional and digital communication to ensure comprehensible information was accessible and to build trust in the NSSF system, aimed at encouraging non-registered enterprises and workers to register with the NSSF schemes. The NSSF also engaged in an NSSF modernization initiative through leveraging digitalization, including the introduction of a mobile application for members. The NSSF member employees are encouraged to download and register for the app as it enables them to access their personal information, check the validity status of their membership card, monitor monthly contributions of employers, identify nearby medical services of partner health facilities, obtain the NSSF news, view all NSSF branch offices, and seek other support. The NSSF mobile app brings more awareness to employees on whether their employers regularly pay contributions to NSSF as the frequency of contribution payment is an important determinant for access to NSSF

4 Royal government of Cambodia, *National Social Protection Policy Frameworks 2016-2025*, March 24, 2027. https://nspc.gov.kh/Images/SPFF_English_2019_10_28_12_10_56.pdf

5 International Labor Organization, *ILO brief on workers in Cambodian informal economy*, March 2024. <https://www.ilo.org/media/520676/download>

6 International Labor Organization, *NSSF communication campaign strategy 2018*, 2018. <https://www.social-protection.org/gimi/Media.action?id=16536>

benefits. Contribution payments can be made through partner banking apps or directly at the main bank branches. To pay via banking apps, employers should select public services or government services, different among banking apps, in the payment menu, and subsequently select the NSSF logo either as enterprise owner or self-employed member, both of which require ID and contribution amount to proceed with the contribution payment. Along with contribution payment, enterprises need to submit monthly certifying reports to NSSF, including information on covered employees, payroll ledger, and payment receipts, in hard or soft copies (through E-form). This method of contribution payment is considered convenient for enterprise owners and self-employed members, and an effective measure for anti-corruption as all cash is removed from direct transactions to the institution.⁷ This digitalization effort is expected to improve service quality, credibility, and trust in the NSSF.

Despite this significant progress, the NSSF faces implementation challenges, primarily due to low public awareness and registration barriers, collectively recognized by the NSSF and ILO in their recent publications. A research study from the ILO in 2019 revealed concerning gaps, with most workers struggling to articulate the benefits of the NSSF, albeit being familiar with its name.⁸ ILO findings indicated that the information relayed by the employers was often inconsistent and unreliable, with a dearth of tailored materials from inspectors conducting training for employers. In addition, navigating the NSSF website and social media channels to acquire information proved challenging for users, hindering effective registration and benefit claims, and leading to low coverage and participation rates. A study by Oxfam in Cambodia (2022) further highlighted that informal economy workers lacked knowledge about the NSSF benefits and obligations, including available schemes, membership benefits, how to register, contribution amount and process, and procedures for claiming benefits.⁹ This study found that two-thirds of respondent workers had limited awareness of the NSSF. This may be due to awareness-raising and communication priorities that focus on registered enterprises with more than 100 workers, while smaller enterprises are based on request.¹⁰ This demonstrates the efforts to improve knowledge and awareness of the NSSF benefits and processes, yet indicating an absence of awareness-raising priority for non-registered enterprises as well as activities conducted through physical means. Extension of the NSSF coverage for self-employed individuals and workers of non-registered enterprises requires targeted awareness-raising and communication strategy and digital platforms among these groups.

Another identified challenge is inadequate coordination between ministries for effective information sharing and burdensome administrative procedures.¹¹ This issue arises from digital information systems and data management practices within ministries that are often siloed or duplicative, both within single institutions and across different ones. Identification of new enterprises has yet to be systematic due to operational linkage challenges among ministries, preventing the increasing registration number of enterprises and employees. The government officially launched the Cambodia Data Exchange (CamDX) in June 2020, through which an online business registration platform was introduced as an effort to ease the business registration process and allow secure

7 International Labor Organization, *Operational review of the Cambodian National Social Security Fund*, 2017. <https://p4h.world/app/uploads/2023/02/NSSF20Operational20Review20Dec20202017.x23411.pdf>

8 International Labor Organization, *Building a culture of social security*, 2019. <https://www.social-protection.org/gimi/gess/Media.action?id=16928>

9 Oxfam in Cambodia, *social protection for the apparel industry in Cambodia: gaps and opportunities*, 202. https://oi-files-cng-v2-prod.s3.eu-west-2.amazonaws.com/cambodia.oxfam.org/s3fs-public/file_attachments/Social%20protection%20for%20the%20apparel%20industry%20in%20Cambodia.pdf

10 International Labor Organization, *Assessment of the Cambodian National Social Security Fund's health insurance schemes*, 2024. https://webapps.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_920182.pdf

11 International Labor Organization, *Extending social protection for workers in Cambodia: A study to understand the characteristics of workers and enterprises in the informal economy*, 2024. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@asia/@ro-bangkok/documents/publication/wcms_920120.pdf



Photo: “ច្បាប់ស្តីពីចរាចរណ៍ផ្លូវគោកសុវត្ថិភាពក្នុងការធ្វើដំណើរ និងសុវត្ថិភាពលើមធ្យោបាយដឹកជញ្ជូន ជូនអ្នកបើកបរយានយន្តដឹកកម្មករនិយោជិត និងកម្មករនិយោជិត.” បេឡាជាតិសន្តិសុខសង្គម on Facebook

multilateral data exchange between various information systems over the internet. Business owners register with the Ministry of Commerce (MoC) for an operation license, and the General Department of Taxation (GDT) for tax payment compliance, and subsequently declare their business opening to the Ministry of Labor and Vocational Training (MoLVT). All of these processes can be completed through a single, digital CamDX portal. Data registered by business owners can be distributed to responsible ministries, including MoC, GDT, and MoLVT, which seems to enable information sharing among these ministries. This does not always happen in practice, according to ILO (2024), there is an absence of systematic information sharing on newly registered enterprises between the MoC, GDT, and NSSF. NSSF is unable to fully access enterprise information and systematically identify the NSSF non-registered enterprises, requiring more efforts for registration scale-up and inspection. As of July 2022, the NSSF registration for enterprises is not included in the CamDX system as part of the enterprise registration and declaration process to the MoLVT, resulting in employers and employees registering for an NSSF membership at the NSSF branch offices.¹² This indicates that the actual registration processes are still manual in the majority of cases, requiring enterprise owners and employees to complete and submit forms in person. Enterprise owners download the registration form from the NSSF website and fill out the information, then submit the completed form enclosed with the required documents and pick up the enterprise registration certificate a week later.¹³ Once an enterprise is registered, employees are responsible for completing their registration process at the NSSF offices and can receive an NSSF membership card on the same day. The NSSF needs officers to process registration forms, data entry, validation, certificate, and membership cards. These are deemed inefficient for both employers and employees while requiring significant human resources and other related costs for NSSF and discouraging broader participation.

12 United Nations Development Programme, *Understanding the paths to formalization in Cambodia: an integrated version*, December 2023. https://www.undp.org/sites/g/files/zskgke326/files/2023-12/Understanding%20the%20Paths%20to%20Formalization%20in%20Cambodia_An%20Integrated%20Vision.pdf
13 International Labor Organization, *NSSF information package for employers and employees*, November 28, 2019. https://webapps.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_731466.pdf

Policy Recommendations

Building Digital Interoperability of Data Management Systems

The RGC and the NSSF should develop interoperable digital platforms for data management. This would enable seamless integration of the NSSF system with various ministerial systems and databases, facilitating smooth data flow and reducing redundancy. Such integration would also enable seamless data and information exchange between different ministries and allow automatic connection and verification of enterprises' and workers' information for the NSSF. This helps minimize physical paperwork and duplication of efforts and time spent on manual data entry while enhancing data accuracy. In addition, an interoperability system would ensure systematic information sharing across different government services, fostering inter-ministerial collaboration and leading to coordinated efforts in policy implementation and service delivery. The RGC and the NSSF can strengthen and expand their recent investment in digital services, especially online business registration through the CamDX portal, to allow data exchange between information systems of all ministries and connect with private sector information systems, thereby enhancing the effectiveness of public service provision.

For instance, information on newly registered enterprises from business registration and operation license providers, such as the MoI, MoC, MISTI, MPTC, and MPWT could be shared with the NSSF to identify non-registered enterprises and enforce social security regulations. Utilizing data and big data analytics and tools would support better identification, monitoring, and compliance enforcement among non-registered enterprises with registration requirements. This approach would enable the NSSF to efficiently inspect and access enterprise information, facilitating enterprise registration and improving the efficiency and coordination among relevant government institutions.

Developing A Mobile Registration App for Enterprises and Employees

The NSSF should build on its existing mobile app, which allows members to check contribution history, validity status, and nearby health facilities. By adding more functionalities on registration, the app could assist users in registering for social security benefits. Features in the app should include step-by-step registration instructions, multilingual support, accessibility features, document upload capabilities, and automated notifications for contribution payment deadlines. Integration with the interoperable data system (refer to Policy Recommendation 1) would enable automatic data verification and validation for enterprises and employees, reducing the need for physical paperwork and minimizing data entry errors. This streamlined registration process would also support the inclusion of self-employed and domestic workers, aligning with the NSSF's strategy to incorporate these groups into its healthcare program and Phase One of the government's Pentagonal Strategy for achieving universal health coverage.

Implementing Digital Awareness-raising and Communication Campaigns

The NSSF should leverage digital technologies and platforms to design and implement strategic communication campaigns, increasing public awareness of its schemes, benefits, and processes among employers and employees. First, understanding the knowledge gap among these groups is essential. Then, develop and distribute visual information brochures, packs, infographics, and video content through digital campaigns. Videos should be short and emotive videos in Khmer, simplifying the complex NSSF schemes and showcasing step-by-step online registration processes, contribution payments, benefit claims, and access to partner healthcare facilities. Using animations, explainer videos, or real-life cases will make the information more engaging and accessible.

Second, NSSF should utilize popular social media platforms in Cambodia, such as TikTok, Facebook, and Telegram, and collaborate with trade unions and enterprises to disseminate visual information, video content, regular updates, important announcements, and success stories about NSSF benefits and processes. In addition, developing a user-friendly, informative website with easily accessible information about NSSF schemes, benefits, application processes, and frequently asked questions (FAQs) is crucial. The website should be mobile-responsive for easy access on smartphones and tablets. Targeted digital campaigns are highly recommended to reach specific types of enterprises and workers, particularly those with low knowledge and awareness and non-registered status of NSSF, whose information can be obtained from interoperable data systems of different ministries. Implementing these digital communication campaigns will significantly enhance NSSF's outreach, ensuring more enterprises and workers are well-informed about the available schemes and benefits.

Conclusion

The NSSF has made substantial progress in extending social security coverage and benefits to Cambodian workers, despite the social protection system being in its early stages of development. However, challenges, such as low awareness and cumbersome administrative processes continue to limit its effectiveness and efficiency. These challenges can be addressed through leveraging digital transformation, including developing interoperable data management systems, enhancing mobile applications, and implementing digital communication campaigns. By adopting these policy recommendations, the NSSF can effectively address the current challenges and improve operational efficiency for service delivery. The uptakes of digital transformation will serve as a strategic enabler and accelerator, contributing to the goal of broader social security coverage and benefits for all citizens, building a comprehensive social protection system in Cambodia, and supporting economic growth.

Photo: Headquarter of the National Social Security Fund (NSFF), Ministry of Labour and Vocational Training



បេឡាជាតិសន្តិសុខសង្គម (ប.ស.ស.)

បេឡាជាតិសន្តិសុខសង្គម (ប.ស.ស.)

បេឡាជាតិសន្តិសុខសង្គម (ប.ស.ស.)
NATIONAL SOCIAL SECURITY FUND (N.S.S.F.)



Photo: Angkor ticket counters, angkorphotographytours.com

CHAPTER 2

Harnessing the Transformative Potential of Digital Ticketing to Position Cambodia as a Modern Tourist Destination in the Digital Age

Hout Sereyboth

Executive Summary

- Cambodia, as a developing country, has relied on the tourism sector as a backbone of its economic growth, alongside key industries such as garment, footwear, and travel goods exports, agriculture, construction, and real estate. However, the COVID-19 pandemic has had a devastating effect on this important industry.
- Recognizing the importance of tourism and digital transformation, the Royal Government of Cambodia's Pentagonal Strategy (Phase I) has identified these important areas. Digitizing the tourism sector has become a key domain that must be enforced, in addition to improving tourism services and diversifying tourism products.
- Within the digital transformation agenda, the introduction of a digital ticketing system into Cambodia's tourism ecosystem presents a promising opportunity. Digital ticketing offers convenience and accessibility for both tourism operators and tourists, making it a trending solution that Cambodia should actively pursue. By embracing digital ticketing, the country can enhance the visitor experience, smoother business operations, and drive the industry in the wake of the COVID-19 pandemic's impacts.

Introduction

Tourism is one of the priority sectors in the Cambodian government's Pentagonal Strategy (Phase I) and is recognized for its significant contribution to socio-economic development, improvement of livelihood, and poverty reduction.¹ Tourism is also one of the four pillars supporting Cambodia's economy, in addition to garment, footwear and travel goods exports, agriculture, and construction and real estate. Given Cambodia's status as a developing nation with a significant reliance on the tourism industry, the COVID-19 pandemic has placed the country in a precarious position with regard to continuing its economic growth following the nationwide border closures enacted in 2021.² Following the successful containment of the COVID-19 virus, resulting in Cambodia reporting one of the lowest active cases number both in regional and global level, the Kingdom transitioned to a "Living with COVID-19" strategy in the latter half of 2021, thereby enabling the country to reopen its economy and commence recovery efforts in the wake of the pandemic disruptions.³

Amidst the challenges faced by Cambodia, new and promising possibilities have arisen. Notably, the COVID-19 pandemic has catalyzed a pivotal shift, transforming the nation to rapidly adopt digital technologies and acknowledging the remarkable value of digital transformation for Cambodia's future. From food delivery services to e-learning, these core digital solutions have played a vital role in helping people navigate and cope with their difficulties during the global pandemic. As Cambodia reopened its borders to international travelers, we have witnessed the emergence of transformative new technology platforms designed to serve the tourism sector in many ways. These include innovative platforms such as e-arrival cards, e-visas, and even a dedicated tourism application developed by the Siem Reap Tourism Club Association. This digital transformation journey has played a crucial role in facilitating the revival of Cambodia's tourism industry in the wake of the global pandemic, reducing stressful processes, enhancing the visitor experience, and positioning the country as an attractive technology destination for global visitors. Despite the concerted efforts

1 International Organization for Migration. 2022. "COVID-19 and the State of Global Mobility in 2021." IOM Publications. <https://publications.iom.int/system/files/pdf/MPI-COVID19-Impact-Global-Mobility.pdf>.

2 The Asian Development Bank. 2022. "Community-Based Tourism COVID-19 Recovery Project: Sector Assessment Summary - Tourism in Cambodia." Asian Development Bank. <https://www.adb.org/sites/default/files/linked-documents/53243-001-ssa.pdf>.

3 Phnom Penh Post. 2021. "2021-2023 recovery plan launched." <https://www.phnompenhpost.com/business/2021-2023-recovery-plan-launched>.

made by the Royal Government of Cambodia and relevant industrial stakeholders to digitize the tourism sector, it remains a crucial priority to look forward to the long-term economic development of the country. The main priority is to improve the tourism sector, which is a key part of the economy and helps the country's GDP. This is important for achieving the goal of becoming a high-income nation by 2050. The importance of embracing 'smart tourism' solutions cannot be overstated, as the transformation of Cambodia's tourism industry into a modern, attractive, and technologically advanced destination is crucial in this current digital age.

In addition, new technologies like digital or e-ticketing represent another critical element that will significantly boost the convenience and overall attractiveness of Cambodia's tourism landscape. This paper will therefore focus on comprehensively introducing the concept of digital ticketing, providing an overview of the digital ticketing landscape in Cambodia, and offering proposed recommendations to further strengthen this area.

Understanding Digital Ticketing in the Tourism Sector: A Game-Changer

The concept of digital ticketing has evolved significantly over the past few decades, driven by the rapid advancements in technology and the changing behaviors of consumers. Electronic ticketing is a form of electronic commerce for different kinds of tickets for public transport or long-distance travel by train or airplane and for tourist sites or leisure events. The main characteristic is that tickets are sold and stored in an electronic device, such as a smart card or mobile phone.⁴ E-tickets evolved first in the airline industry in 1994 and this was a major shift for the airline industry in which they began utilizing computerized reservation systems to issue electronic tickets, eliminating the need for physical paper tickets and the traditional paper ticketing systems. During the 1990s and early 2000s, digital ticketing gained popularity across various industries, including entertainment, transportation, and events.⁵ With the rise of the internet and e-commerce, online ticket sales and digital ticket delivery became increasingly common.

As technology advanced quickly, the introduction of smartphones in the 2000s transformed digital ticketing. Consumers could now easily access and show their tickets on mobile devices. This added convenience and accessibility, allowing users to store multiple tickets in digital wallets, get real-time event information, and use contactless entry methods like QR codes, Radio Frequency Identification (RFID), and blockchain, which improved digital ticketing platforms even more.⁶ In this modern day, digital ticketing has become the industry standard in most developed countries. Innovative platforms such as the Netherland's IAMsterdam City Card, and Japan's Suica card that dominate in various industries such as entertainment, tourism, and public transportation which are now even available online and mobile applications.⁷ The COVID-19 pandemic has further accelerated the widespread adoption of digital ticketing solutions, as they seamlessly align with the heightened demand for contactless and touchless experiences among consumers. The convenience, accessibility, and safety offered by digital ticketing platforms have become increasingly crucial in the post-pandemic landscape, especially in the modern digital economy era.⁸

4 La-Gaffe, Gaston. 2023. "Global Tourism Economy Forum - How digitalisation is revolutionising the travel industry." BBC. <https://www.bbc.com/storyworks/travel/the-new-tourism-trend/technology-redefine-tourism-industry>.

5 BBC. n.d. "Global Tourism Economy Forum - How digitalisation is revolutionising the travel industry." BBC. <https://www.bbc.com/storyworks/travel/the-new-tourism-trend/technology-redefine-tourism-industry>.

6 Ko Fujimura Yoshiaki, and Nakajima. 1998. "General-purpose Digital Ticket Framework." https://www.usenix.org/legacy/event/ec98/full_papers/fujimura/fujimura.pdf.

7 Puhe, Maike. 2014. "STOA Study 'Integrated urban e-ticketing for public transport and touristic sites.'" European Parliament. [https://www.europarl.europa.eu/RegData/etudes/etudes/Join/2014/513551/IPOL-JOIN_ET\(2014\)513551_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/Join/2014/513551/IPOL-JOIN_ET(2014)513551_EN.pdf).

8 FasterCapital. n.d. "The Role Of Qr Codes In Digital Ticketing." <https://fastercapital.com/topics/the-role-of-qr-codes-in-digital-ticketing.html>.

The implementation of digital ticketing in the tourism sector offers numerous advantages, including improved efficiency and enhanced accessibility for tourists and business-related purposes. This modern e-ticketing system has brought remarkable convenience, enabling visitors to easily buy and book their tickets with just a few clicks, free from the constraints of traditional ticket counters with long queues and location-specific availability. This saves customers significant time, allowing them to spend more of their valuable vacation time enjoying the tourist sites.⁹ For the operator side, by implementing digital ticketing, tourism providers can enhance their operations, lower administrative costs, and deliver a smoother, more convenient experience for their customers. Additionally, adopting digital ticketing platforms facilitates the gathering and analysis of important data, which can guide strategic business decisions.¹⁰

However, the implementation of digital ticketing faces several challenges, including limited internet connectivity, varying levels of digital literacy, and cybersecurity concerns. A major problem is the lack of reliable high-speed internet, especially in remote areas of the country. Without it, the widespread adoption and effective use of digital ticketing systems may be meaningless and ineffective. Additionally, not everyone has the digital literacy skills needed to navigate and use these electronic ticketing platforms comfortably, which could limit their adoption among certain demographic groups. Moreover, integrating digital ticketing brings cybersecurity risks that need to be addressed. As these systems mainly involve online transactions, therefore by ensuring robust security measures to protect users' sensitive data and prevent breaches or cyber-attacks is crucial. Tackling these technical and user-related challenges will be essential for the successful and sustainable implementation of digital ticketing, particularly in developing countries like Cambodia's tourism industry.¹¹

Current Landscape of Digital Ticketing in Cambodia

Cambodia has made notable strides in the adoption of digital ticketing across various sectors, including sports, music concerts, buses, cultural events, and international conferences. A prominent player in this landscape is LIVE. By Wonderpass platform, a cashless smart ticketing and event management solution that has gained significant traction among businesses and local users in the country. To support the economic recovery in the post-pandemic era, Wing, a leading mobile banking and payment service provider, partnered with Wonderpass through a memorandum of understanding (MOU) to boost digital payments and drive the modernization of Cambodia's tourism industry.¹² In 2022, Wonderpass also engaged in discussions with the Ministry of Tourism to explore the establishment of digital information hubs in the country's key tourist centers, aiming to enhance the digital experience for visitors.¹³ Furthermore, the emergence of online booking platforms for bus services has provided added flexibility and convenience for customers. Travelers can now book their tickets through dedicated bus apps, allowing them to arrive at the bus station just 5-10 minutes before departure, without the need to queue up to collect physical tickets hours in advance.

However, some notable challenges and lessons learned from Cambodia's experience in adopting digital ticketing that we need to take into account as well. The 2023 Southeast Asian Games in Cambodia presented opportunities for the adoption of digital ticketing. To provide alternatives to long

9 Watkins, Mark. 2018. "Digital tourism as a key factor in the development of the economy." <https://ea21journal.world/index.php/ea.V169-08/>.

10 ticketmaster. 2016. "10 BENEFITS OF DIGITAL TICKETS." <https://business.ticketmaster.co.uk/10-benefits-of-digital-tickets/>.

11 Neville, Megan. 2024. "Key Ticketing Challenges in 2024: Turn Obstacles into Opportunities." Softjournal. <https://softjournal.com/insights/ticketing-challenges>.

12 Phnom Penh Post. 2021. "Wing and Wonderpass sign MoU to support tourism growth in Cambodia." <https://www.phnompenhpost.com/business/wing-and-wonderpass-sign-mou-support-tourism-growth-cambodia>.

13 Khmer Times. 2022. "Digitization of Cambodia's tourism sector through Wonderpass Technology cooperation." Khmer Times. <https://www.khmertimeskh.com/501138887/digitization-of-cambodias-tourism-sector-through-wonderpass-technology-cooperation/>.

queues and improve the experience for both local and foreign sports fans, the organizers launched a SEA Games 2023 mobile app that allowed users to view the competition schedule and purchase tickets. In addition, online ticket reservations only serve as a booking mechanism, and users are still required to physically collect their tickets at the designated pickup locations prior to matchday. However, the digital ticketing functionality within the app faced technical issues, rendering it largely ineffective. As a result, many sports enthusiasts were forced to resort to the traditional method of queuing at the stadium, some even lining up as early as 1 AM, just to secure tickets. Thousands more prospective attendees were left disappointed as they joined the physical queues but were unable to get the tickets. This experience highlighted the need for Cambodia to further elevate its digital ticketing infrastructure and capabilities. The logistical challenges encountered during the SEA Games served as a valuable lesson, underscoring the importance of robust digital systems, reliable payment integration, and a seamless user experience to facilitate easier access to events and better serve the needs of both domestic and international spectators.

Policy Recommendations

Cambodia is positioned as an emerging market with significant potential for the adoption of digital ticketing solutions. To further strengthen its position and transform its tourist sites into modern destinations, the following policy recommendations can serve as a foundational framework to drive the implementation of digital ticketing systems for the future.

Developing a National Tourism Digital Platform

This can serve as a transformative initiative to drive the digitalization of Cambodia's tourism industry. First, we need a centralized platform that would provide a one-stop function for all tourism-related information, tickets, services, and bookings, by integrating digital ticketing solutions for major attractions, events, and transportation which are suitable to the criteria of "Smart Tourism". By offering an intriguing digital platform that provides ticket booking or selling function, and real-time updates and reviews, the platform would enhance the overall visitor experience and promote Cambodia's tourism offerings to both domestic and international visitors. In addition, the National Tourism Digital Platform should offer multilingual capabilities, providing content and assistance in key foreign languages such as English, Chinese, Japanese, and French. Most importantly, the platform should also foster the joint collaboration among tourism businesses, technology providers, and other key stakeholders to further innovate digital services and the widespread adoption of digital ticketing.

Incentivizing Tourism Businesses Who Adopt Digital Ticketing

This key strategy of this policy should be focused on the financial domain such as subsidies, or tax exemption to help tourism businesses put the investment and financing operational costs related to implementing digital ticketing systems into their operations. By offering these financial incentives, the government can effectively reduce the barrier to adopt digital ticketing technology and encourage more tourism businesses to embrace the transformative potential of digital ticketing technology.

Enhancing Digital Ticketing Awareness for Users, Tourists, and Businesses

This strategy is essential for driving the successful adoption and integration of digital ticketing into Cambodia's tourism ecosystem. After the introduction of digital ticketing, the government or related stakeholders must begin the targeted campaign awareness to the user and tourist businesses side, to highlight the benefits and convenience of digital ticketing. This could include the promotion of mobile ticketing apps, online booking platforms, and contactless payment options, emphasizing

how these digital solutions can boost the visitor experience, reduce wait times, and enhance overall satisfaction. In addition, by providing tourists with the information and confidence to utilize digital ticketing, Cambodia can catalyze the shift away from traditional paper-based ticketing systems. Simultaneously, engage and educate tourism businesses on the benefits of digital ticketing through awareness programs, workshops, and government-facilitated knowledge-sharing sessions with success stories and best practices from other countries to inspire local businesses. By empowering tourism businesses with information and support, Cambodia can motivate the widespread implementation of digital ticketing systems.

Conclusion

The revitalization of Cambodia's tourism sector through the adoption of digital ticketing represents a critical opportunity for economic recovery and sustainable growth in a post-pandemic landscape. The integration of digital technologies not only enhances the efficiency and accessibility of tourism experiences but also aligns with global trends towards smart tourism. As Cambodia navigates its path to becoming a high-income nation by 2050, embracing innovative solutions such as digital ticketing will be essential in modernizing its tourism offerings and attracting international visitors.

The effective implementation of digital ticketing will not only streamline operations and improve visitor experiences but also position Cambodia as a competitive player in the regional tourism market. As the country embraces this digital transformation, it has the potential to emerge stronger, more resilient, and better equipped to thrive in the dynamic global tourism environment.



Photo: *The Taste of Angkor Has Been Distinguished as the Best Asian Cookbook 2021*, Royal Embassy of Cambodia

CHAPTER 3

Digital Gastrodiplomacy: A Strategic Approach to Invigorating Cambodian Cuisine for Economic Growth

Mey Minith

Executive Summary

- Cambodian cuisine remains relatively unknown to the public as it has not been fully and actively exploited for national branding. To achieve economic growth, Cambodia needs to harness digital technology to promote and familiarize its food with the world.
- The Economic Diplomacy Strategy 2021-2023 outlines the efforts to promote Cambodian food by utilizing cookbooks, culinary training, and ambassadorial engagements. However, Cambodia has faced a number of challenges from fully advancing into a campaign.
- The policy brief underlines the importance of digital technology in marketing Cambodian cuisine abroad. By incorporating a comprehensive one-stop digital hub, Cambodia could provide easy access to recipes, cultural content, cooking classes, and tourism information, increasing Khmer cuisine's global presence and admiration.

Introduction

According to the 2023 Lowy Institute Asia Power Index, Cambodia ranked 21st out of 26 countries for cultural influence.¹ This ranking refers to Cambodia's ability to shape international public opinion through cultural appeal and interaction such as reputation abroad, its media image, and people-to-people exchange. Since then, the ranking has dropped from 17th in 2022 to 21st in 2023 due to the COVID-19 pandemic that decreased the tourism volume. A moderate increase to 18th place in 2024 indicates that Cambodia's cultural heritage has the potential to support the economy and should be strongly leveraged to maintain competitive growth.

In recent decades, food has played a significant role in international relations, demonstrating how it can be a powerful tool in strengthening diplomatic ties between nations and enhancing international cooperation and understanding. Culinary diplomacy and gastrodiplomacy has become increasingly crucial for nations to adopt in elevating their images as well as foster economic growth.² Despite Cambodia's rich cultural heritage, her cuisine is often overlooked and underrated. The Kingdom's cuisine remains relatively unknown, as evidenced by its absence from the 100 Best Cuisines, 100 Best Dishes in the World 2023-2024 by TasteAtlas.³ Cambodia was also not mentioned in the Best Food Cities and Regions category. This demonstrates that Cambodia's food culture is rather remote. The Far and Wide ranked Cambodia 9th in the Most Underrated Cuisine around the World by arguing the low level of exposure due to the civil war.⁴ In addition, the Chefs from Timeout mentioned Kep province as the most underrated food city in the world despite having an abundance of seafood dishes.⁵ Moving forward, utilizing digital space not only secures a spot for promoting Cambodian food on the global menu but also drives economic growth in various sectors from tourism to export.

1 Lowy Institute, "Cambodia - Lowy Institute Asia Power Index," Lowy Institute Asia Power Index 2023, n.d., <https://power.lowyinstitute.org/countries/cambodia/>.

2 Chapple-Sokol, Sam. 2013. "Culinary Diplomacy: Breaking Bread to Win Hearts and Minds." *The Hague Journal of Diplomacy* 8 (2): 161–83. <https://doi.org/10.1163/1871191x-12341244>.

3 TasteAtlas, "TasteAtlas Awards: These Are the 50 Best Cuisines & Food Cities," www.tasteatlas.com, n.d., <https://www.tasteatlas.com/best/cuisines>.

4 Max DeNike, "Most Underrated Cuisines around the World," www.farandwide.com, October 29, 2019, <https://www.farandwide.com/s/underrated-cuisines-world-8c951b1dd58e4fcf>.

5 Morgan Olsen, "18 of the World's Most Underrated Food Cities, according to Chefs," Time Out Worldwide, March 12, 2021, <https://www.timeout.com/food-and-drink/underrated-food-cities-around-the-world>.

Economic Growth as Priority

To become a high-income country by 2050, Cambodia has been leveraging multi-layered strategies and policies, including the Pentagonal Strategy-Phase I (2023-2028), and the Economic Diplomacy Strategy (2021-2023), aimed at enhancing economic growth. Cambodia's economy relies heavily on the tourism sector, which amounted to \$3.04 billion and accounted for 12% of its GDP in 2023. Before the COVID-19 pandemic, Cambodia saw a record 6.6 million international visitors. This number generated \$4.9 billion, which accounted for 18.2% of the GDP in 2019.⁶ Nonetheless, the overall number of international visitors in 2023 was just 82.5% of the 2019 record. This demonstrated the pandemic's devastating impact on the country's travel and tourist business. Yet, on a positive narrative, according to the Ministry of Tourism's 2023 report, there were 5.45 million foreign visitors to Cambodia. This number represented a 139.5% increase over 2022.⁷ This figure indicated a possible recovery in its tourist sector, as it was 139.5% higher than in 2022. Revenue from foreign tourism rose 115% from 2022 to 2023, from \$1.41 billion to \$3.04 billion. While tourism continues to grow, Cambodia still has a long way to go to achieve a high-income status, and thus an inclusive digital strategy should be employed to attract more visitors.

Becoming a Food Destination

According to the World Food Travel Association (WFTA), visitors spend roughly 25% of their travel time on food and beverages.⁸ The proportion can reach 35% in pricey destinations and as low as 15% in more economical ones. This means Cambodia could benefit from the revenue spent on food by foreign tourists by branding itself as a food destination. Being a hub to experience Cambodian food offers numerous benefits including tourism revenue increase, job creation in food services and hospitality, local business promotion, increase in demand for local products, and leverage of Cambodia's soft power on the global stage.

Recently, a list of 55 cities of the UNESCO Creative City Network⁹ helped expose Cambodia to the world stage when Battambang became the first city of Cambodia to join the list as a gastronomy destination. Known for its exceptional cultural heritage, Battambang is famous for its distinct dishes different from the rest of the country, such as "Nem - ណែម" (raw spiced fish), "Mee kola-មីកូឡា" (noodle dish), and "Kantuy hes-កន្ទុយរែកស" (spicy mixed prahok). The list shows that Cambodian cuisine has the potential to go global as long as there are effective promotional efforts and mechanisms. Leveraging Battambang as the city of food can attract tourists and contribute to economic growth.¹⁰

Meanwhile, Siem Reap can also become a food city, in addition to its ancient site's reputation. A great percentage of foreign visitors to Siem Reap spend 35% of their whole budget on food and drink. The city's economy depends crucially on tourism with 30% of GDP in 2019. A recent campaign, "Visiting Siem Reap 2024", is a new example of the government's continued effort to attract more foreign tourists by improving hospitality, maintaining and enhancing national security, and exploring the possibility of offering incentives to tourism-related projects in the province. This campaign would

6 Vanne Khut, "Recharging Cambodia's Tourism Sector - Khmer Times," Khmer Times, March 17, 2024, <https://www.khmertimeskh.com/501457530/recharging-cambodias-tourism-sector/>.

7 Ministry of Tourism, "Tourism Statistics Report January 2023," 2023, https://www.nagacorp.com/eng/ir/tourism/tourism_statistics_202301.pdf.

8 World Food Travel Association, "The Economic Impact of Food Tourism," www.worldfoodtravel.org, September 30, 2020, <https://www.worldfoodtravel.org/news-the-economic-impact-of-food-tourism>.

9 Thomas Mallard, "55 New Cities Join the UNESCO Creative Cities Network on World Cities Day," unesco.org, 2023, <https://www.unesco.org/en/articles/55-new-cities-join-unesco-creative-cities-network-world-cities-day>.

10 Phon Sothyroth, "Battambang Gastronomy Delights UNESCO Creative Cities Network - First Cambodian City to Join List | CamboJA News," cambojanews.com, November 2, 2023, <https://cambojanews.com/battambang-gastronomy-delights-unesco-creative-cities-network-first-cambodian-city-to-join-list/>.

encourage more local restaurants to adopt quality food and services to boost Cambodia's economic growth.

One of the five pillars in the Pentagonal Strategy-Phase I emphasizes the significance of digitalization in building a “sustainable, resilient, and inclusive” society.¹¹ Through the use of digital technologies, Cambodia can narrow the gaps in accessibility to essential services, address unequal distribution of opportunities, create a new engine for economic growth, promote a platform of information, and distribute benefits to Cambodian people. Hence, combining Khmer culinary art with digitization efforts, Cambodia can be the next food destination, a hub for tourists to experience the Kingdom's rich culture through food.

Gastrodiplomatic Efforts of Cambodia

Despite being the least known cuisine, the government has been working to promote the food on the global stage, especially by the Ministry of Foreign Affairs and International Cooperation's Economic Diplomacy Strategy (2021-2023), which aims to enhance trade and investment and promote tourism and culture.¹²



Figure 1: Overview of MFAIC Gastrodiplomatic Initiatives (Source: Author)

Under the Economic Diplomacy Strategy, three interconnected initiatives are used to promote food with multiple stakeholders including the Economic Diplomacy Coordinating Group responsible for assistance and monitoring, the National Institute of Diplomacy and International Relations (NIDIR) responsible for training, and diplomats who promote food.

Cookbook Diplomacy, Culinary Training Program, and Ambassadorial Events

Currently, Cambodia has been promoting its cuisine through the cookbook “The Taste of Angkor,” which consists of 38 recipes of the Khmer dishes and desserts with easy-to-follow instructions, including dishes such as “Nom Banhchok-នំបញ្ចក់”, “Pomelo Salad”, “Somlor Koko-សម្លក្រូច”, and

11 Chheng Niem, “Manet Addresses Regional Forum, Calls for Digital Cooperation, Innovation,” Phnompenhpost.com, 2024, <https://www.phnompenhpost.com/national/manet-addresses-regional-forum-calls-for-digital-cooperation-innovation->.

12 Ministry of Foreign Affairs and International Cooperation, “Economic Diplomacy - Ministry of Foreign Affairs and International Cooperation,” www.mfaic.gov.kh, n.d., <https://www.mfaic.gov.kh/EconomicDiplomacy>.



Photo: Authentic Nom Banh Chok Recipe for Cambodia's Beloved Khmer Noodles, grantourismtravel.com

many others.¹³ The purpose of the book is to (a) highlight the Foreign Ministry's achievements by showcasing how their efforts align with their economic diplomacy strategy as well as reflecting the Ministry's commitment and the tangible outcomes of their initiatives; (b) gift to foreign counterparts; (c) showcase authentic Khmer recipes and products; and (d) make diplomatic efforts to brand Cambodia through food.

In 2021 and 2022, "Taste of Angkor" won the "Best Asian Cuisine Book" and the "Best Heads of State/ Food awards" from the Gourmand World Cookbook Awards.¹⁴ In 2023, it received the "Best Television Award", which granted cooking videos made by NIDIR.¹⁵ Additionally, "The Culinary Art of Cambodia" first published in 1960 by Princess Norodom Rasmi Sobhanna also won the "Special Award of the Jury."¹⁶ Winning such awards shows that there is a growing worldwide interest in Cambodian food among the general population including experts like chefs and food writers.

Complimentary to the cookbook, MoFAIC has established The Angkor Kitchen, which is a culinary kitchen aimed at showcasing the Cambodian cuisine to foreign officials, potential investors, and more to witness the Khmer cooking. Moreover, there are also culinary training programs for diplomats and ambassadors' spouses to learn authentic Khmer cooking from various chefs including Chef Sao Sopheak and Chef Luu Meng.¹⁷ The training aims to equip diplomatic missioners with cooking skills to help promote to foreign counterparts by joining different expositions and events at the Cambodian embassies abroad. Besides, the training also includes the hospitality and dining services, silver service training, holiday decoration, and gift preparation.

13 Vantha Phoung, "Taste of Angkor Wins Top Cookbook Award," *Cambodianess*, December 2, 2021, <https://cambodianess.com/article/taste-of-angkor-wins-top-cookbook-award>.

14 Morokort Kheav, "The Taste of Angkor' Brings Home More Awards," *Cambodianess*, June 10, 2022, <https://cambodianess.com/article/the-taste-of-angkor-brings-home-more-awards>.

15 Khmer Times, "The Taste of Angkor Wins Best Television Awards in the World - Khmer Times," *Khmer Times*, December 1, 2023, <https://www.khmertimeskh.com/501400533/the-taste-of-angkor-wins-best-television-awards-in-the-world/>.

16 Peter Olszewski, "Princess' Cook Book Wins Swede Award - Khmer Times," *Khmer Times*, June 8, 2022, <https://www.khmertimeskh.com/501090784/princess-cook-book-wins-swede-award/>.

17 "NIDIR Hosts Training Course of 'Culinary Diplomacy' - Khmer Times," *Khmer Times*, December 13, 2022, <https://www.khmertimeskh.com/501202282/nidir-hosts-training-course-of-culinary-diplomacy/>.



Policy Critique

Although Cambodia is on the right path of gastrodiplomacy, it still remains relatively new. For gastrodiplomacy to be effective, the implementor needs to demonstrate the importance of food in transpiring foreign audiences; however, Cambodia has not fully exploited its cuisine as a tool for the nation branding until it became under cultural diplomacy.¹⁸ What are the challenges within the current policy approach?

Absence of Distinct Pallet

For foreigners to know what they want to eat on their trip, Cambodia needs to know what people in Cambodia eat in the first place. The lack of distinction to the neighbors is one thing, but the absence of a national dish is another. Even though Amok is a traditional Khmer food that many tourists are familiar with, there is a continuous discussion about which dish should be promoted more, with some people supporting Somlor Kokor and others favoring Nom Banhchok. Cambodia must have multiple national dishes that authentically represents the Khmer people, their culture, history, and individuality.¹⁹ Developing a national dish is crucial as it can be easily noticeable to foreigners, just like how people immediately think of Pad Thai and Tom Yum Goong for Thailand and Pho for Vietnam. Dishes such as Amok and Nom Banhchok are a clear reflection on Khmer cuisine as it is heavily influenced by Kroeung (Khmer spice/herb pastes), rice, fresh vegetables and freshwater fish with mild flavor due to its geographical location and climate.²⁰ For a successful campaign to promote food, Cambodia needs to have national dishes and distinct flavors.

18 Rethy Chhem and Siriwat Chhem, "Food Diplomacy for Cambodia's Nation Branding - Khmer Times," Khmer Times, December 22, 2020, <https://www.google.com/url?q=https://www.khmertimeskh.com/50796317/food-diplomacy-for-cambodias-nation-branding/&sa=D&source=docs&ust=1719264834725698&usg=AOvVaw0YZyX4KregtkPR-hoYiBUE>.

19 Shola Osiyemi, "Why National Dishes Are Very Important," Medium, July 18, 2023, <https://medium.com/@sholaosiyemi/why-national-dishes-are-very-important-602cb4f462f9>.

20 Cambodia Travel, "Cambodian Food: 10 Dishes You Should Try at Least Once," Cambodia Travel, accessed June 24, 2024, <http://surl.li/wtcqfh>

Promoting Food is Still a Subset of Economic Diplomacy

Gastrodiplomacy at MFAIC is still under the umbrella of Economic Diplomacy Strategy, and remains underexplored and overshadowed. Firstly, economic diplomacy encompasses a wide array of initiatives and strategies to enhance growth and attract investment. Such broad focuses on multiple strategies can dilute the effectiveness of gastrodiplomacy as food-based promotion may not receive the attention they require. Secondly, monitoring the success of gastrodiplomacy is challenging when it is embedded in the larger framework of economic diplomacy. Unlike a standalone, nationwide, inter-ministerial, and inclusive campaign, the success of the existing initiatives can be obscured by the nature of economic policies. To achieve the success seen in initiatives like the Global Thai program, the Malay Kitchen Program, Perú Mucho Gusto, and Korean Kitchen to the World, Cambodia must consider a dedicated approach to gastrodiplomacy.²¹ These successful campaigns demonstrate the benefits of a focused, inclusive strategy that highlights culinary heritage while fostering economic growth.

Financial Burden

In order for Cambodian goods like rice, cashew nuts, Kampot peppers, and Kampong Speu palm sugar to be displayed in an international exhibition, local businesses must currently ship these goods to Cambodian embassies overseas, who will then take them to the exposition. For many local companies, especially smaller ones, may struggle to afford the costs associated with shipping their products abroad. MFAIC should play a proactive role in providing support to local companies to send products. Covering shipping costs would serve as an incentive for companies to engage more actively in promoting their products internationally. The high costs associated with logistics can deter businesses from pursuing global opportunities, even when they recognize the potential benefits.

Policy Recommendations

As the world is turning digitalized, so should Cambodia. While the traditional campaign remains relevant, Cambodia could invest in a one-stop digital hub for users to access information and utilize digital media to enhance familiarity with Khmer food.

One-stop Digital Hub

Cambodia should invest in a one-stop internet portal where users can find information on Cambodian cuisine, while being able to shop for Khmer products. This one-stop approach would ensure efficiency, inclusion, and accessibility where this portal includes all forms of access to making, eating, and shopping for Cambodian food. Aside from accessing recipes, users can also book flights and hotels in Cambodia for trips through endless recommendations of accommodations in the portal. This digital hub should include the following features:

21 Juyan Zhang, "The Foods of the Worlds: Mapping and Comparing Contemporary Gastrodiplomacy Campaigns," *International Journal of Communication* 9 (2015): 568–91, <https://ijoc.org/index.php/ijoc/article/viewFile/2847/1316>.

Features	Description	Expectation
Recipes	A comprehensive collection of Cambodian food recipes from all regions, including traditional and modern meals, with step-by-step directions.	<ul style="list-style-type: none"> - Search bar: the users can search for recipes by region, province, ingredients, dish name, and so on. - Video tutorial: users can access either written versions in multiple languages, or use the video function to explain in detail - User submission: users can submit their own recipes in the app and give suggestions through the “review function”
Digital Booklets and Cultural Contents	Short guides to Khmer culinary art and culture, including historical context and cooking tips. Articles and multimedia content regarding Cambodian cuisine, traditions, and history will be accessible to users.	<ul style="list-style-type: none"> - Interactive Guides: Exciting, multimedia-rich guides to Cambodian cuisine through forms of visualization. Such as short videos, games, podcasts, and so on. - Up-to-date content: Content on Khmer food is added and updated regularly. It will be then shared to a centralized Facebook page, Instagram, Twitter, and more. - In-depth Articles: Comprehensive articles about various areas of Cambodian cuisine culture by scholars and academics. - Video documentaries: High-quality videos about culinary tradition showcasing different angles of Khmer food in different regions. - Photo Galleries: Visual tours of Cambodian cuisine and markets through pictures that can be submitted by users.
Cooking Classes	The government offers virtual cooking classes where people can learn how to cook Cambodian delicacies from experienced chefs. A support tool that allows users to phone and consult with culinary professionals when attempting to prepare a dish. A virtual cooking competition is held every year where users can showcase their cooking skills.	<ul style="list-style-type: none"> - Live Classes: Scheduled cooking demonstrations from experienced chefs with interactive Q&A done in both Khmer and English language. - Recorded Sessions: Access a collection of previous classes from lower level to advanced level. - Certificates: Upon course completion, a certificate will be given to users digitally as recognition. Testing virtually will also take place. - FAQ Section: Commonly Asked Questions and Troubleshooting Tips. - Competition: virtual competition allows users to film themselves making certain food and will be voted from the presentation.

<p>Cambodian restaurants and store listings</p>	<p>A directory of Cambodian restaurants that allows you to reserve tables, examine menus, compare prices, and read reviews. There is also a listing of Cambodian and international food stores where consumers can get authentic Khmer items.</p>	<ul style="list-style-type: none"> - Location-based search: users can search for Cambodian restaurants around the area with good reviews and listings. - Digital Menus and transparent pricing: users can access detailed menus of the restaurants with actual pricing. Users can also go to review sections to see the experiences. - Online reservation: users can make an online reservation at their desired restaurant through an online portal that allows users to alter their interests. Telephone numbers, email, and contact information are there to ensure efficiency. - Product availability: users can find Khmer products in grocery stores around their areas and their availability.
<p>Ingredient replacement and online shopping portal</p>	<p>Suggestions for substitute ingredients that can be used in place of traditional ones while maintaining the original taste of Khmer cuisine. An online store for buying actual Khmer products like Kampot peppers, Kampong Speu palm sugar, honey, Cambodian rice, fresh fruits, cashew nuts, and more.</p>	<ul style="list-style-type: none"> - Substitute list: users can find an array of substitution products that can be used in Khmer cooking. Users can also read the comparison tools that explain the substitute products' tastes. - Online shopping: to preserve the authenticity of Khmer food, the app highly suggests that users buy actual products in Cambodia instead of substitution. These products are categorized in different fields such as fresh produce, spices, ready-to-made products, and so on. - Global shipping: the products will be delivered globally to different regions of the world in weeks to ensure efficiency.
<p>Tourism App</p>	<p>Integration with another app developed by the Ministry of Tourism for gathering information and booking trips to Cambodia.</p>	<ul style="list-style-type: none"> - Trip Planning: users can find resources for organizing and scheduling trips. There are consultants that users can talk to in planning trips to the Kingdom - Destination Guides: users can find endless information on destinations in Cambodia, especially learning about Cambodia's culinary destinations. - Special Offers: The digital hub offers exclusive deals and discounts to its consumers.

Storytelling Campaign

Cambodia should have a separate campaign exclusively for promoting its cuisine, and a powerful tool is through visualization and storytelling. Aiming to emphasize the diversity of Cambodian cuisine, the Kingdom should work with both local and international filmmakers to create high-quality films on Khmer food. In this way, it showcases the subtleness of the Khmer food, making it more attractive. For instance, Thailand has been working with films through movies such as the *Sense of Siam* (2016) and the *Hunger* (2023). Cambodia should follow suit to market Khmer food.

Pitching Cambodian cuisine stories to popular food documentary shows like Netflix's "Street Food" can greatly increase visibility. By highlighting street food sellers and their unique dishes, the campaign may reach a worldwide audience via an established platform, generating international interest in Cambodian cuisine.²²

Working with celebrity chefs such as Chef Nak, Chef Sopheak, and Chef Luu Meng will effectively introduce and promote Khmer cuisine to the world. This can be done through digital platforms such as YouTube, Tik Tok, Reels on multiple platforms. Engaging with food reviewers such as "Best Ever Food Review Show" where they made more than thirteen videos on Khmer food with millions of views can bring Cambodian food to a larger audience.²³

Conclusion

Promoting Cambodian food through digital platforms can considerably boost the country's cultural influence and economic growth. By embracing technologies, Cambodia may become a gourmet destination, improving the tourism industry and attracting foreign tourists. The current initiatives, such as the Economic Diplomacy Strategy and the "Taste of Angkor" cookbook, had laid a good framework for gastrodiplomacy. However, more extensive efforts, such as a dedicated digital hub and storytelling campaigns, are required to highlight Cambodian cuisine's distinct characteristics and cultural legacy. By implementing these tactics, Cambodia can not only raise global awareness of its culinary heritage but also promote cultural interaction and thus long-term economic growth.

22 Jennifer Nadeau, "For Netflix's 'Street Food,' Food and Hardship Go Hand in Hand," Medium, August 27, 2019, <https://medium.com/@jennifernadeau/for-netflixs-street-food-food-and-hardship-go-hand-in-hand-46a95639ca9a>.

23 "Best Ever Food Review Show - YouTube," www.youtube.com, n.d., <https://www.youtube.com/@BestEverFoodReviewShow>.



CHAPTER 4

Digital Transformation for Sustainable Urban Living: Building Smart Cities Toward Cambodia Vision 2050

Dong Sakmay

Executive Summary

- Cambodia's rapid urbanization and economic growth have led to significant challenges in infrastructure, environment, public health, and other social issues. These challenges have affected the quality of life for urban residents.
- This policy brief aims to address these challenges by proposing digital transformation for sustainable urban living through the development of smart cities in line with the Cambodia Vision 2050.
- The paper also explores the concepts of smart and sustainable cities, identifies external factors influencing smart city development in Cambodia, and provides lessons learned and policy recommendations for building smart cities in the country.

Introduction

Rapid urbanization, technology development, and environmental challenges urge Cambodia to redesign its cities and quality of life. In recent decades, Cambodia experienced fast economic growth, at an average annual rate of 7.6% from 1995 to 2019.¹ This substantial growth has resulted in a rapid increase in urban populations, as development has been concentrated in major cities.² By 2030, Cambodia's urban population is projected to increase by around 7.4 million.³

The accelerated pace of urbanization has introduced four major risks, including infrastructure challenges, environmental degradation, public health concerns, and social issues.⁴ As cities expand, their infrastructure struggles to keep up with demands, leading to issues such as overburdened transportation systems, water shortages,⁵ and overwhelmed sanitation networks.⁶ Rapid urban growth also amplifies environmental impacts, driving up energy consumption, greenhouse gas emissions, and pollution levels—especially in densely populated areas that suffer from severe traffic congestion and compromised air quality.

Increased population density places an additional strain on waste management, resulting in pollution and associated health risks.⁷ Beyond physical health, urbanization also heightens public health concerns by contributing to anxiety, emotional stress, and lifestyle shifts that reduce physical activity, increasing risks of obesity, and other chronic health issues⁸. Vulnerable groups, such as

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- 1 The World Bank, "The World Bank In Cambodia," *The World Bank*. April, 2024. <https://www.worldbank.org/en/country/cambodia/overview#1>.
 - 2 The World Bank, "Population, total – Cambodia," *The World Bank*. 2023 <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=KH>
 - 3 National Institute of Statistics, "Final General Population Census of the Kingdom of Cambodia 2019." National Institute of Statistics, Ministry of Planning. November, 2021. <https://www.nis.gov.kh/nis/Census2019/Population%20Projection.pdf>
 - 4 Zurich Insurance. "The Risks of Rapid Urbanization in Developing Countries." *Zurich*. April 13, 2023. <https://www.zurich.com/en/knowledge/topics/global-risks/the-risks-of-rapid-urbanization-in-developing-countries>.
 - 5 Population Media Center, "HOW IS POPULATION GROWTH RESPONSIBLE FOR THE GROWING PROBLEM OF WATER SCARCITY," *Population Media Center*. October 13, 2022. <https://www.populationmedia.org/the-latest/population-growth-and-water-scarcity>
 - 6 World Health Organization, "Urban health," *World Health Organization*. October 29, 2021. <https://www.who.int/news-room/fact-sheets/detail/urban-health>.
 - 7 Omololu, Femi O., and Akinmayowa S. Lawal. "Population growth and waste management in metropolitan Lagos." *The Nigerian Journal of Sociology and Anthropology* 11 (2013): 83-100.
 - 8 Zhang Z, Zhao M, Zhang Y, Feng Y. How does urbanization affect public health? New evidence from 175 countries worldwide. *Front Public Health*. 2023;10:1096964. January 06, 2023, doi:10.3389/fpubh.2022.1096964

young people and those with lower education levels, are disproportionately affected by these challenges, underscoring the need for policies that address the broad and interconnected risks posed by rapid urban growth.⁹

To address these issues, Cambodia should redesign its cities to be more sustainable for its residents' quality of life in terms of infrastructure, environmental friendliness, and good overall health and well-being. To have a sustainable city with fast economic growth and rapid digital development, smart cities are the answer for the kingdom. Therefore, this paper aims to develop a policy brief on the digital transformation for sustainable urban living, focusing on building smart cities towards the Cambodia Vision 2050.

Defining Smart Cities and Sustainable Cities

In the fast-paced economic growth, urban cities need to be smart and sustainable to enhance the quality of life and overall well-being of its residents. Fast-growing cities, particularly Cambodia, can take advantage of technology to implement smart cities solutions for sustainable living and economic growth. These solutions play an important role in various aspects such as environmental impact, urban planning, resource efficiency, innovation hub, improved productivity, and investment attraction, etc.¹⁰

Various contexts, interpretations, and experiences of scholars and experts have defined the concept of smart cities in different ways. Smart cities can be defined differently by different industries, varying from construction, energy, social sciences, transportation, urban development, and information and communication technology (ICT).¹¹ Tuba Bakici defines smart cities as a city that integrates information and communication technology (ICT) infrastructure to create a sustainable, connected, and citizen-friendly urban environment.¹² According to a study by Iker Zubizarreta, a smart city is not just about technology but a way of life using technology to enhance residents' sustainability and quality of life.¹³ The study emphasized that communication is crucial for smart cities to efficiently share information about different aspects such as energy, traffic, and information systems. Effective communication between residents and other cities is essential for the proper functioning of smart cities. Similarly, a study by Hafedh Chourabi viewed smart cities as a living organism linked with many other subsystems and components.¹⁴ The study emphasized more that smart cities have sensors as a sensory organ to collect data, communication networks function like nerves for transmitting information, and software functions as a brain for processing data and making decisions.

Urban population growth urges the need for innovative urban planning to create a sustainable city for a quality of life. According to the United Nations (UN), the term sustainability refers to a balance between current needs and ensuring positive future generations.¹⁵ This goal aims to make sure the cities can access safe and affordable housing, affordable and sustainable transport systems, inclusive

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- 9 Zhang Z, Zhao M, Zhang Y, Feng Y. How does urbanization affect public health? New evidence from 175 countries worldwide. *Front Public Health*. 2023;10:1096964. January 06, 2023, doi:10.3389/fpubh.2022.1096964
 - 10 Sameh Wahba, "Here's how technology is tackling inclusion issues in smart cities," *World Economic Forum*. Feb 14, 2020, How can smart cities benefit people? | World Economic Forum (weforum.org).
 - 11 Anthopoulos, Leonidas G. "Understanding the smart city domain: A literature review." *Transforming city governments for successful smart cities* (2015): 9-21.
 - 12 Bakici, Tuba, Esteve Almirall, and Jonathan Wareham. "A smart city initiative: the case of Barcelona." *Journal of the knowledge economy* 4 (2013): 135-148.
 - 13 Zubizarreta, Iker, Alessandro Seravalli, and Saioa Arrizabalaga. "Smart city concept: What it is and what it should be." *Journal of Urban Planning and Development* 142, no. 1 (2016): 04015005.
 - 14 Chourabi, Hafedh, Taewoo Nam, Shawn Walker, J. Ramon Gil-Garcia, Sehl Mellouli, Karine Nahon, Theresa A. Pardo, and Hans Jochen Scholl. "Understanding smart cities: An integrative framework." In *2012 45th Hawaii international conference on system sciences*, pp. 2289-2297. IEEE, 2012.
 - 15 United Nations, "Sustainability," *United Nations*. <https://www.un.org/en/academic-impact/sustainability>.

and sustainable urbanization, and protect the world's cultural and natural heritage.¹⁶ In addition, the SDG 11 targets to reduce the adverse effects of natural disasters, reduce the environmental impact of cities, and provide access to safe and inclusive green and public spaces. This goal also targets to make sure cities have strong national and regional development planning, implement policies for inclusion, resource efficiency and disaster risk reduction, and support least developed countries in sustainable and resilient building.

The concept of a smart city is closely linked to Sustainable Development Goal 11 (SDG 11), which focuses on enhancing the quality of life for urban residents. Smart cities serve as an important tool for achieving SDG 11 by 2030. The goals of a smart city align well with these objectives. When a city adopts technology and integrates information and communication technology (ICT) infrastructure, it becomes smarter and more sustainable, supporting the United Nations' Sustainable Development Goals. Additionally, the United Nations Economic Commission for Europe (UNECE) promotes smart sustainable cities that utilize ICT to improve the quality of life for urban inhabitants.¹⁷ The implementation of ICT in a city will help ensure sustainability by meeting the economic, social, and environmental needs of both present and future generations.

Development of Smart Cities in Cambodia

With the rapid population growth in urban areas, cities within the Association of Southeast Asian Nations (ASEAN) face common challenges such as bad traffic and infrastructure, pollution, and a downgraded quality of life. In 2018, there were 10 member countries, and they took advantage of smart advanced technologies to address issues. Consequently, the ASEAN leaders established the ASEAN Smart Cities Network (ASCN) at the 32nd ASEAN Summit in April 2018 in Singapore.¹⁸ The ASCN is a collaborative platform for working together on developing smart and sustainable cities that use advanced technology to ensure the quality of life of its citizens. By June 2024, the ASCN has expanded its cities from 26 to 31, and Cambodia includes Phnom Penh, Siem Reap, Battambang, and Sihanoukville.¹⁹ In addition, the recent 44th and 45th ASEAN Summits took place on October 09, 2024, in Vientiane, Laos PDR, and reaffirmed the commitment to improving connectivity and resilience through smart urban development.²⁰ The summits aim to enhance economic integration, advance a sustainable and inclusive future, and embrace the digital age. The ASCN is part of wider initiatives to back the ASEAN Community Vision 2045, which seeks to achieve a more interconnected, resilient, and prosperous future for its member countries.

To achieve the goal, the ASCN developed a framework, the ASEAN Smart Cities Framework, as a guide. As shown in Figure 1, the framework is to achieve the strategic outcomes, including High Quality of Life, Competitive Economy, and Sustainable Environment. To succeed in these outcomes, the framework suggests the need for key urban systems, referred to as Integrated Master Planning and Development, and Dynamic and Adaptive Urban Government, that the ASEAN city could implement initiatives in any focus areas based on its current needs and context. There are six identified focus areas such as Civic and Social, Health and Well-Being, Public Safety and Security, Quality Environment, Built Infrastructure, and Industry and Innovation. This procedure needs Digital

16 The Global Goals, "11 Sustainable Cities and Communities," *The Global Goals*. <https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/>.

17 UNECE, "Smart Sustainable Cities," *UNECE*. <https://unece.org/housing/smart-sustainable-cities>.

18 Ludher, Elyssa, Nisha Sharda, Ruhi Lal, Yuting Xu, Clarice Chow, and Jarrell Ng. "ASEAN Smart Cities Network ii iii ASEAN Smart Cities Network." 2018.

19 Association of Southeast Asian Nations, "ASEAN Smart Cities Network 2024 Annual Meeting Report," Association of Southeast Asian Nations. https://asean.org/wp-content/uploads/2024/10/2024-ASCN-ME-Report-Final_25Sep2024-for-public.pdf.

20 Association of Southeast Asian Nations. 2024. Final Chairman's Statement of the 44th and 45th ASEAN Summits. ASEAN. https://asean.org/wp-content/uploads/2024/10/Final_Chairmans-Statement-of-the-44th-and-45th-ASEAN-Summits-1.pdf. November 3, 2024.

Infrastructure and Applications, as well as Partnership and Funding, to enable the city implementing the initiatives in its focus areas.



Figure 1: ASEAN Smart Cities Framework

As an ASEAN member state, Cambodia selected its cities for Smart Cities Action Plans (SCAPs). By 2018, there were 26 pilot cities, and Cambodia had selected Phnom Penh, Siem Reap, and Battambang. As of June 2024, the ASCN has grown to 31 cities, and Cambodia has added one more city, Sihanoukville.²¹ Since each city has its own characteristics and needs, Cambodia has adopted SCAPs with different focus areas and strategic targets.

Adopting the SCAP, Phnom Penh has a vision to enhance the quality of life of its citizens through urban environment improvement.²² To achieve this vision, Phnom Penh’s development focus area is Built Infrastructure, and in this area, the city focuses on two projects, including Project 1- 11 Sidewalks Rejuvenation and Project 2- Improving Efficiency of Public Transport and Project, to promote pedestrian-friendly environments by revitalizing and repurposing sidewalks across 11 boulevards and improve the efficiency of public bus service.²³ By enablers of Partnership and Funding of the ASCN framework, Phnom Penh received donations from Japan funding 140 buses and China contributing 98 buses²⁴, as well as Korea providing 200 buses, with the expectation of receiving thousands more in the future.²⁵ By 2023, Phnom Penh had a total of 235 buses with 13

21 Association of Southeast Asian Nations, “ASEAN Smart Cities Network,” *Association of Southeast Asian Nations*. <https://asean.org/our-communities/asean-smart-cities-network/>.

22 Association of Southeast Asian Nations, “ASEAN SMART CITIES NETWORK SMART CITY ACTION PLANS,” *Association of Southeast Asian Nations*. <https://asean.org/wp-content/uploads/2019/02/ASCN-Consolidated-SCAPs.pdf>.

23 Association of Southeast Asian Nations, “ASEAN Smart Cities Network Monitoring & Evaluation Report 2023,” *Association of Southeast Asian Nations*. https://asean.org/wp-content/uploads/2023/09/2023-ASCN-ME-Report-Final_14Aug2023-for-public.pdf.

24 The Asia Foundation, “Accessibility and Disability Inclusion on the Public Transport System in Phnom Penh,” last modified May, 2023. https://asiafoundation.org/wp-content/uploads/2023/05/Cambodia_Accessibility-and-Disability-Inclusion-on-the-Public-Transport-System-in-Phnom-Penh.pdf.

25 C. Nika, “Cambodia, Korean Firm Sign MoU On Donation Of 1,000 Buses,” *Ministry of Information*. June 30, 2023, <https://www.information.gov.kh/articles/108274>.

routes, yet only 25.5 percent of total buses were in operation and 4 out of 13 routes were active.²⁶ Although the public bus service is safe and cost-saving, citizens prefer other options such as their private vehicles and the Cambodian motorcycle rickshaw (Remorque) since the bus takes a long time to arrive at the bus stop and takes so much time to reach the passenger's destination²⁷ due to poor traffic management, lack of bus priority stop light and lanes, and poor walkability street.²⁸

The SCAP of Siem Reap aims to be a beautiful and unique tourist destination, characterized by the harmony of Khmer history, arts, and nature. To accomplish this vision, the city's development focus areas are Civic and Social, Security, and Quality Environment.²⁹ The Siem Reap city focuses on culture, heritage, and tourism by personal safety and security through CCTV, road traffic sensors, and pedestrian traffic sensors, as well as clean environment and resource management. The city administration prioritizes the development of two projects, including Project 1-Smart Tourism Management System and Project 2-Solid Waste and Water Management.³⁰ By 2023, the city had completed 38 Road Construction Projects that included the construction of over 106 km of roads and 250 km of drainage and sewerage systems, which were implemented in 2021.³¹ The 38 Construction Project also accomplished and installed 200 CCTV cameras, 20 traffic signals, 5,300 streetlights and 3,125 trees, and this could improve its citizen's quality of life in terms of Civic and Social, Safety and Security, as well as Quality Environment. However, there have been some big challenges in implementing Smart City. The issues include lack of tourism site promotions, inconvenient mobility and parking, security issues with low traffic safety, unorganized waste and infrastructure issues for waste management.

Battambang Smart City aims to become a city that is socially responsible, environmentally friendly, and economically prosperous. Based on the city's unique character and needs, Battambang Smart City prioritizes three development focus areas, including Civic and Social, Quality Environment, and Built Infrastructure.³² Battambang's current needs are low-cost housing and skill development for youth programs, improved drainage and sewage, and public infrastructure upgrades. Notably, the city has a recent construction completion of a 20.8-hectare landfill.³³ In addition, the Ministry of Public Work and Transport has been working with the Asian Development Bank (ADB) on the expanding drainage and sewage to build two new wastewater treatment plants in the city. The city also developed a Masterplan for Smart City Development that prioritizes developing waste management systems by using sensors and communication equipment ensuring efficient waste collection in the city. However, this project requires advanced technology and huge financial support.

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- 26 Association of Southeast Asian Nations, "ASEAN Smart Cities Network Monitoring & Evaluation Report 2023," *Association of Southeast Asian Nations*. https://asean.org/wp-content/uploads/2023/09/2023-ASCN-ME-Report-Final_14Aug2023-for-public.pdf.
- 27 Ros Puthineat, "Public Bus System Works, But Needs Improvement, Riders Say," *VOA Cambodia*. August 11, 2015, <https://www.voacambodia.com/a/public-bus-system-works-but-needs-improved-riders-say/2913585.html>.
- 28 SES Aronsakda, "The future of Phnom Penh's public transport can learn from past mistakes," *Future Forum*. Sep 15, 2021. <https://www.futureforum.asia/post/op-ed-the-future-of-phnom-penh-s-public-transport-can-learn-from-past-mistakes>
- 29 Association of Southeast Asian Nations, "ASEAN Smart Cities Network Smart City Action Plans," *Association of Southeast Asian Nations*. July 8, 2018. <https://asean.org/wp-content/uploads/2019/02/ASCN-Consolidated-SCAPs.pdf>.
- 30 Association of Southeast Asian Nations, "ASEAN Smart City Planning Guidebook," *Association of Southeast Asian Nations*. March, 2022. https://asean.org/wp-content/uploads/2022/06/ASEAN_SmartCityPlanningGuidebook_en_WEBSITE.pdf.
- 31 Siem Reap Provincial Administration, "SIEM REAP SMART Siem Reap Smart City Roadmap," *Siem Reap Provincial Administration*. March 2, 2023. https://siemreap.gov.kh/wp-content/uploads/sites/22/2023/10/SRSCRoadmap_ENG.pdf.
- 32 Association of Southeast Asian Nations, "ASEAN Smart Cities Network Smart City Action Plans," *Association of Southeast Asian Nations*. July 8, 2018. <https://asean.org/wp-content/uploads/2019/02/ASCN-Consolidated-SCAPs.pdf>.
- 33 Association of Southeast Asian Nations, "ASEAN Smart Cities Network Monitoring & Evaluation Report 2023," *Association of Southeast Asian Nations*. https://asean.org/wp-content/uploads/2023/09/2023-ASCN-ME-Report-Final_14Aug2023-for-public.pdf.



Photo: Sihanouville port, Shutterstock

Recently, the Smart Cities Innovation Lab (SCIL), a platform to scale-up short and long-term sustainable smart city solutions, selected Chiang Mai of Thailand, Sihanouville of Cambodia, and Surabaya of Indonesia to transform to Smart City.³⁴ Sihanouville is to promote Smart, Sustainable, and Inclusive City that aim to build on the above human security foundations with the principle of “leaving no one behind”.³⁵ The Sihanouville Smart City focuses on three main initiative pillars as follows:

- i. Pillar 1: People-focused smart planning & e-governance through innovative digital participation;
- ii. Pillar 2: Smart services through crowdsourced data and information; and
- iii. Pillar 3: Digital empowerment to reduce the digital divide and foster human rights.

The action plan of pillar one aims to achieve transparent e-governance and equal Access to information to ensure the transparency and accessibility in government allowing its citizens to be able to access the information and engaging, as well as all residents can access to essential information. The pillar two sets to collect data information to design services such as transportation, land management, and housing by collaborating with local communities. The third pillar prioritizes providing equal benefits of digital transformation.

34 Mao Sreypitch, “Sihanouville Selected to Transform into Smart City,” *Kiripost*. March 17, 2023, <https://kiripost.com/stories/cambodia-sihanouville-selected-to-transform-into-smart-city> (June 13, 2024)

35 United Nations, “SIHANOUKVILLE FOR ALL: promoting a Smart, Sustainable and Inclusive City,” *the United Nations*. September 22, 2021. https://www.un.org/humansecurity/wp-content/uploads/2022/06/Annex-3_Case-Study_Smart-City-Concept_compressed.pdf.

Assessing the Influence of External Macro-Environmental Factors

Building Smart Cities is a significant project, and there are numerous factors that impact development. Overseeing the crucial elements could be beneficial. Therefore, this paper evaluates the impact of external macro-environmental factors, including political, economic, social, technological, legal, and environmental aspects.

Political Factor

Cambodia's government currently has four cities in ASCN under the development of Smart Cities to aim for a quality of life, competitive economy, and environmentally friendly cities. In line with the ASCN, the Royal Government of Cambodia (RGC) has developed a Pentagonal Strategy-Phase 1. The strategy focuses on Growth, Employment, Equity, Efficiency, and Sustainability for Cambodia to become an upper-middle income country by 2030. This is a strong foundation towards achieving the Cambodia Vision 2050. The strategy further suggests the five key priorities such as people, road, water, electricity, and technology. This strategy is in perfect alignment with the ASCN and SCAP of Smart Cities development, aiming for smart and sustainable cities.

Economic Factor

Investing in smart city projects holds great promise by spurring economic activity, addressing the rising demands for improved infrastructure and services, and ultimately contributing to the creation of job opportunities and a more sustainable urban environment. With the rapid economic growth, with about a 6% annual GDP growth, the development of Smart Cities will proceed smoothly and play an essential role in shaping our urban future and enhancing the quality of life for residents. A healthy economy is very important to shape the Smart City landscape in Cambodia.

Social Factor

In Cambodia, social factors play a crucial role in influencing the development of smart cities. Public awareness and acceptance of renewable energy technologies are essential social factors that impact the adoption of sustainable practices in smart city development. Furthermore, the availability of educational programs and skill development initiatives is pivotal in shaping the workforce and promoting innovation in technology and urban planning. Additionally, the employment opportunities generated by the renewable energy sector contribute to the socio-economic development of smart cities in Cambodia, fostering a sustainable and inclusive urban environment.

Technological Factor

The development of smart cities in Cambodia is significantly influenced by technological factors such as the readiness of existing infrastructure, the integration of IoT devices, data management and analytics capabilities, digital governance practices, and cybersecurity measures. These technological factors are crucial in determining the feasibility and effectiveness of smart city initiatives in Cambodia. To successfully implement smart city initiatives in Cambodia, it is essential to assess and address these technological factors. The readiness of existing infrastructure lays the groundwork for integrating IoT devices and establishing effective data management and analytics capabilities. Moreover, robust digital governance practices and cybersecurity measures are vital in ensuring the security and efficiency of smart city systems in Cambodia.

Legal Factor

Key legal factors in Cambodia that influence Smart Cities development include data privacy regulations, regulatory frameworks for emerging technologies, public-private partnership laws, intellectual property rights protection, and compliance with international standards. In addition, it is crucial for Smart Cities development in Cambodia to adhere to environmental laws and regulations, as well as to consider cybersecurity measures to ensure the safety and security of the smart infrastructure. Furthermore, establishing clear guidelines for the collection, storage, and use of citizen data is paramount for the successful and ethical implementation of Smart City initiatives in Cambodia. Understanding and addressing these legal factors is crucial for the successful implementation of smart city initiatives in Cambodia.

Environmental Factor

In Cambodia, the environmental factors to consider in a PESTLE analysis for Smart Cities development include waste management, renewable energy integration, green spaces and urban biodiversity, pollution control, and climate change resilience. In addition, evaluating the impact of urbanization on water resources, air quality, and natural habitats is crucial for sustainable Smart Cities development in Cambodia. These factors are crucial for promoting sustainable and environmentally friendly smart city initiatives.

Policy Recommendations

According to the characteristics of different cities and the current challenges of Cambodia, such as Phnom Penh, Siem Reap, Battambang, and Sihanoukville, as well as the external macro-environmental factors, the following are five important policy recommendations for building smart cities in Cambodia:

Phased Approach to Development

Start smart city initiatives gradually, prioritizing essential infrastructure, such as reliable power, water, and digital networks. This could include establishing data centers as key facilities to handle the vast amounts of data generated by smart city technologies. Building data centers early on will help enable efficient data processing, storage, and analysis, ensuring that future smart city applications have the necessary digital backbone to function smoothly.

Economic Feasibility and Government Support

To ensure smart city projects are financially sustainable, conduct a thorough analysis of investment costs and returns on investment. Additionally, government incentives, like tax breaks or subsidies, can attract private sector involvement and help mitigate the high initial costs of smart city projects, ensuring long-term economic viability.

Public Awareness and Acceptance

Foster public understanding and acceptance of smart city technologies by promoting digital literacy and addressing concerns about access and equity. By educating citizens on how these technologies can improve daily life, such as through better transportation or improved public services, the initiative can bridge the digital divide and create an inclusive, technology-friendly society.

Legal and Environmental Considerations

Develop legal frameworks that protect data privacy and cybersecurity, especially given the role of data centers in storing sensitive information. Furthermore, as data centers are energy-intensive, they promote sustainability measures, such as renewable energy sources and energy-efficient cooling systems, to reduce their environmental impact. Emphasizing sustainability for data centers aligns with Cambodia's goals for environmentally responsible smart city development.

Data Infrastructure and Management

Recognize data centers as a vital component of smart cities, supporting data storage, processing, and real-time analysis needed for effective service delivery. Encourage public-private partnerships to fund and manage data centers while promoting green data center practices. This recommendation ensures a robust data infrastructure that underpins all smart city functions, from traffic management to public safety, and helps Cambodia prepare for data-driven urban development.

These policy recommendations aim to provide a comprehensive approach to building smart cities in Cambodia, considering economic, social, and environmental factors and addressing the challenges identified in the context of sustainable urban living for Cambodia Vision 2050.

Conclusion

The development of smart cities is pivotal for Cambodia's future urban infrastructure and sustainable living. Through a comprehensive PESTLE analysis, it is evident that the integration of smart city technologies, supported by essential digital infrastructure like data centers, presents a viable solution to address the challenges faced by Cambodian cities, such as traffic congestion, pollution, and inefficient resource management. Data centers, in particular, will be critical for managing the high volume of data necessary to operate smart city systems effectively and securely.

Therefore, there is a critical need for policymakers and stakeholders to prioritize the initiation of smart city development. This paper recommends a phased approach, focusing on foundational infrastructure, including data centers, and public awareness, while also advocating for specific policy measures to overcome the identified PESTLE challenges. By embracing smart city initiatives and establishing robust data infrastructure, Cambodia can catalyze its journey towards sustainable urban living and economic growth in alignment with the Cambodia Vision 2050.



Photo: A man uses the new app to track his intended bus ride., Khmer Times

CHAPTER 5

Transforming Phnom Penh's City Buses: Digital Solutions for a More Livable City

Khorn Sokcheata

Executive Summary

- Cambodia has seen a rapid surge in private vehicle ownership, and Phnom Penh's population is projected to reach over 2.4 million by 2030, putting more stress on the city's congested streets.
- Improving the existing city bus system should be the priority, as Phnom Penh remains one of the cities in Asia that needs meaningful public transit.
- The Royal Government of Cambodia (RGC) should pursue Public-Private Partnerships (PPPs) to digitalize the city bus system in two key areas: (1) Developing user-friendly mobile apps for real-time bus information, digital payments, and trip planning and (2) Implementing smart bus stops with real-time arrival and departure displays.

Introduction

On a calm February morning of 2014, amidst the everyday commotion of Preah Monivong Boulevard, Phnom Penh awakens to a new sight. The city's first-ever bus, after 13 years, made its way through the busy street, marking a significant milestone in public transportation. This achievement came after previous attempts to launch public buses in 2001, which unfortunately failed within two months due to low passenger numbers.¹ Fast forward to 2024, a decade later, despite the hopes and efforts to address chronic congestion by expanding the bus network, Phnom Penh's city buses still struggle to gain ridership.

Cambodia recorded an average annual increase of 11.3% in the number of private vehicles registered in the country in the last five years, according to the Ministry of Public Works and Transport (MPWT).² The city is also on its way to accommodate more than 2.4 million people in 2030 if the projections are right, most of whom might share the same aspiration of owning a car and motorbike, adding additional stress to the already congested Phnom Penh's streets.³

Given the rapid urbanization in Phnom Penh, now is the perfect time for the government to carefully assess the situation and take action to address these mobility challenges. The city's bus system has the potential to help mitigate traffic congestion, but the current design and implementation have yet to achieve this. Although there have been previous attempts to address the system's shortcomings, these efforts have had limited success. It is crucial to avoid repeating the same mistakes and ensure that Phnom Penh does not find itself, another decade later, still grappling with the same struggle to attract ridership for the city buses. Even worse, there is a pressing need to prevent the unfortunate scenario where the city buses might completely vanish from the city's streets altogether.

In this paper, I argue that it is very relevant for the government to focus on improving the city bus system to attract more ridership. Doing so is highly significant for addressing Phnom Penh's traffic issues in particular and creating a more livable city as a whole to avoid locking Phnom Penh into a pattern of unsustainable growth. Ignoring this matter could lead to future headaches, with traffic congestion reaching unbearable levels and Phnom Penh becoming an undesirable place, where residents are only looking forward to leaving.

1 "Cambodians Board Phnom Penh's First Public Buses in More Than a Decade," The Guardian. February 17, 2014, <https://www.theguardian.com/global-development/2014/feb/17/cambodia-public-buses-phnom-penh>.

2 Manoj Mathew, "Cambodia's Vehicle Population Grows by 11.3%," Khmer Times. March 9, 2023, https://www.khmertimeskh.com/501251641/cambodias-vehicle-population-grows-by-11-3/#google_vignette.

3 The Statistics Bureau of Japan, Population Projections for Cambodia, 2008-2030, Tokyo: The Statistics Bureau of Japan.

Context Analysis

Why is Public Transport Important for Cities?

A modern and far-reaching public transport infrastructure does not just serve local populations but also turns cities into more attractive places for international visitors, tourists, and investors, who enjoy more freedom of movement, less congestion, and more reliable journeys. Phnom Penh does not have to look far to the European countries for relevant examples of public transit - many cities across Asia have demonstrated how to stimulate sustainable transport options centered on public transit. Cities like Bangkok, Jakarta, and Manila are investing in metro lines, rail systems, expanded bus services, and ferry networks, as well as elevated walkways and bicycle lanes.

Phnom Penh remains one of the few cities in Southeast Asia that lack meaningful public transit. The city has attempted to roll out various public transit networks, but these efforts were not successful despite heavy subsidies. One example was the introduction of a water taxi service along the Phnom Penh riverfront in 2018.⁴ This was popular at first due to its novelty, but ridership declined in the following months as it was disconnected from other modes of transportation, leaving passengers stranded once they got off. Around the same time, an airport rail link was inaugurated.⁵ It aims to connect the city center to the international airport, reducing congestion on the busy Russian Boulevard. However, the project faces some issues. Phnom Penh's older train station proved unsuitable to serve as a hub for various transportation options.⁶ Passengers had to take additional transport just to reach the station, and travelers arriving from the airport were left without easy onward connections. The rail line also has to share its route with other vehicles which was a safety concern due to lax traffic enforcement and a lack of separate tracks. Another public transit option, the Phnom Penh City Bus, has also struggled to become an effective public transportation solution. The bus service is unreliable and the lines have limited coverage in some areas. The lack of dedicated bus lanes and insufficient government support to improve the system have also hindered its development.

Why is Tackling this Issue Important?

When it comes to public transportation in Phnom Penh, improving the existing city bus system should be the first priority. While the government may aspire for more advanced transport modes like subways, sky trains, cable cars, or expensive high-speed trains in the future, those would require time and resources to plan, fund, and implement. A more realistic and achievable goal for now is strengthening the existing city's bus network.

In improving the city bus system, the goal is not to entirely replace private vehicles like cars and motorbikes as it is unrealistic in the context of Cambodian people. The goal should be to provide a viable public transportation option that can accommodate and relieve some of the pressure from the growing number of private vehicles on the roads. The government can begin by making it attractive and practical for a certain segment of the population, such as students, garment workers, low-income residents, and elderly and disabled passengers.

4 Aronsakda Ses, "The Future of Phnom Penh's Public Transport Can Learn from Past Mistakes," Future Forum, September 15, 2021, <https://www.futureforum.asia/post/op-ed-the-future-of-phnom-penh-s-public-transport-can-learn-from-past-mistakes>.

5 Ibid.

6 Ibid.

What Are the Root Causes of the City Bus Not Gaining Ridership?

Lack of Pedestrian Sidewalks

For the city bus to work, there needs to be a proper and safe sidewalk where pedestrians can walk from their place to the bus stop and back. Existing sidewalks in Phnom Penh are occupied by illegal parking and street vendors and are being used as personal parking spaces by restaurants. As a result, pedestrians are forced to walk on the roads which is extremely unsafe and further contributes to the city's congestion problems. Moreover, the poor pedestrian infrastructure disincentivizes even short-distance walking trips, leading more people to use private vehicles which further worsens the congestion issue.

In contrast, well-designed and accessible sidewalks would encourage more pedestrian movement and the use of non-motorized transport. The lack of pedestrian sidewalks poses a direct challenge to the effectiveness of Phnom Penh's city bus system. Since buses do not provide door-to-door service, commuters need to be able to safely and conveniently access the bus stops. Even a short 10-minute walk from home to the bus stop can act as a major deterrent if the walking route is unsafe or uncomfortable.

Limited First and Last-mile Access

The first and last mile refers to the options and challenges people face in getting to and from the main public transportation routes, whether it is from their starting point (like home or office) to the bus stop, or from the bus stop to their final destination. This "first and last mile" connectivity is the most important factor in determining whether an individual will choose to use public transportation or not.⁷

Suppose the options for that first and last leg of the journey are inconvenient, unsafe, or unreliable. In that case, it is a major deterrent for potential riders, even if the main transit service itself is efficient and well-designed. For example, if someone has to walk a long distance on poorly maintained sidewalks to reach the nearest bus stop, they may opt to drive or take a ride-hailing service instead. Moreover, if the city bus aims to target low-income, disabled people, and elderly people, this first and last mile is a major hindrance that prevents these segments of the population from using the city bus.

Conversely, when the first and last-mile connectivity is seamless - with accessible sidewalks, bike lanes, shuttle services, or other options - it can greatly boost the attractiveness and usage of the public transit system as a whole. Commuters are more willing to use buses, trains, or other modes if they can reliably and comfortably get to and from the main transit stations or stops.

No Dedicated Bus Lanes

When there are no dedicated lanes for the bus, it is forced to share the same lanes as other vehicles which slows it down and makes the service less reliable. This would raise doubt in commuters' minds about the usefulness of taking the bus if it is no faster than driving or using a ride-hailing service.

⁷ Giulia Oeschger, Brian Caulfield, Paraic Carroll, "Investigating the Role of Micromobility for First-and last-mile Connections to Public Transport," *Journal of Cycling and Micromobility Research* 1, no.1 (2023): 8.

Lack of Information on the Bus Routes

Phnom Penh's city bus faces some challenges in providing information to passengers. While the government has expanded the city's bus network since 2014 and created a mobile app called "City Bus App" to offer real-time bus information, there are still shortcomings with the app's functionality and the overall accessibility of bus route data.

The "City Bus App" purpose is to give passengers information on bus routes, real-time bus locations, and estimated arrival and departure times at stations. However, feedback from a lot of users indicates that the app is difficult to navigate, and the live location tracking and schedule forecasts are not always accurate. This makes it harder for passengers to plan their journeys and stay informed about the bus system. The limited availability of clear and reliable public transportation information is a challenge for residents and visitors who want to use the city's bus network.

Critique of Policy Options

Increase the Number of City Buses

It appears the government's approach to fixing the bus network in Phnom Penh has focused on increasing the number of buses in operation. Following the reopening of the system in late 2021 after the COVID-19 pandemic, the number of buses has grown significantly, with the addition of 1,000 new buses gifted by a South Korean company in June 2023.⁸

The logic behind this "more is more" strategy seems to be that adding more buses will automatically generate greater public interest and usage, and result in an improved overall experience. However, this may not be the most effective approach, as the root cause of the bus not gaining ridership is not that there are small numbers of buses but more of the services are unreliable, slow, and do not bring the passengers to their final destinations. Therefore, it cannot convince people to give up private vehicles.

In fact, introducing more buses to the already congested streets of Phnom Penh could potentially worsen the traffic congestion issues, as buses take up more space compared to other modes of transportation. The buses would have to push in alongside cars, tuk-tuks, and motorbikes on crowded streets, leaving the riders in the same traffic that they try to avoid. Now they are caught in larger vehicles that make frequent stops and may question the value of using the city bus if it does not provide a quicker or more efficient journey compared to other modes of transportation.

Increase Road Infrastructure

The authorities in Phnom Penh have focused heavily on major infrastructure projects like flyovers, bridges, and road expansions to address traffic congestion.⁹ While investing in such large-scale projects is important to accommodate the growing urban population, this approach alone may not be fully effective in the long run. This is due to the principle of induced demand - building more roads, flyovers, and bridges does not necessarily reduce congestion, but would incentivize people to use private vehicles even more, leading to congestion levels rising at a similar pace.¹⁰

8 Sochan Ry, "South Korean Firm Helps Enhance Public Transit with 1K Buses," Phnom Penh. June 20, 2024, <https://www.phnompenhpost.com/national/south-korean-firm-helps-enhance-public-transit-1k-buses>.

9 "Cambodia Finalises Plans for 150 Infrastructure Projects," Phnom Penh. June 20, 2024, <https://www.phnompenhpost.com/national/cambodia-finalises-plans-150-infrastructure-projects#:~:text=Cambodia%20is%20currently%20in%20the%20process%20of%20finalising,Minister%20of%20Public%20Works%20and%20Transport%20Sun%20Chanthol>.

10 Benjamin Schneider, "CityLab University: Induced Demand," Bloomberg. September 6, 2024, <https://www.bloomberg.com/news/articles/2018-09-06/traffic-jam-blame-induced-demand>.

As governments allocate funds to enhance the road infrastructure in Phnom Penh, a portion of these funds must be allocated toward improving public transportation. This is crucial as public transportation plays a significant role in determining the overall livability of the city. Moreover, rather than investing in roads, bridges, and flyovers alone, Phnom Penh should also prioritize investment in pedestrian infrastructure. This includes building safe, shaded public sidewalks to encourage walking and make the city more accessible for non-drivers. A more balanced approach that combines strategic road expansions with robust pedestrian and public transit infrastructure may be a more effective long-term solution to Phnom Penh's traffic challenges.

Policy Recommendations

An efficient and well-integrated public bus system is an important element of urban planning. To achieve a vibrant and effective public transportation system, the government's efforts must involve various approaches, including comprehensive urban planning, vehicle ownership management, policy implementation, etc. However, this paper will exclusively focus on digital solutions and explore how the government can integrate technology into the existing city bus system to enhance its performance. The rationale behind this exclusive focus is the belief that while there are already sufficient policy recommendations for improving public transportation in Phnom Penh, the potential of digitalizing the system remains an untapped area that the government has yet to explore.

The government should seek Public-Private Partnerships (PPPs) with private firms to digitalize the current city bus system. PPPs are a mechanism in which the government procures and implements public infrastructure and/or services using the resources and expertise of the private sector.¹¹ This approach has been utilized by governments worldwide on large-scale government projects, such as roads, bridges, or hospitals.

The PPPs are particularly beneficial for projects that involve technology, as they allow private-sector technology and innovation to be combined with public-sector incentives to complete the work on time and within budget. The concept of PPPs allows the government to hand over day-to-day operational responsibilities to private sector companies that are more efficient at running those operations. This, in turn, frees up the government to focus on its core responsibilities, such as regulating and overseeing the services.

In the case of digitalizing the city bus system, there are two key areas where the government should consider leveraging the PPPs. The first digital transformation area is to improve the existing mobile apps for Phnom Penh's city bus. This can be achieved through partnering with private technology firms through a PPP, the government can develop user-friendly apps that provide real-time updates on bus arrivals, allow for digital payments, and offer trip planning capabilities. This would enhance the passenger experience and encourage greater ridership.

The second area of digital transformation is the introduction of smart bus stops. As the government plans to create dedicated bus lanes, implementing intelligent bus stops that provide real-time information would be highly advantageous. While this technology is relatively new in the Cambodian context, it can be gradually rolled out in steps. Smart bus stops should feature displays that show departure, arrival times, and bus numbers synchronized with the current mobile apps for real-time updates. This area of technology can be implemented under the PPPs arrangement with private companies that specialize in the Internet of Things (IoT) and digital infrastructure.

11 Emmanuel Nyirinkindi, "Five Ways PPPs Deliver Impact," World Bank Blogs. November 30, 2023, <https://blogs.worldbank.org/en/ppps/five-ways-ppps-deliver-impact>.

These two digital solutions, while important, will not solve all the issues facing the city bus system. A multi-pronged approach is required to address the root causes of low ridership. The digital initiatives should be implemented alongside other policy measures, such as improving bus frequency, optimizing routes, and enhancing the overall quality of service. By adopting a PPP model, the government can leverage private-sector expertise and resources to drive the digital transformation of the city bus system while maintaining its regulatory and supervisory role.

Conclusion

Phnom Penh faces significant challenges in establishing an effective and widely-used public bus system. Despite previous attempts to introduce bus services, the system has struggled to gain ridership and address the city's growing traffic congestion. As Phnom Penh continues to urbanize rapidly, the need for a reliable and integrated public transportation network has become increasingly important.



This paper has argued that improving the existing city bus system should be a priority for enhancing urban mobility in Phnom Penh. While the city may aspire to more advanced transit options in the future, strengthening the bus network represents a practical and achievable first step. Key barriers to greater bus usage include limited pedestrian infrastructure, poor first and last-mile connectivity, absence of dedicated bus lanes, and lack of information on bus routes.

To address these issues, the paper proposes that the government explore the PPPs to digitalize the city bus system. Specifically, the PPPs can be leveraged to develop user-friendly mobile apps and implement smart bus stops. These digital solutions have the potential to enhance the passenger experience and encourage increased bus ridership. Importantly, the digital initiatives must be implemented alongside other policy measures to improve bus service quality, route optimization, and overall system integration.





CHAPTER 6

Embracing Public-Private Partnerships (PPPs): A Key to Enhance ICT Infrastructures in Cambodia

Sothy Pichseth

Executive Summary

- Information and Communications Technology (ICT) is vital for social and economic development, and the Royal Government of Cambodia (RGC) has recognized the importance of the robust ICT infrastructures in the Pentagonal Strategy-Phase I (2023-2028) and has subsequently issued policies in the Cambodia Digital Economy and Society Policy Framework 2021-2035 and the Cambodia Digital Government Policy 2022-2035 for the guidance of this development.
- Public procurement, privatization, and Public-Private Partnerships (PPPs) are the primary approaches for building and managing large-scale infrastructures. While each mechanism has its advantages and disadvantages respectively, the PPPs offer a balanced approach to developing comprehensive and sustainable ICT infrastructure by combining public sector oversight and private sector resources.
- Given the significance of improving ICT infrastructures using the models of the PPPs, this paper provides practical policy recommendations such as (1) scaling up the PPPs in the ICT sector; (2) optimizing the use of the Universal Service Obligation Fund (USOF); and (3) strategically leveraging Public Procurement.

Introduction

Information and Communications Technology (ICT) infrastructure is a cornerstone of economic growth, social development, and global competitiveness in the rapidly evolving digital age. For Cambodia, enhancing the ICT infrastructure is crucial to unlocking its potential in various sectors, including education, healthcare, and commerce. However, developing and maintaining a robust ICT infrastructure requires substantial investment, advanced technical expertise, and efficient management.

There are primary approaches to building and managing the large-scale infrastructure, including public procurement, privatization, and the Public-Private Partnerships (PPPs). Each of these approaches has distinct advantages and challenges. In the traditional approach, the government funds and oversees the development of infrastructure through direct contracts with private companies. While ensuring public control and accountability, the public procurement often encounters limitations such as budget constraints, bureaucratic inefficiencies, and slower innovation. On the other hand, privatization involves private procurement and transferring the ownership and management of infrastructure from the public entity to private entity. It can lead to increased efficiency and innovation due to market competition. However, the privatization also results in reduced public control and a higher cost for consumers due to a focus on profit over public interest from the private companies. The PPPs offer a collaborative framework that leverages the strengths and resources of both the public and private sectors. By mobilizing significant financial investments, integrating cutting-edge technologies, and sharing risks and responsibilities, the PPPs can facilitate the development of comprehensive and sustainable ICT infrastructure.

This policy brief aims to explore and compare these available approaches to demonstrate why the Royal Government of Cambodia (RGC) needs the private sector to fill the investment and expertise gaps. By fostering a conducive environment for the PPPs, Cambodia can accelerate its digital transformation, enhance connectivity, and ultimately improve the quality of life for its citizens.

Government Policy

In the Pentagonal Strategy-Phase I, the RGC has identified five key priorities, such as people, road, water, electricity, and technology.¹ While the first four priorities have been the continual priorities since the implementation of the Rectangular Strategy-Phase IV, the RGC considers technologies as a new important catalyst to enhance economic productivity, as well as boost the efficiency of administration. To invigorate digitalization in Cambodia, the side 3 of the Pentagon 5 has emphasized the acknowledgment of the importance of building and developing digital infrastructures as a major component that will push the development forward. The strategic objectives are to build and expand digital infrastructures, including digital connectivity and telecommunications infrastructures. These objectives are aimed at strengthening the quality and efficiency of digital connectivity, and several key actions have been raised. For instance, the government has a strong intention to encourage telecommunications operators and Internet service providers to improve the quality and coverage of services through more investments in infrastructures, especially in areas with high potential such as underserved rural regions, industrial hubs, tourism sites, and agribusiness regions. The RGC is also willing to continue to build and develop telecommunication backbone infrastructures and distribution networks and enhance digital infrastructure connectivity at both national and sub-national levels. Furthermore, in order to encourage private companies to invest in building and expanding telecommunication networks and supporting infrastructures for high-speed Internet connections to reduce digital gaps, the RGC has introduced the “Universal Service Obligation Fund”.

The Cambodia Digital Economy and Society Policy Framework 2021-2035 and the Cambodia Digital Government Policy 2022-2035 are the two important policies that aim to boost productivity, efficiency, and effectiveness in society, economy, and administration. In the Cambodia Digital Economy and Society Policy Framework 2021-2035, the RGC sets out a long-term vision to build a vibrant digital economy and society by laying out a solid foundation for promoting digital adoption and transformation in all sectors including the state, citizens, and businesses.² The attempt is to adopt, capture, and maximize the benefits of advances in ICT and digital technology to promote new economic growth and improve social welfare. That is because digitization has become an influential trend and a driving force for economic development and almost every sector of the economy and society. Digital technologies have affected and changed the way we do business, work, and pursue lifestyles. In the policy framework, it has stated that developing infrastructures to enable digital transformation is the primary foundation. This priority has arisen from the concern that the ICT systems in Cambodia have remarkably grown rapidly. However, Cambodia’s readiness to embrace the digital sector remains challenging due to the limited supporting infrastructures. This observation does not disregard or underestimate the effort from the government to have incentivized the development of digital infrastructure over the years in response to strong growth of demand to use the Internet, especially mobile Internet.

Moreover, Cambodia has made moderate strides in telecommunication infrastructure at the regional and global levels. Although Cambodia’s Internet infrastructure has better coverage and affordability, especially in large cities and towns, the overall quality remains limited. At the same time, the existing infrastructures are inadequate to drive digital transformation and seize new opportunities. Therefore, to serve as the foundation for the digital transformation that will penetrate almost every aspect of society and people’s lives, building infrastructure is the top priority.

1 Royal Government of Cambodia, “*Pentagonal Strategy-Phase I*”, August 24, 2023, Phnom Penh.

2 Supreme National Economic Council, “*Cambodia Digital Economy and Society Policy Framework 2021-2035*”, May 10, 2021, Phnom Penh.

Additionally, the Cambodia Digital Government Policy 2022-2035 aims to build a smart government based on the use of digital infrastructure and technology. The purpose is to create an ecosystem for governance system modernization and to reform transparently and credibly in order to develop an inclusive digital economy and society.³ Notably, the infrastructure is always the main faculty, driving to achieve these visions and objectives. In the policy, the first strategic goal is to promote the development of digital government infrastructure including the infrastructures for digital connectivity, payment systems, digital security, and postal service. In terms of digital connectivity infrastructures, the policy advocates for the expansion of mobile and broadband infrastructure and the development of telecommunication networks for 5G services.

Overall, the issue with the ICT infrastructures is neither new nor overlooked, as the government has paid close attention to it. Apparently, the RGC has encouraged and advocated the development by issuing the important policies as a roadmap to guide and tackle the issues. However, divergent approaches can be employed to solve these infrastructure issues.

Universal Service Obligation Fund and Privatization

In 2020, a sub-decree on the mechanism for implementation of the Universal Service Obligation Program was issued to encourage the development of the telecommunication sector with the Minister of Post and Telecommunications as the President of the Management Committee of Universal Service Obligation Fund (USOF). The objectives of this fund are reducing the digital gap, developing society and economy, and constructing and expanding telecommunications networks infrastructure as well as the infrastructure that supports internet broadband. The capital sources of the fund primarily are derived from the annual contribution equal to the rate of 2% of the telecommunication operators' gross, capital granted to the fund by the state or ministries, and other legitimate sources including gifts and financial assistance.⁴

In Article 14 of the sub-decree, the telecommunications operators who have contributed to the fund are entitled to request up to 50% of the fund they have paid in order to pay for the construction of shared infrastructure and telecommunications networks for the purpose of strengthening and expanding telecommunications services and ICT services. Such shared telecommunications infrastructure and network become the ownership of the requesting telecommunications operators. The incumbent operators shall allow other operators to use the shared telecommunications infrastructure and network because they are the fruits from the fund. The management and fee for the use of these shared telecommunications infrastructures and networks shall be determined by the management committee.

The USOF merely serves as an additional and strategic fund of the government that is used to encourage private companies to invest in ICT infrastructure projects. Certainly, there are not only benefits but also challenges because investment in ICT projects in terms of private procurement means that the commitments to projects in ICT backbone infrastructure belong to the private companies. In the post-construction of ICT infrastructures, the property is privatized, and the operational function of the ICT system falls under the responsibility of the corporations that built the infrastructures. Since the investment commitments are of private companies, the government's involvement is minimal. These interventions happen only in a way that ensures the smooth construction of the infrastructures either in new facilities or in the expansion and modernization of existing facilities. On the bright side of the privatization approach, because the private companies bear significant risks, they often operate more efficiently than government entities do, potentially leading to quicker and

3 Ministry of Post and Telecommunications, "Cambodia Digital Government Policy 2022-2035", January 28, 2022, Phnom Penh.

4 Royal Government of Cambodia, "Sub-Decree on Mechanism for Implementation of Universal Service Obligation Program", December 01, 2020, Phnom Penh.

more cost-effective project completion. In addition, the companies are typically more innovative and usually have more expertise in managing and operating ICT infrastructure. However, the drawback of the privatization is that the primary goal of private companies is profit, so it can conflict with public interests, neglecting underserved or less profitable areas thus exacerbating the digital divide. Moreover, there is a risk of monopoly because large companies control the market and outcompete the infant companies. As a result, these big companies try to reduce competition, impose higher prices, and lower service quality.

Public Procurement and Fiscal Framework

Public procurement refers to the expenditure of governments and state-owned enterprises on goods, services, works, and public projects. As public procurement accounts for a substantial portion of the taxpayers' money, the government is expected to carry out the service delivery efficiently to safeguard the public interest. Simply put, the government can use the public budget for development. By considering the construction of the ICT infrastructures as one of the public investment programs, the Ministry of Post and Telecommunications (MPTC) can request from the Ministry of Economy and Finance (MEF) the budget to fund these projects and the MPTC will monitor the whole process of building and operation of the infrastructures. This means the government can have full control to ensure that even underserved and remote areas get access to essential ICT services. Public procurement also ensures that the public interest is prioritized rather than purely commercial considerations. However, such public procurement projects can be expensive, and the bureaucratic procedures could result in delays and inefficiencies. Moreover, the public sector projects might lack the operational efficiency and expertise that private companies have. This can potentially lead to less effective project management and execution.

Nonetheless, public procurement in ICT infrastructure projects can exert significant pressure on the national budget for two reasons. Firstly, funding large-scale ICT infrastructure projects through public procurement can exacerbate the budget deficit, as substantial capital outlays are required, potentially outstripping the government's revenue generation. According to the Medium-Term Fiscal Framework (MTFF), the annual budget deficit is around 2.29% of the GDP every year.⁵ From 2025 to 2027, the government is determined not to allow the annual budget deficit exceeding 5% of the GDP. This means the space for public expenditure on public ICT infrastructure projects is narrow and tight as the government cannot fill the financing gap.

Secondly, such projects funded through public procurement can add to the public debt, thereby increasing the national debt burden. Looking at the public debt, Cambodia's public financial anchor ratios in the medium term between 2025 and 2027 are projected to be below the set benchmark. However, the country's current value of external public debt is projected to grow at an average rate of 18.6% of GDP, which is still lower than the base ratio (40% of GDP). Hence, the RGC may have the option of borrowing what? from foreigners to fill the financing gap to achieve the infrastructure projects. However, according to the World Economic Forum, Cambodia is projected to be promoted from the Least Developed Countries (LDCs) in 2027, leading to the reduction of grants, financing concessions, and increasing the cost of borrowing from development partners.⁶ This means the government is going to encounter certain difficulties in borrowing money. Therefore, these financial pressures highlight the challenges of using public procurement as a sole strategy for developing ICT infrastructure and underscore the need for exploring an alternative approach.

5 Royal Government of Cambodia, "Medium-Term Fiscal Framework 2025-2027", April 29, 2024, Phnom Penh.

6 World Economic Forum, "Lessons from Cambodia: how it is outgrowing its least developed status through openness", February 08, 2024, <https://www.weforum.org/agenda/2024/02/cambodia-ldc-graduation-economic-progress/>.

Public-Private Partnerships (PPPs) as the Potential Approach

The PPPs in ICT infrastructures can offer a balanced approach, leveraging the strengths of both the public and private sectors. Through the PPPs, risks related to large-scale ICT projects are shared between the public and private sectors, reducing the burden on any single entity. Furthermore, combining public oversight with private sector management can improve service delivery, ensuring that projects meet public needs and high operational standards. Nonetheless, some disadvantages could happen. Firstly, establishing the PPPs involves complex negotiations and legal agreements, which can be time-consuming and costly. Secondly, ensuring transparency and accountability in the PPPs arrangements can be challenging, leading to issues of corruption or mismanagement. To mitigate these shortcomings, having clear contracts, a robust regulatory framework, stakeholder engagement, and balanced risk sharing are important for the PPPs in ICT infrastructure. By thoughtfully managing the PPPs, the government can make the most of private sector involvement while safeguarding public interests and ensuring the successful development of ICT infrastructure.

For instance, the BharatNet project in India, which is aimed at providing broadband connectivity to rural areas of India, has adopted a PPPs model to enhance its implementation.⁷ This approach involves collaboration between the government and private sector to leverage expertise, efficiency, and resources for expanding internet access. The initiative targets the delivery of broadband connectivity to over 250,000 villages and facilitates improved digital services in rural regions. In this project, the USOF of the Indian government is used to fund, and while the government provides viability gap funding (VGF) to ensure the project's financial viability in rural areas where profitability might be low, the majority of the investment is expected to come from private partners. In this regard, the PPP model in BharatNet project has achieved notable successes. Firstly, it has attracted private investments and technological expertise crucial to accelerating the implementation process. Moreover, the project has laid significant optical fiber infrastructure, covering many villages across the country, providing high-speed internet to remote areas, and bridging the digital divide.

For another instance, Indonesia's Palapa Ring Project is a landmark PPPs initiative aimed at significantly enhancing the nation's telecommunication infrastructure. Covering over 13,000 islands, Indonesia faces unique connectivity challenges, which the Palapa Ring Project addresses by implementing a comprehensive submarine and terrestrial fiber-optic network.⁸ The financing of the project involves a blend of public and private funds. One of the financing mechanisms is using the USOF, which was established in 2000 by the Government Regulation No. 52. This regulation states the requirement that telecommunications operators have to contribute to the fund. The USOF can serve as a project fund used in the Availability Payment (AP) scheme to fill the financing gap by making payments to private partners based on the performance of the infrastructure. As a result, the Palapa Ring Project has vastly improved mobile connectivity, especially in remote regions. These areas have seen substantial gains in 4G availability and download speeds and fostering economic growth. The project supports Indonesia's broader goals of digital economy expansion and sustainable development.

7 Government of India, Ministry of Communications, Department of Telecommunications, Universal Service Obligation Fund, "BharatNet Project", n.d., <https://usof.gov.in/en/bharatnet-project>.

8 Hardik Khatri, "Palapa Ring has successfully improved mobile connectivity in remote Indonesian islands", *Opensignal*, November 26, 2020, <https://www.opensignal.com/2020/11/26/palapa-ring-has-successfully-improved-mobile-connectivity-in-remote-indonesian-islands>.

Policy Recommendations

Given the paramount importance of ICT infrastructure to Cambodia's social and economic development, it is imperative to adopt a strategic approach to overcome the challenges associated with building and maintaining robust ICT systems. The analysis in this policy brief highlights the strengths and weaknesses of different approaches including public procurement, privatization, and PPPs. While each approach offers unique benefits, the PPPs have emerged as a particularly promising strategy due to their ability to leverage private sector expertise and resources while ensuring public oversight and accountability.

The policy recommendations below seek to create a conducive environment for private sector participation, optimize the use of existing resources, and build local capacity to manage and implement ICT projects efficiently.

Scaling Up Public-Private Partnerships (PPPs) in the ICT Sector

The PPPs will not scale up in the ICT sector in Cambodia as long as they are optional and additive. The PPPs should be incentivized when initiating huge ICT infrastructure projects, not a mere encouragement. The law on the PPPs is new as it was promulgated in 2021, so the nuance of knowledge still exists among ICT experts both in the public and private sectors. To achieve the scale-up, the government should establish the PPPs as the standard approach and expectation for the large ICT infrastructure projects. Furthermore, to address the knowledge gap among ICT experts in both public and private sectors, the government should provide training, resources, and support to build a robust understanding of PPP frameworks and their implementation.

Optimizing the Use of the Universal Service Obligation Fund (USOF)

A notable area for improvement is the utilization of the current Universal Service Obligation Fund (USOF). At present, the USOF in the sub-decree primarily serves as a strategic fund to encourage private companies to invest in ICT infrastructure projects and use the privatization model. Therefore, revising Article 14 to open the gateway for the fund to use in the PPP projects is highly crucial to optimizing the use of the fund in high-impact projects. Similar to successful models in other countries like Indonesia, the USOF should be used as a major source of funding for critical ICT infrastructure projects, especially in the prioritized areas that lack adequate private investment such as expanding infrastructures in rural and underserved areas.

Leveraging Public Procurement Strategically

While public procurement should not be the main funding source for ICT infrastructure, it can play an essential role in supporting projects through viability gap funding (VGF) and Government Support Measures (GSM). These mechanisms can help fill the financing gaps and share risks with private partners, making projects more attractive and feasible. Public procurement in terms of the VGF funding mechanism can make projects financially viable in areas where profitability is low. With VGF, it can also attract private investment. Additionally, public procurement in terms of GSM including providing guarantees, subsidies, or other financial support can reduce the investment risk and encourage the private sector to participate in ICT projects.

Conclusion

The PPPs are not new, but they are becoming increasingly important to accomplishing what both government and private companies struggle to do alone such as rolling out high-quality development of digital and ICT infrastructures. Ideally, the PPP provides a win-win opportunity for the private sector to work with the government. In the PPPs mechanism, the companies assume management responsibility, technical expertise, efficiencies, and capital for the projects. The government, on the other hand, provides a stable regulatory environment, oversight, and support for the projects to ensure that they align with public interests and strategic development goals. Both sides need each other because the projects can create a new source of business for companies and some aging public assets could not get off the ground without private support. This collaborative approach can lead to innovative solutions, improved service delivery, and enhanced economic and social outcomes.



Photo: "Embracing Digital-Led Financial Ecosystems for A Better Lifestyle," Cambodia Investment Review

CHAPTER 7

Promoting Financial Inclusion: The Role of Digital Literacy in Closing the Gap in Cambodia

Im Pohnavoatey

Executive Summary

- Cambodia's financial inclusion vision aims to increase the use of formal financial services among adults from 59% in 2021 to 70% in 2025. To achieve this goal, digital literacy plays a crucial role in bridging the financial gap to access and utilize financial services efficiently.
- Financial inclusion has made significant progress in Cambodia amidst the growth in non-cash transactions and the rise of mobile and internet technology. However, a lack of financial literacy and digital literacy, as well as limited access to digital financial services in rural areas hinder full participation.
- Cambodia has a relatively low level of digital literacy, with 30% of the population having basic digital skills. This gap is particularly pronounced in rural areas, where access to devices and internet connectivity is limited.
- Digital literacy is essential for accessing digital financial services. Without it, individuals are more vulnerable to financial scams and fraud.

Introduction

To realize Cambodia's Vision 2050 of becoming a high-income country, financial inclusion plays a critical role.¹ Financial inclusion refers to initiatives to expand access to financial services in order to help low-income and excluded populations that involve offering accessible and reasonably priced financial services and goods, like insurance, saving accounts, and loans, to promote economic growth and fight against poverty.² This indicates that financial inclusion helps facilitate fair access to financial services, and advances the UN Sustainable Development Goals (SDGs) and assists Small and Medium-Sized Enterprises (SMEs) and Micro, Small and Medium Enterprises (MSMEs) in generating employment and entrepreneurship.³ Additionally, it increases financial stability through risk diversification, mobilizes domestic resources, and lessens dependency on external funding.⁴ Ultimately, digital financial services, such as e-wallet and mobile banking, further promote inclusion and help rural and remote communities.

The Royal Government of Cambodia (RGC) has adopted “Cambodia Financial Technology Development Policy 2023-2028” in line with “Cambodia Digital Economy and Society Policy Framework 2021-2035” and other regional and international FinTech development trends. The primary goals of this strategy are to foster financial innovation, maintain the reliability of the financial sector, and enhance financial inclusion. Hence, aiming to maximize the benefits of a deeper transformation to achieve the Cambodia Vision 2050.⁵

As Cambodia moves to realize these development goals, digital transformation is crucial in narrowing the gap between the country's current state and its future aspirations. The objective set forth by the National Bank of Cambodia (NBC) is to increase the percentage of adult customers

1 Digital Economy and Business Committee, *Cambodia Financial Technology Development Policy 2023-2028*, July 2023, 1696479292-Cambodia_Financial_Technology_Development_Policy_2023_2028_English.pdf.

2 “Ensuring Responsible Financial Inclusion in Cambodia,” *European Microfinance Week*, 15 November, 2023, EMW2023-ensuring-responsible-financial-inclusion-Cambodia.pdf.

3 Asian Development Bank, *Accelerating Financial Inclusion in South-East with Digital Finance*, 2017, financial-inclusion-se-asia.pdf.

4 Sujeev Shakya, et al., *Cambodia Financial Inclusion Country Report 2017*, 28 September, 2017, *Cambodia_Synthesis-Note_28-September-2017.pdf.

5 Ibid., 1.

using formal financial services from 59% in 2021 to 70% in 2025.⁶ Thus, digital technologies have the potential to significantly increase financial inclusion, but there are still obstacles to overcome. Digital literacy remains a barrier for many individuals, particularly among senior generations and those in rural areas. Which hinders the full capacity of the benefits that digital inclusion can bring and potential of digital inclusivity. To achieve the goal of closing the financial inclusion gap, digital literacy enhancement is essential. As it enables individuals to access and utilize financial services efficiently, thereby enhancing financial inclusion.

The Current State of Financial Inclusion in Cambodia

In recent years, Cambodia's banking industry has grown significantly due to government financial inclusion initiatives, private sector expansion, and rising demand for services. This growth has resulted in a more sophisticated and diverse financial sector, with over 50 commercial banks and more than 80 Microfinance Institutions (MFIs) offering a number of financial services.⁷ In 2023, the number of transactions rose by 28.7% to \$601.3 million, while the value of those transactions increased by 18% to \$75.8 billion, indicating a growing adoption of digital financial services in Cambodia.⁸

On top of that, the NBC also introduced the QR code-based cross-border payment services between Cambodia and Thailand, Cambodia and Laos, and Cambodia and Vietnam. These payment services streamline the whole process and eliminate the need for real money.⁹ This modernization has contributed to the growth of the financial sector and improved financial inclusion rates in the country. As digital financial services become more and more important, financial transactions, including payments and money transfers, have become easier for providers such as Wing, TrueMoney, and major banks' mobile banking services, with about 13.6 million users of mobile payment services.¹⁰

The State of Digital Literacy in Cambodia

Cambodia currently has a relatively low level of digital literacy, only 30% of the population possesses even the most basic knowledge of media and digital literacy.¹¹ It is concerning that the definition by the United Nations Educational Scientific and Cultural Organization (UNESCO) describes "digital literacy" as the basic skills needed to use digital media and process information, including skills related to computer, communication, and technology literacy.¹² The lack of these skills limits access to digital financial services, challenges economic growth, and widening Cambodia social and economic inequality.

Comparatively, Cambodia has the lowest degree of digital literacy among ASEAN countries.¹³ Only 18% of Cambodians are financially literate.¹⁴ A study by the ASEAN Foundation and Google found that while Cambodian entrepreneurs and women are increasingly using digital tools, there is still a

6 National Bank of Cambodia, *FinTech Development Roadmap (2020-2025)*, Jan 2021, [FinTech_Development_Roadmap_06012021_Final_06Jan2021_English_translation.pdf](#).

7 The Association of Banks in Cambodia, *Banking Environment*, <https://www.abc.org.kh/banking-environment/>

8 National Bank of Cambodia, *Annual Report 2023*, 10 May, 2024, [NBC Annual Report 2023 Eng.pdf](#).

9 "Banking and financial services," *Open Development Cambodia*, December 8, 2020, <https://opendevdevelopmentcambodia.net/topics/banking-and-financial-services/>.

10 Gupta Niraj, "Digital Transformation in Cambodia's Financial Sector, Paving the Way for Inclusive Growth," *Khmer Times*, 11 August, 2023, <https://www.khmertimeskh.com/501340902/digital-transformation-in-cambodias-financial-sector-paving-the-way-for-inclusive-growth/>.

11 "Digital Literacy Empowers Thousands in Cambodia Through ASEAN Foundation and Google.org Initiative," *Cambodia Investment Review*, December, 2023, <https://cambodiainvestmentreview.com/2023/11/15/digital-literacy-empowers-thousands-in-cambodia-through-asean-foundation-and-google-org-initiative/>.

12 UNESCO, *Digital Literacy in Education*, May, 2011, 214485eng.pdf.

13 Kusumastuti Ayu and Nuryani Astrida, "Digital Literacy Levels in ASEAN (Comparative study on ASEAN Countries)," *University Brawijaya, Indonesia*, October, 2019, [Digital_Literacy_Levels_in_ASEAN_Compara.pdf](#)

14 *Ibid.*, 8.

need for more comprehensive digital literacy training to empower them to fully utilize this tool.¹⁵ Most importantly, indigenous people are particularly affected by this gap since they often do not have access to reliable data, information, or digital skills, which makes the gap even more visible.¹⁶

Besides the low digital literacy, its impact on access to financial services is significant. Digital financial services like mobile banking, online payments, and e-commerce are difficult for individuals and small businesses to fully operate without the right digital skills.¹⁷ This restricts their capacity to engage in the formal economy, receive financial services, and correctly manage their finances. Further, people with limited digital literacy are more vulnerable to financial scams and frauds since they are unlikely to be able to tell the difference and are aware of any attempts or suspicious transactions.

The Role of Digital Literacy in Narrowing the Financial Gap

In the digital world, digital literacy is crucial for effectively accessing information and engaging in the digital economy. First, understanding platforms like social networks and online forums is crucial for accessing financial information and resources.¹⁸ Second, basic computer skills like email, internet browsing, and search engines are essential for accessing online services like online banking and mobile banking.¹⁹ This is because these skills enable effective financial management, including tracking expenses, budgeting, and online transactions. Finally, digital problem-solving is also essential for overcoming technical challenges, such as troubleshooting online transactions, understanding error messages, and finding solutions.

Efforts have been made to enhance digital literacy skills in Cambodia. For instance, the NBC in collaboration with Visa and the Ministry of Women's Affairs (MoWA) have introduced a financial and digital literacy program targeted at female entrepreneurship launched in September 2020.²⁰ The "Financial and Digital Literacy for Women Entrepreneurship Development" program included themes such as "Financial and Digital Literacy for Entrepreneurship Development" and "Access to Safe Financial Services."²¹ Currently, the NBC is on the path to expanding similar financial and digital literacy programs to other target customers. These initiatives are part of the Central Bank's plan to narrow the digital literacy gap in Cambodia, especially among the underprivileged communities. On top of that, the United Nations Educational Scientific and Cultural Organization (UNESCO) has been relentlessly promoting digital literacy in Cambodia through various kinds of programs. In collaboration with the Ministry of Post and Telecommunications, UNESCO has developed a National Media, Information, and Digital Literacy (MIDL) Competency Framework aimed at empowering Cambodian citizens to navigate the digital world efficiently.²²

15 Post Stew, "Digital literacy, Cambodian entrepreneurs and women empowerment," *brains communication*, 30 May, 2023, <https://brains-comm.com/2023/05/15/digital-literacy-cambodian-entrepreneurs-and-women-empowerment/>.

16 "Digital Literacy Empowers Thousands in Cambodia Through ASEAN Foundation and Google.org Initiative," *Cambodia Investment Review*.

17 Morgan Peter J. and Trinh Long Q., "Determinants and Impacts of Financial Literacy in Cambodia and Vietnam," *ASEAN Development Bank Institute*, June, 2017, adbi-wp754.pdf.

18 Spires Hiller A., et al., "Digital Literacy for the 21st Century," *Academia*, 2018, <https://www.academia.edu/download/89045835/viewtitlesample.pdf>.

19 Ibid.

20 National Bank of Cambodia, *Training on the Trainers (TOT) Program on "Financial Literacy of Women Entrepreneurship Development" in Preah Vihear province*, 21 September, 2020, https://www.nbc.gov.kh/english/news_and_events/news_info.php?id=567.

21 Ibid.

22 Chea Sokny, "UNESCO enhancing digital literacy for ethnic minorities," *The Phnom Penh Post*, 10 September, 2023, <https://phnompenhpost.com/national/unesco-enhancing-digital-literacy-ethnic-minorities>

Barriers to Achieving Digital Literacy

Despite the efforts in holding campaigns and programs, many Cambodians still struggle and lack digital skills in operating devices, particularly in digital financial services. One of the primary barriers to digital literacy in Cambodia is the lack of access to devices. While digital infrastructure is more readily available in urban areas, many Cambodians, particularly those living in rural areas, do not have access to computers or smartphones, which hinders their ability to develop digital skills.²³ This means that in rural Cambodia, where access to devices is limited, residents are unable to fully participate in the digital economy, especially with the rise of digital financial services. The digital divide, which refers to the gap between those with access to digital technologies and those without, may exacerbate in urban and rural areas if people lack device access.²⁴ According to the World Bank's Global Findex Database, 59% of adults in Cambodia had accounts at a financial institution in 2021; however, in rural areas, only 48% had accounts, compared to 77% in urban areas.²⁵ It can be implied that the limitations of experience with digital technologies and the lack of trust in online transactions or financial institutions can be a significant barrier to the adoption of digital financial services.

In addition, limited internet connectivity in rural areas worsens the problem by preventing individuals from practicing and improving their digital literacy skills. According to the Asia Centre, Cambodia's internet penetration index was 56.7% at the beginning of 2024, which is lower than that of several other nations.²⁶ In April, Cambodia ranked 103rd in mobile internet connection speed and 108th in fixed broadband speed globally.²⁷ While our neighboring countries, like Thailand, the AIS service had the fastest 5G connection speed, with an average download speed of 133.5 Mbps.²⁸ In contrast, Cambodia's Cellcard service had a download speed of only 33.74 Mbps.²⁹ The lack of complete internet connectivity may make it difficult for the people of Cambodia to access digital services, which will make it more difficult for them to learn the skills they need in the digital age. This indicates that there is room for improvement in Cambodia's digital infrastructure, and efforts to increase access and speed could contribute to the overall digital literacy of the population.

Furthermore, some Cambodians, particularly those from older generations, may experience difficulty adopting new technologies due to a preference for traditional methods and a lack of familiarity with and exposure to digital systems and tools.³⁰ Ultimately, the absence of stable internet access and digital programming in Cambodia's rural provinces make it more difficult for governments, Non-governmental Organizations (NGOs), and partnerships to function efficiently and deliver services.

23 "Girls' Digital Literacy in the East Asia and Pacific Region: Spotlight on Cambodia," *Khmer Times*, 15 July, 2023, <https://www.khmertimeskh.com/501324479/girls-digital-literacy-in-the-east-asia-and-pacific-region-spotlight-on-cambodia/>.

24 Chetty Krishh, et al., "Bridging the digital divide: measuring digital literacy," *Economics*, 25 April, 2018, 10.5018_economics-ejournal.ja.2018-23.pdf.

25 Demirgüç-Kunt Asli, et al., *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*, World Bank Group, 2022, 9781464818974.pdf.

26 "Digital Technology in Cambodia: Challenges and Opportunities," *Asia Centre*, 17 June, 2024, <https://asiacentre.org/event/digital-technology-in-cambodia-challenges-and-opportunities/>

27 Kemp Simon, "Digital 2023: Cambodia," *Datareportal*, 13 February, 2023, <https://datareportal.com/reports/digital-2023-cambodia>.

28 "Average download speed of 5G network providers in Thailand as of March 2024," *Statista*, 2024, <https://www.statista.com/statistics/1242348/thailand-5g-average-download-speed-of-network-providers/#:~:text=5G%20average%20download%20speed%20of%20network%20providers%20Thailand%202024&text=As%20of%20March%202024%2C%20AIS,download%20speed%20was%2049.3%20Mbps>.

29 "Cambodia Median Country Speeds," *Speedtest Global Index*, April, 2024, <https://www.speedtest.net/global-index/cambodia#mobile>

30 East Asia Forum, "Barriers remain to Cambodia's rush to a digital economy," *ASEAN News Today*, 17 February, 2019, <https://aseannewstoday.com/2019/barriers-remain-to-cambodias-rush-to-a-digital-economy/>.

For example, according to the Civil Society Organization (CSO), digital literacy and security suffer greatly from this lack of digital programming and infrastructure, especially in rural areas with poor connectivity.³¹

Policy Recommendations

To unlock the transformative potential of digital finance and bridge the financial inclusion gap, these approaches aim to empower Cambodians with the necessary skills to participate fully in the digital economy.

Collaboration with Private Corporation

The government should collaborate and invest with private telecommunication companies in expanding broadband infrastructure across rural areas due to the lack and slowness of internet connectivity. Furthermore, developing affordable internet packages specifically targeted at rural populations is essential, since it helps rural residents choose a plan that aligns with their needs and budget.

Educational Campaigns for Digital and Financial Literacy

Multi-stakeholders should continue their efforts to organize and host educational campaigns on digital and financial literacy in the most vulnerable communities. Regular monitoring and evaluation should be implemented as a follow-up mechanism to assess the effectiveness of these campaigns. By revisiting campaign locations and engaging with participants, the host can identify areas where further education is needed, identify areas for improvement, and adjust the campaigns accordingly to ensure maximum impact.

Integration of Digital and Financial Literacy into National Curriculum

The government should further collaborate with financial institutions and telecommunication companies to integrate financial and digital literacy modules into the national curriculum or through simulations and workshops across different education levels. Firstly, elementary education can focus on basic budgeting, saving, and computer skills, while secondary education expands on financial concepts and introduces online security. Lastly, high school offers more in-depth modules on personal finance, understanding credit, and digital citizenship. By introducing these concepts early on, students can develop an understanding of financial literacy and responsible digital usage.

Conclusion

Enhancing digital literacy is crucial for bridging the financial inclusion gap in Cambodia. To achieve the 2050 vision of increased financial services usage, it is important for the government to address the barriers posed by low digital literacy, particularly in rural areas. This requires further efforts from the existing policies and new practical strategies, such as expanding internet access, integrating digital literacy into educational curricula, and a collaborative approach with the private sector and NGOs.

31 Joul Maura, et al., "Improving Digital Literacy and Security Training in Cambodia," *Open Development Bank*, 5 August, 2022, [improving-digital-literacy-and-security-training-in-cambodia.pdf](#).



Photo: "Royal Group Phnom Penh SEZ takes action with green bond issuance," gggi.org

CHAPTER 8

The Role of Digital Finance in Climate Resilience and Sustainable Development in Cambodia

Chiev Raksmeay

Executive Summary

- In 2024, Cambodia faced severe temperature rises, demonstrating the urgency for sustainable development to mitigate the climate impact on the economy and public health.
- The Royal Government of Cambodia has prioritized green growth through the National Council on Sustainable Development (NCSD) and introduced Green Bonds on the Cambodia Stock Exchange (CSX) in 2022, aligning with the global Environment, Social, and Governance (ESG) investment trends.
- Cambodia's banking sector lacks robust environmental and social safeguards compared to international standards, posing risks to sustainable investments. Misleading claims about environmental benefits in financial products undermine investor trust and credibility in green finance initiatives.
- This article recommends (1) implementing rigorous reporting and verification processes to distinguish genuine green investments from greenwashed products; (2) introducing tax incentives for renewable energy adoption to stimulate investment in sustainable technologies and reduce carbon emissions; and (3) expanding education in green finance and climate literacy to equip financial professionals with skills for effective ESG investment management, especially in the university curriculums to sharpen future-ready green thinking leaders.

Introduction

The abnormal temperature rise in Southeast Asia in 2024 captured a grave concern among the public across the region.¹ The heat waves prompted many people to stay indoors or in a mild temperature space raising the drawbacks in economic and health security by tightening a constraint on educational and employment movements. The impact is even more critical for the people in the agriculture sector; not to mention the power outage in several neighborhoods.

To tackle the climate issue, the Royal Government of Cambodia (RGC) has prioritized green growth and established the National Council for Sustainable Development (NCSD) as a central agency to mitigate this issue as they are responsible for promoting sustainable development initiatives that align with the country's environmental and economic goals which include coordinating and integrating policies across various sectors to ensure environmental protection, resource management, and climate resilience. It plays a key role in planning, monitoring, and reporting on initiatives related to climate change adaptation, biodiversity conservation, and sustainable resource use. Furthermore, in 2022, the National Bank of Cambodia (NBC) established a new initiative known as "Green Bond" listed in the Cambodia Stock Exchange (CSX), which is an organisation that operates under the supervision of the Securities and Exchange Commission of Cambodia (SECC).² CSX aims to enhance the country's economic development by providing a platform for companies to raise capital and for investors to trade shares as it offers various financial instruments. The exchange promotes transparency and investor protection, adhering to international standards and regulations which in this case, the investment in climate action.

1 Chen, Heather. "Searing Heat Is Back Across Southeast Asia and It's Not Going Away Anytime Soon." CNN, April 10, 2024. <https://edition.cnn.com/2024/04/10/asia/southeast-asia-extreme-heat-climate-intl-hnk/index.html>.

2 Chea, Vanyuth. "NBC, ERIA Join Hands to Develop Strategy for Green Digital Finance." *Khmer Times*, April 24, 2024. https://www.khmertimeskh.com/501479400/nbc-eria-join-hands-to-develop-strategy-for-green-digital-finance/#google_vignette.

According to the United Nations, Green Digital Financing is the dynamics of digital technologies to manage and allocate financial funding resources and decisions that seek to support sustainable development projects of environmental, social, and governance (ESG) by directing investments towards projects with a positive impact and extending financial services to underserved populations in the area of environmental related purpose or to seek for environmental benefit with a decent rate of returns.³ Recognizing the crucial role of private sector engagement, UNDP and the Ministry of Economy and Finance introduced Cambodia's first-ever SDG Investor Map in 2022. This tool serves as a market intelligence resource, outlining domestic investment opportunities that align with the SDGs. It aims to guide private investors toward investments that are both profit-driven and social benefits. The Map highlights 15 Investment Opportunity Areas across six main sectors: education, healthcare, financial services, agriculture and related industries, infrastructure, and renewable energy.

Overview of the Growth of Green Finance in Cambodia

When making investment decisions, it is imperative to take into account the significance of social, environmental, and governance factors according to ESG's strong emphasis on the rights of others. According to Oxfam Cambodia, a posed concern in the green finance of Cambodia is that there are no environmental and social safeguards in Cambodia's banking and financial sector yet if compared to the supranational practices such as the Asian Development Bank (ADB), the World Bank Group (WBG), and the International Finance Corporation (IFC) dating back to 2022.⁴ Therefore, striving to comply with the larger institutions' practices and standards may provide a more confident investor's decision. Although the banking and financial institutions are the key players in Cambodia to ensure a good investment climate for large development or investment projects. The provision of loans or credits by banking and financial institutions has not yet implemented conditional loans on environmental and social impact assessments for potentially risky projects.⁵

Green bonds in Cambodia primarily focus on sectors such as renewable energy, energy efficiency, water management, waste management, and the circular economy. Among these, most investors and underwriters consider renewable energy to have the highest growth potential.⁶ With concern over the potential environmental impact of the private sector in Cambodia, the early stage of introducing bonds indicates a starting point of environmental awareness within its financial sector. However, if we were to compare Cambodia's Stock Exchange (CSX) with its international counterparts; these considerations are crucial as Cambodia navigates its bond market development, ensuring alignment with global standards while addressing local challenges. In recent years, a private company like Golden Tree Co. Ltd was reported to be the first green bond issuance in Cambodia with assistance from the Asian Development Bank (ADB) to be consistent with the green bond standard of the Association of Southeast Asian Nations (ASEAN) in contributing to protecting the environment and promoting sustainable development in Cambodia as the real estate industry.⁷

3 "SDG (Climate Change Adaptation) Enabling Investments in Cambodia: A Sectoral Perspective." n.d. UNDP. <https://www.undp.org/cambodia/speeches/sdg-climate-change-adaptation-enabling-investments-cambodia-sectoral-perspective>.

4 "Green Financing Policy Implementation in Cambodia." Oxfam Cambodia, February 2022. https://oi-files-cng-v2-prod.s3.eu-west-2.amazonaws.com/cambodia.oxfam.org/s3fs-public/file_attachments/Research_Green-Financing-Policy-Implementation-in-Cambodia_1.pdf.

5 Goyal, Khushboo. 2024. "Green Financing Policies in Cambodia." REGlobal. January 29, 2024. <https://reglobal.org/green-financing-in-cambodia/>

6 "GREEN BOND MARKET SURVEY FOR CAMBODIA." *ASIAN DEVELOPMENT BANK*. ASIAN DEVELOPMENT BANK, September 2022. <https://www.adb.org/sites/default/files/publication/827631/green-bond-market-survey-cambodia.pdf>.

7 Sothear, Kang. 2023. "Golden Tree announces first green bond official listing on CSX." *Khmer Times*, January 20, 2023. <https://www.khmertimeskh.com/501222765/golden-tree-announces-first-green-bond-official-listing-on-csx/>.



There are also challenges regarding issuing green projects as Cambodia depends highly on imported fossil fuels and oils rather than optimizing renewable energy usage. In contrast, Carbon emissions can contribute to a reduction in economic activities and the data from the COVID-19 pandemic serves as a pertinent example to illustrate this perspective. It creates a gray area in this policy-making process because a good green policy also requires good economic performance. On top of that, the concept of green finance does not spark an interest in the citizen's participation although it is being talked about around the region, especially within the recent ASEAN initiatives. However, we can see a good opportunity to fill the gap by educating and raising awareness in the youth group range of high schoolers and university students with more participative discussion in webinars or workshops as they are the people who will be impacted most as we can see the school being shut down in many ASEAN regions like the Philippines.⁸

The Greenwashing Problem in Green Finance

Investment and interest protection should also be considered when it comes to green finance. There is a commitment needed for financial facilitation in green finance and projects with a proper measure of what is considered the benchmark for every implementation of an affiliate. Greenwashing can also be seen in green finance products with its misleading advocacy about environmental or social impacts that have been promoted by a company to enjoy the benefits of being known as the “green” company if they fail to achieve their promises in real-time deliveries. Moreover, this can include projects with minimal gestures towards sustainability that do not significantly contribute to mitigating environmental challenges. This can result in an agency relationship problem between the management cores of the financial product company and all stakeholders as they are not honest with the report of the company. Moreover, they can lose the opportunity to seize an actual green implementation and a great amount of funding due to the loss of trust from investors and the reputation of the company while it can also cause a delay in the NET-ZERO initiative because of the inefficiency of the values that they have proposed if the company are not decarbonizing supply chains, unsustainable materials, and not achieving science-based targets. The false impression of environmental progress misguides consumers, investors, and policymakers, reducing the

8 “School Closures and Health Warnings: South and Southeast Asia Swelter Under Record-breaking Heat.” *Euronews*, May 3, 2024. <https://www.euronews.com/green/2024/05/03/school-closures-and-health-warnings-south-and-southeast-asia-swelter-under-record-breaking>.

urgency and pressure on businesses to implement genuine carbon reduction strategies. Moreover, greenwashing undermines public trust in climate commitments causing people to become more skeptical of corporate environmental claims, making it harder for truly sustainable organizations to gain support and funding. Additionally, regulatory bodies worldwide are increasingly scrutinizing green claims and implementing stricter standards to combat greenwashing. Companies found guilty of greenwashing may face legal consequences and reputational damage that can impact investor confidence and market competitiveness.

Policy Recommendations

Transparency

As stated in the Joint media release between NBC and the IFC organisation Cambodia is concerned with adequacy in executing the green financing initiatives and green policy issuance.⁹ Ensuring stakeholder transparency is key to addressing challenges related to green financing and technology risks, as it provides a clear view of how company assets are managed. Since green projects are relatively new in Cambodia, there is an understanding that trial and error are part of the process, with some failures expected during the early research and development stages. However, transparency and cooperation help build trust, make investments more credible, and prevent greenwashing. The Cambodian government and universities are actively supporting innovative green approaches by funding NGOs, organizing public campaigns, and hosting competition challenges, similar to global practices. Moreover, research and training on this climate action continues to weigh the impacts and innovation. These efforts allow the public to learn from past projects and benefit from unique ideas that gain media exposure. Furthermore, transparency empowers investors to make informed decisions about funding impactful projects, such as green bonds with reasonable returns. Additionally, professionals can provide feedback and recommendations, improving green finance strategies and reducing the need for excessive guidance on methodologies.

Tax incentivization between interested parties

One effective coordination approach for the climate crisis is for governments to offer tax exemptions to households and businesses that adopt renewable energy technologies, such as solar panels. These financial incentives lower barriers to entry, encouraging widespread adoption and investment in sustainable energy. This not only promotes economic resilience by reducing reliance on unstable global energy markets but also fosters long-term energy stability and environmental benefits. In Cambodia, where geographical and climatic conditions are well-suited for renewable energy, implementing these incentives can be especially impactful. Addressing sustainable pricing and ensuring energy security are crucial to achieving lasting growth. Moreover, leveraging digital technologies to support rural areas, especially those on the outskirts of Phnom Penh and in remote provinces with limited traditional energy access, can play a vital role. Digital citizenship programs can empower these communities by providing training and information on alternative energy solutions, driving broader participation in the transition to renewable energy.

Diversification in finance careers

Financial entities can strengthen their role in climate protection by customizing products to support environmental causes, such as green bonds, renewable energy financing, and sustainable infrastructure projects. Aligning these offerings with global sustainability goals makes their

9 National Bank of Cambodia (NBC) and IFC: "National Bank of Cambodia Partners With IFC to Boost Green Finance, Support Climate Action," December 19, 2023. https://www.nbc.gov.kh/download_files/news_and_events/press_eng/502ENG_PressReleaseNBC_IFC.pdf.

strategies more impactful. A key factor in this shift is climate-focused education within the financial sector. Organizations like the CFA Institute are addressing climate education, equipping finance professionals to assess green investments and ensure quality control. Incorporating climate education into financial training fosters expertise in green governance, enabling professionals to understand environmental risks, assess long-term project sustainability, and implement strategies to maximize environmental outcomes. This focus not only builds a skilled workforce in sustainable finance but also creates diverse employment opportunities in climate-focused sectors, supporting industries with green criteria. Additionally, financial entities can advocate for stronger regulatory frameworks that promote transparency and accountability in green finance. By endorsing standards for environmental impact measurement and reporting, and fostering stakeholder collaboration, financial entities can more effectively address climate issues and support sustainable economic growth.

Conclusion

Cambodia can effectively address the climate challenge through financial advancements to encourage sustainable development and economic growth at the community level by using the method of auditing the exposure of the project's confidentiality, optimising the financial incentives toward green products, and increasing the financial job market training in green finance. These are the strategies that stakeholders can approach to demonstrate their dedication to sustainability goals and establish a feasible strategy for the promotion of environmental resilience.



Photo: Electrical and electronic training equipment for technical training institutions in Cambodia, ETEK Total Automation Solutions

CHAPTER 9

Strengthening TVET Digital Governance in Cambodia: Lessons Learned from TVET Management Information System

Sar Puthirith

Executive Summary

- The Royal Government of Cambodia (RGC) has demonstrated the significance of technical vocational education and training (TVET). This effort is emphasized in national policies like the Pentagonal Strategy-Phase 1 and other strategic actions plans. Specifically, TVET digital governance is the trend that requires TVET stakeholders to offer attention.
- TVET Management Information System (TVETMIS) was developed for the purpose of evidence based on TVET policy formation, reporting, and information reference. Nevertheless, the problems of the system include outdatedness, unsmooth operation, unattractive dashboard, and malfunctioning user-interface. It consequently requires revisiting and reviving.
- The system should revive the attachment of extra links, add interactive graphical visualization, enhance connection between dashboard and database, and review webpage language. Through the lessons learned from TVETMIS, dissemination workshops shall be hosted widely, and technical groups must be capacitated regularly with the latest data management technology.

Introduction

Technical Vocational Education and Training (TVET) tremendously contributes to economic development. Almost all economies rely on this sector to develop human capital (skilled labours), eradicate unemployment, as well as promote and support the infant industry, productivity and innovation. To catch up with the fourth Industrial Revolution (IR4.0) and emergence of cutting-edge technology, stakeholders are working to gradually transform themselves with technological integration to any potential aspects of TVET.

Cambodia is not an exceptional case. The seventh legislature government has spotlighted TVET in their strategic directions. They have prioritized the essential roles of TVET in pushing Cambodia's skilled workforces toward abundance. Moreover, led by the government, supported by NGOs, engaging private sectors, TVET has been concentrated to be digitized in any possible aspects including learning materials, registration on E-RPL platform, etc. As a result, during COVID-19 outbreak, the government took action to establish the TVET E-Learning platform. The purpose was to avoid the complete disruption of learning momentum. Despite the recovery of COVID-19, TVET E-Learning continues to serve as an extracurricular platform not only for TVET students but also for the public who seek endless reskilling, upskilling, and E-Vocational Training. The subsequent effort is visible through the TVET 1.5M platform.¹ With inter-ministerial collaboration of Ministry of Economy and Finance (MoEF), Ministry of Social Affairs, Veterans and Youth Rehabilitation (MoSVY), Ministry of Planning (MoP), National Social Assistance Fund (NSAF), and National Employment Agency (NEA), the platform aims to facilitate the registration for the disadvantaged youth to access vocational education opportunities. This has served as the hub for program outreach and virtual registration.

Another milestone is TVET digital governance through information management websites, and monitoring and evaluation mechanisms. This point is the chief discussion in this policy piece. TVET Management Information System (TVETMIS) was developed to serve as an information hub for monitoring, evaluation and reporting, and policy adjustment. However, this digital platform is limited and out of date. The website requires systematic revision.

1 Ministry of Labour and Vocational Training, *TVET 1.5M*, <https://scholarship.tvet.gov.kh/home>

This policy briefly contemplates examining the limitations of TVETMIS. Nevertheless, the disclosure of systematic successful features will also be included. The lessons learned are provided for future digital platforms. In addition, the paper highlights the key policies from the RGC with the discussion on alignment. Eventually, this policy piece concludes with policy recommendations for the further development of TVETMIS itself and future digital platforms in the TVET sector.

What is TVETMIS?

TVETMIS is abbreviated from TVET Management Information System. According to the About Us page in TVETMIS, the system is described as the hub for information management of technical training institutions.² Those technical training institutes are the main responsible for data collection and entry. Subsequently, those data will be aggregated to respond to specific indicators. This action crucially contributes to overall insight in TVET and is set as the reference for decision making and policy formation. This digital platform can be accessed via <https://www.tvetmis.gov.kh/live/kh>.

Key Policy Documents

The RGC of the seventh legislature adopted the Pentagonal Strategy-Phase 1 as the benchmark for their five-year mandate. The vision of the policy aspires to achieve the Cambodia vision as an upper middle-income country by 2030 and high-income country by 2050. The second pillar of the strategy emphasizes technical skills training. The RGC contemplates strengthening, transforming, and promoting skill development, and adjusting the skill ecosystem to respond to industrial needs. Among the six focuses, the RGC underscores the strengthening governance system of TVET institutions through digitalization.³ Furthermore, the government faithfully attempts the process of integration of information technology and data-driven manners into TVET management.

The fourth strategy of the National Technical and Vocational Education and Training (TVET) Policy 2017-2025 were also formed to improve the governance in TVET system.⁴ Although it was formed prior to the adoption of the Pentagonal Strategy, the policy has thus far aligned with the mainstream strategy. The policy strategically laid out five action plans which aim to improve the TVET Management Information System (TVETMIS) and Labor Market Information System (LMIS) while the overall goal is the improvement of governance of TVET systems. Action plans were also proposed including development and maintenance of the reporting system, collaboration with stakeholders, data collection and analysis.

The National Employment Policy (2015-2025) was formulated and functioned as a roadmap with strategies and implementation framework.⁵ The policy consists of three goals which are increasing productive and decent employment opportunities, enhancing skills and human resource development, and enhancing labor market governance. Under the third goal, the policy also lays out six measures including strengthening the information system and database, strengthening employment service and outreach, improving and protecting workers' conditions, harmonizing industrial relations mechanisms, conducting feasibility study on the unemployment scheme, and overseeing and protecting migrant workers that intend to contribute to the enhancement of TVET governance system and evidence-based outlook.⁶

2 Ministry of Labour and Vocational Training, *TVET Management Information System (TVETMIS)*, <https://www.tvetmis.gov.kh/live/kh/about-us>

3 Royal Government of Cambodia of the Seventh Legislature of the National Assembly, *Pentagonal Strategy-Phase 1 for Growth, Employment, Equity, Efficiency and Sustainability: Building the Foundation Towards Realizing the Cambodia Vision 2050*, Phnom Penh, August 2023, 43

4 The Royal Government of Cambodia, *National Technical Vocational Education and Training Policy 2017-2025*, Prepared by Ministry of Labour and Vocational Training, Phnom Penh, 16 June 2017, 13

5 The Royal Government of Cambodia, *National Employment Policy 2015-2025*, Phnom Penh, 04 September 2015.

6 Ibid.,9.

Based on all above-mentioned policies, we can identify digital governance patterns. This demonstrates and underscores the utmost efforts of the government to transform TVET into smart, inclusive informed and evidence-based decision making. Nevertheless, the limitations, challenges, and negative consequences are not far from requiring systematic revisiting and stakeholder's effort for transformation.

Methodology

Quantitative and qualitative methods were complementarity utilized to study this phenomenon. Primary data was collected by digital questionnaire through using KoboToolBox.⁷ The target group was the focal person that has responsibility to oversee and directly involved in collecting and TVETMIS data entry. The characteristics of respondents are detailed in subsequent sections.

Quantitative data was analyzed descriptively by Microsoft PowerBI.⁸ Graphical visualization is also included within paragraphs. Qualitative was included to verify the result. In addition, discourse will be cited in the following section for deeper understanding. The rationale for using KoboToolBox and Microsoft PowerBI is the author's proficiency.

This paper faced challenges that had turned into study limitations. The author found difficulty in data gathering due to the less engagement and encouragement from the target group. In addition, the submission relied on online. Hence, less encouragement to complete the questionnaire also causes the limitation of the study and bias result.

Study Finding and Respondents Characteristics

The survey offered 49 submissions. The respondents comprised technical trainers (71%), admin staff (14%) and management staff (4%) from three different TVET institutions. The result suggested that the respondent characteristic was dominated by technical trainers. One institution is based in Phnom Penh and the other two are in Siem Reap. However, the proportion is different from one another. Additionally, the respondents majorly are male (65%) and women (34%). This is based on figure 1.

Figure 1: Respondent's Position & Sex (Source: Author)



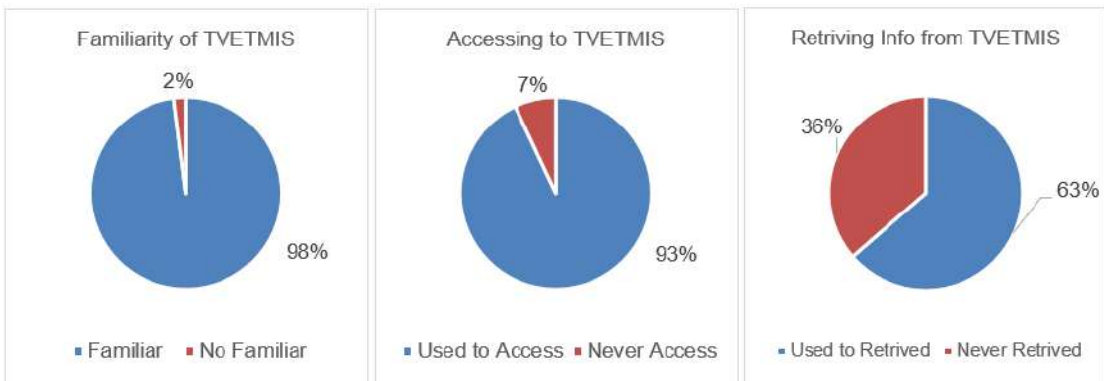
One question attempted to measure the reputation of TVETMIS among respondents. The result demonstrated that 98% of total respondents are familiar with TVETMIS. This implied the wide

7 KoboToolBox is a data collection tool for online data gathering. It is well-known and widely used by many international organizations.

8 Microsoft PowerBI is a data visualization tool. The software had been developed by Microsoft Corporation.

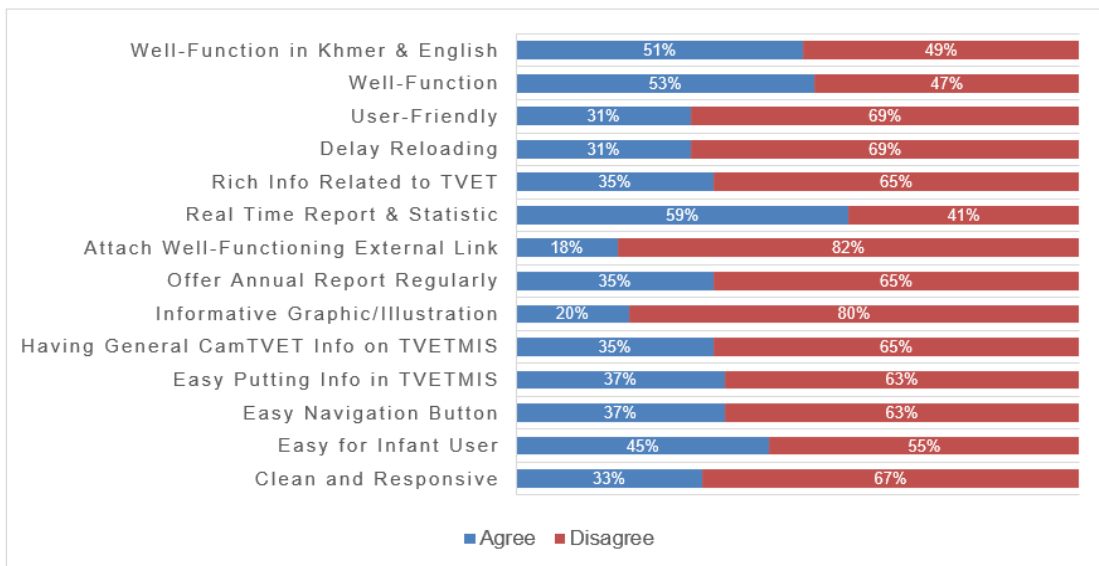
dissemination of TVETMIS among TVET actors. On the same point, the website accessibility of respondents was further asked. It resulted in 93% of respondents visiting the website, regardless, only 6% had never accessed the website. Despite the accessibility, not all respondents retrieved information in TVETMIS during their reporting period. The result revealed that 63% of respondents do report based on TVETMIS while 36% do not. However, the proportion makes sense because TVETMIS was majorly utilized for data entry, student profile management, and training courses management. Those responsibilities were solely assigned to specific focal persons. Below, Figure 2 illustrates the finding.

Figure 2: Familiarity, Accessibility, Retrieving of TVETMIS from Respondents, (Source: Author)



The study further assessed the user-interface and user-experience. Respondents were questioned to offer a rating scale. In the initial questionnaire, the scale was disagreed, neutral, and agreed. However, to simplify the complexity of data analysis, the author merged neutral and disagreed together. Figure 3 resulted from the rating of respondents. (Agree) was colorized in blue while (Disagree) contrarily in red. This was measured in percentages. At first glance, the stacked bar chart was dominated by “Disagreed”.

Figure 3 : Rating Scale on TVETMIS from Respondent, (Source: Author)

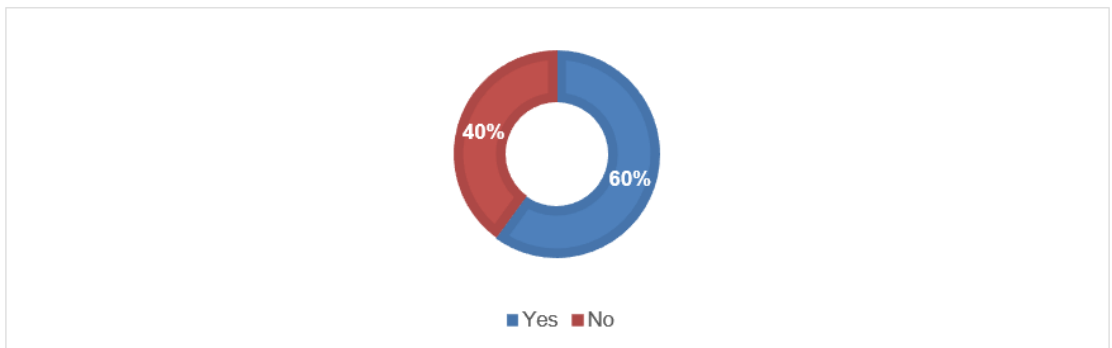


As illustrated in figure 3, the attachment of well-functioning external links received a high disagreement from respondents (agree=18%, disagree=82%). This can be verified by the unreachable links. TVETMIS offered five links to the National Training Board (NTB) website, MLVT website, STVET project, NEA website and Labor Market Information System website. Nevertheless, only the MLVT website is accessible. Other links were error and inaccessible. The following most disagreement is Informative Graphic/Illustration (agree=20%, disagree=80%). In TVETMIS main interface, the bar chart only illustrates reports of trainees in the 2021-2022 academic year. The graph is no longer up to date. Moreover, the sole graph leads to the non-interactive visualization dashboard. This leads to incomprehensive insight regarding respective academic years.

Rating Categories, including User-Friendly, Delay Reloading, Rich Info Related to TVET, Offering Annual Report Regularly, Having General Cambodian TVET Info, Easiness on Putting Info, Navigation, and Easy for Infant User disclosed similar results. On the statement of Well-Function in Khmer & English, the respondent is slightly more agreeable than disagree. However, the proportion is not significantly different. In TVETMIS, the system offered interchangeable buttons between Khmer and English. However, the English webpage is not well-functioned.

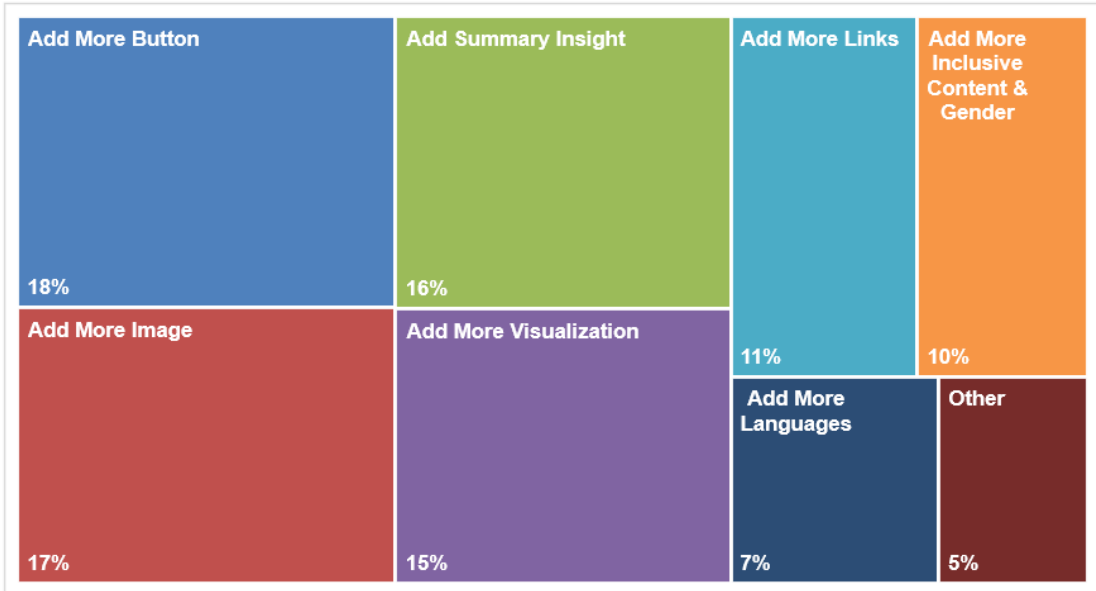
Respondents were questioned regarding the improvement of the TVETMIS. As illustrated in figure 4 as pie chart, 60% of respondents demonstrated further improvement. While 40% of respondents disagreed with the improvement of the system. The questionnaire also detailed further on the point of suggestion for further web page development.

Figure 4: Further Improvement of TVETMIS, (Source: Author)



The tree map chart, figure 5, illustrates the specific point of improvement. The structured questionnaire listed the points for respondents to select. Respondents preferred additional buttons (18%) with clean design, and specific links attachment. The preference was subsequently followed by image addition (17%). Adding Summary Insight and adding more graphic visualization received (16%) and (15%) respectively. In addition, the respondents offered their preference to consider additional links, languages and inclusive & gender-based content.

Figure 5: Categories of Improvement from Respondent, (Source: Author)



With a deep dive manner, if the respondent chose “Add More Links”, another extra question popped up. We have learnt that TVET content on Youtube is the popular option. The respondents also digested a few notable malfunctioning and suggestions. It was reported that TVETMIS faced the duplicated data after clicking save. Moreover, the system hardly recognized the Khmer name that contains complex alphabets, consonants and vowels. In addition, two respondents offered their notable comments as completely cited below.

“The existence of the system should be widely disseminated. I have never received any information related to the utilization of this system. If this system is well developed, the reporting process would be more efficient than now. Now, I hardly produce quarterly reports, half-year reports, annual reports and others because of unclear sources of data and information. – Respondent as Admin Staff, Phnom Penh

“Highly capable experts shall be hired for system maintenance. The system shall offer comprehensive analysis. Don’t spend a huge package of budget without efficiency since there are lots of systems with less efficiency. Moreover, thousands of dollars had been spent already. Hence, we should optimize the advantage of system as much as we are able to.”- Respondent as Management Staff, Siem Reap

Issue Implications

The limitations of TVETMIS that had emerged in the above subsections imply the further limitations of the system which will be further discussed in subsequent paragraphs. First, the unwell-functioning system has caused double effort on data entry. This systematic difficulty led to inefficiency of data assurance. When the data source could not be cemented, the outcome and information extraction cannot be consequently achieved. Hence, the information management will eventually be absent. Second, the absence and ineffectiveness of TVETMIS leads to deficient benchmarks and unreliable references of TVET policy formation. The absence of a visualization dashboard has caused unconvincing and unreliable decision making. Moreover, this could lead to a less proactive attitude toward data driven manners among TVET stakeholders.

Third, this indicates the slow progress and less effort on the process of TVET digitalization in the kingdom. This could be marked as an obstacle to the efforts of the RGC from the previous mandate. Ultimately, this has loosened the future strength of Cambodia TVET digital governance.

Fourth, if stakeholders continuously overlook these systematic and technological challenges and lessons, the future digital platform will end up being the same as TVETMIS. Out of date, technical difficulty, no public impression could carry on. The system might end up being purposeless and ignorant. Furthermore, this could lead to a waste of financial expenditure. When a package of budget is hugely spent with the least returning advantage.

Policy Recommendations

After the examination of the lesson learned, this paper aims to introduce policies. Based on study findings, actions are categorized into two sections. Specifically, for TVETMIS, and for future digital platforms will be described in subsequent sections.

For TVETMIS

Revive the extra link attachments: TVETMIS shall be revisited in the link attachments. Attached links must be fixed with the existing websites. Websites or information portals of Cambodian TVET stakeholders shall be fixed and ensured the accessibility. This could ensure the snowball visiting and existential website to the public. Plus, this can enforce the enrichment of learning and knowledge harvesting of the TVET sector.

Add extra interactive graphical visualizations: Informative graphs shall be added according to the available data, and analytical information and dashboard needed. This would be more advanced if 3rd party software was embedded. Tableau, Microsoft PowerBI, and Oracle Analytic could be the considerable options. These tools provide an integrated function. Moreover, these tools also provide crosstab analysis and intelligent graphs. Users or visitors could extract maximumly the information from those designated graphs, and the entire dashboard.

Revive the connection between visualization tool and data source: The seamless connection of data visualization tool and data source should be monitored, durable and flexible on time.

Revive the webpage language: Webpage should be available for Khmer and English. This could stimulate the diverse website to international visitors. Non-Khmer speakers could understand the contents on webpages.

Informative & Inclusive TVET content should be digested in the page: The webpage should reserve sections for highlighting milestones, experience of best practice in TVET from Cambodian perspective. This would count as knowledge sharing management. Moreover, the government can showcase their experience at either regional or international level. Moreover, the webpage could be an insightful hub for giving directions to others.

For Future Digital Data

Widely host of dissemination workshops: the widely known existing digital platform is crucial for either TVET stakeholder or public. Through this, the audience will be aware of the usefulness and utilization of those platforms.

Capacitate Regularly the Technical Working Group: web technology constantly evolves and updates. Hence, the technical group should equip themselves with life-long learning behavior and latest trends.

Conclusion

This policy paper attempted to address the limitations and incomplete functions of TVETMIS by providing practical recommendations and unpacking the lessons learned for future digital platforms. Any digital platform introduction should consider the successes and failures of TVETMIS in this piece for altering performance and optimizing systematic utilization. This will contribute greatly to the realization of Cambodia's vision in 2050 in TVET aspects. Moreover, for Cambodia, this will be an active contribution to SDG goals in the aspect of quality education, decent work and economic growth.



Photo: "Cambodia: Systematically measuring success in vocational education," Swisscontact



Photo: Small Businesses Exhibition at the 2024 Waste Summit Cambodia. KAS Cambodia

CHAPTER 10

Driving Digital Transformation: A Requisite for Empowering Cambodia's SMEs Toward Sustainable Growth

Pork Pagnapich

Executive Summary

- In Cambodia, small and medium enterprises (SMEs) play a significant role in surging the country's employment opportunities and GDP. Embracing digital transformation is vital for SMEs to ensure sustainable growth and competitiveness in the fast-evolving business landscape. This policy brief outlines the importance of digital adoption, highlights government initiatives, discusses benefits and challenges, and provides policy recommendations for fostering a digital economy ecosystem in Cambodia.
- There are four key points as follows:
 - **Government Initiatives:** The Royal Government of Cambodia (RGC) has introduced several policies to support digital adoption of SMEs. The key policies include the Cambodia Digital Economy and Society Policy Framework 2021-2035 (CDESPF, 2021-2035) and the Digital Government Policy 2022-2035 (DGP, 2022-2035).
 - **Benefits of Digital Transformation:** Digital tools streamline processes, reduce costs, and improve resource allocation. Digitalization allows SMEs to expand their market reach, engage in e-commerce, and enhance their competitiveness. Digital transformation facilitates SMEs' integration into global value chains and adherence to international standards.
 - **Challenges:** SMEs face obstacles including limited access to markets, financing, and technical skills.
 - **Policy Recommendations:** To promote digital adoption among SMEs, clear and accessible policies are essential to drive digital transformation. Building digital skills and literacy is crucial, as many Cambodian SMEs lack the necessary knowledge to utilize digital technologies effectively. Collaboration among government, industry associations, technology providers, and financial institutions will help create a supportive digital ecosystem, providing SMEs with resources and expertise. A long-term commitment to digital transformation, including continuous improvement, skills development, and innovation, will ensure sustainable growth and competitiveness for SMEs in the digital economy.

Introduction

In Cambodia, small and medium enterprises (SMEs) shared 58% of Cambodia's GDP, and provided over 70% of employment (UNESCAP, 2019).¹ Thus, SMEs contribute significantly to social and economic development, serving as the backbone of the Cambodian economy. Notwithstanding, in today's rapidly evolving business landscape, the crucial need of digital transformation has emerged for SMEs seeking not only survival but also sustainable growth. While being the catalyst of the Cambodian economy, SMEs are facing numerous challenges including limited access to internal and external markets, financial resources, operational models, and technical skills and knowledge.² In addition, SMEs are also facing other issues such as incoherent regulatory frameworks and high input costs, while experiencing difficulties in accessing business development services such as capacity building and upgrading, business networking, and access to finance provided by the Royal

1 Layby Chea, "The Current Situation of SME in Cambodia: SME Financing," *unescap.org*, 2019, <https://www.unescap.org/sites/default/files/SME%20Financing-Chhea%20Layhy%202019.pdf>

2 Sambath Thy, "Roles of SMEs in Cambodian Economic Development and Their Challenges," *nbc.gov.kh*, November 2021, https://www.nbc.gov.kh/download_files/macro_conference/english/Roles_of_SMEs_in_Cambodian_Economic_Development_and_Their_Challenges.pdf.

Government of Cambodia (RGC) and development partners.³

The RGC has long recognized positive contributions of the SMEs to the national economic growth. Therefore, the RGC has issued a number of policies and established business support service institutions for SMEs to accelerate the digital adoption. The initiatives are aimed at providing support for sustainable business practices and enhancing economic efficiency and productivity through digital technology and innovation. To build the vibrant entrepreneurial ecosystem, Cambodia should embrace digital technologies as the strategic necessity of empowering its SMEs towards sustainable growth.

The RGC's Initiatives

Recognizing the pivotal contributions of SMEs to economic growth, the RGC has taken steps to promote SMEs digital adoption. The CDESPF (2021-2035) was adopted in May 2021, paving the way for the other supporting policies, key priorities, and implementation principles to be formed subsequently.⁴ The policy has five main key measures, namely Digital Reliability and Confidence, Digital Citizen, Digital Government, Digital Business, and Digital Infrastructure, among which the Digital Business has become a priority in this fourth Industrial Revolution (IR4.0).

The CDESPF (2021-2035) has been integrated into the Pentagonal Strategy, as stated in the Pentagon 5 (Development of Economy and Society).⁵ The policy was launched in 2022 with the vision of developing a vibrant digital economy and society.⁶ Its primary goals include establishing a digital government to enhance people's quality of life and fostering greater trust through improved public service provision. The policy is guided by specific implementation principles focused on delivering services directly to citizens (G4C), providing services to businesses (G2B), and facilitating interactions between government entities (G2G). Overall, this initiative aims to leverage digital technologies to create a more efficient, transparent, and responsive government that meets the diverse needs of citizens and businesses alike. This explicitly demonstrates that the government must be ready to provide utmost services to citizens, business people, and the governmental institutions themselves. Public institutions like the Khmer Enterprise (KE) and the Techo Startup Center (TSC) are established to provide support for sustainable business practices. These institutions have played a crucial role in promoting digital adoption and supporting SMEs in their digital transformation journey.

Why Does Digital Transformation Matter?

Operational Efficiency

Digital tools and solutions enhance operational efficiency. By adopting digital technologies, SMEs can streamline processes, reduce costs, and improve resource allocation. For instance, cloud-based accounting systems simplify financial management, allowing businesses to focus on core activities. This efficiency not only cuts operating costs but also enhances agility, a crucial asset in today's dynamic business environment. A recent survey by the Cambodian Development Resource Institute (2023) on digital technology adoption in Cambodia's tourism MSMEs found that 19% of

3 Nuppun Institute for Economic Research, Cambodia, for the United Nations Department of Economic and Social Affairs Division for Sustainable Development Goals, "Supporting Micro-, Small and Medium-sized Enterprises (MSMEs) to Achieve the Sustainable Development Goals (SDGs) in Cambodia through Streamlining Business Registration Policies," *sgds.un.org*, March 05, 2020, <https://sdgs.un.org/sites/default/files/2020-07>

4 Royal Government of Cambodia, Supreme National Economic Council, *Cambodia Digital Economy and Society Policy Framework 2021-2035*, May 2021, Phnom Penh.

5 Royal Government of Cambodia, *Pentagonal Strategy-Phase I for Growth, Employment, Equity, Efficiency, and Sustainability: Building the Foundation Towards Realizing the Cambodia Vision 2050*, August 2023, Phnom Penh.

6 Royal Government of Cambodia, Ministry of Post and Telecommunications, *Cambodia Digital Government Policy 2022-2025*, January 2022, Phnom Penh.

these businesses reduced their operating costs, while 29% saw an increase in profits.⁷ The study also found that around 29% of the MSMEs witnessed a rise in labour productivity, and 40% of them said digitalization helped them simplify business operations, essentially on the financial management aspect.

In addition, digital transformation allows SMEs to adopt more efficient business models. For example, digital tools can optimize supply chain management, reduce lead times, and minimize inventory costs.⁸ Automation technologies can streamline routine tasks, freeing up human resources to focus on strategic initiatives. Moreover, data analytics can provide valuable insights into consumer behavior, enabling SMEs to make informed decisions and tailoring their products and services to meet market demands more effectively. Such operational efficiencies are crucial to SMEs to remain competitive and adaptive to the rapidly changing business environment.

Market Expansion, Competitiveness, and Inclusion in Global Value Chain

Digitalization opens doors to broader markets. By leveraging digital tools, SMEs can reach customers beyond geographical boundaries, participate in e-commerce, and explore export opportunities. A well-designed website or an active presence on social media platforms can significantly boost visibility and customer engagement. In addition, digital transformation equips SMEs with digital tools to compete effectively, which is crucial in the globalized economy. Whether it is automating inventory management, implementing data analytics, or optimizing supply chains, technology-driven strategies enhance competitiveness. Digital adoption also fosters inclusion in global value chains. By aligning with international standards and leveraging digital platforms, Cambodian enterprises can participate in cross-border trade and collaborate with partners worldwide.

One of the many of the interventions in progress, a joint initiative, namely, the SME-eBiZNest of the Go4eCAM project, between the Khmer Enterprise, the United Nations Development Fund (UNDP), the Ministry of Commerce (MoC), the Enhanced Integrated Framework (EIF), and the Australian Government, has served as a catalyst for SMEs to boost their online presence, provide new services, and open doors to international opportunities.⁹ The program has trained and provided grants to more than 175 SMEs to transition into digital and e-commerce platforms since 2020. H.E. Dr. Chhieng Vanmunin, CEO of the Khmer Enterprise, said, "Given the difficult circumstances caused by the COVID-19, through this program partnership, qualified SMEs will have various opportunities to receive grants that are provided by Khmer Enterprise. This program structure offers efficient mechanisms to provide funds and is able to train SMEs to go digital." The COVID-19 crisis has catalyzed proactive efforts by policymakers and organizations like the Khmer Enterprise to bolster SME resilience through targeted financial support and capacity-building programs focused on digital transformation. Such intervention will contribute to the acceleration of the RGC's Pentagonal Strategy for promoting digital economy, which underscores the critical role of digitalization in Cambodia's economic development and the need to empower MSMEs through digital initiatives.

7 Cambodia Development Resource Institute, "The Current State and Role of Digital Technology Adoption in Tourism MSMEs in Cambodia," *asiafoundation.org*, The Asia Foundation, March 17, 2023, <https://asiafoundation.org/wp-content/uploads/2023/07/The-Current-State-and-Role-of-Digital-Technology-Adoption-in-Tourism-MSMEs-in-Cambodia.pdf>

8 Sahoo, Sushil Kumar & Goswami, Shankha & Sarkar, Shouvik & Mitra, Soupayan, "A Review of Digital Transformation and Industry 4.0 in Supply Chain Management for Small and Medium-sized Enterprises," *researchgate.net*, 2023, https://www.researchgate.net/publication/379532801_A_Review_of_Digital_Transformation_and_Industry_4_0_in_Supply_Chain_Management_for_Small_and_Medium-sized_Enterprises

9 "Khmer Enterprise and UNDP to Boost Cambodia's SMEs Development," *undp.org*, May 19, 2021, <https://www.undp.org/cambodia/press-releases/khmer-enterprise-and-undp-boost-cambodias-smes-development>

Enhancing Customer Experience and Engagement

Digital transformation enables SMEs to enhance customer experience and engagement. By utilizing digital tools such as customer relationship management (CRM) systems, SMEs can manage customer interactions more effectively, track customer preferences, and personalize their services.¹⁰ E-commerce platforms allow SMEs to reach a broader customer base and provide convenient shopping experiences. Social media platforms offer opportunities for businesses to engage with customers, gather feedback, and build brand loyalty. For example, the use of chatbots on websites can provide instant customer support, improving customer satisfaction and retention. Additionally, data analytics can help SMEs understand customer behavior and preferences, allowing them to tailor their marketing strategies and product offerings accordingly. Enhanced customer engagement not only boosts sales but also fosters long-term relationships with customers, contributing to business sustainability.

Access to New Markets and Global Trade Opportunities

Digital transformation opens up new market opportunities for SMEs by breaking down geographical barriers. Through e-commerce platforms, SMEs can reach customers in different regions and countries, expanding their market reach and increasing sales potential.¹¹ Participation in global trade becomes more feasible as digital tools facilitate cross-border transactions, logistics management, and compliance with international trade regulations. For instance, platforms like Alibaba and Amazon provide SMEs with access to global marketplaces, enabling them to showcase their products to a vast audience. Digital marketing techniques such as search engine optimization (SEO) and social media advertising can further enhance visibility and attract international customers. By leveraging digital platforms, Cambodian SMEs can tap into the growing global demand for diverse products and services, boosting their competitiveness and revenue streams.

Enhancing Supply Chain and Inventory Management

Digital technologies play a pivotal role in enhancing supply chain and inventory management for SMEs. By implementing digital solutions such as enterprise resource planning (ERP) systems, SMEs can optimize their supply chain processes, track inventory levels in real-time, and reduce lead times.¹² Automation tools streamline procurement, order processing, and logistics, minimizing manual errors and improving efficiency. For example, radio frequency identification (RFID) technology can be used to track inventory movements and monitor stock levels, ensuring timely replenishment and reducing the risk of stockouts. Predictive analytics can help SMEs forecast demand accurately, enabling better inventory planning and minimizing excess stock. Enhanced supply chain visibility and efficiency contribute to cost savings and improved customer satisfaction, as businesses can fulfill orders promptly and accurately.

10 Gil-Gomez, Hermenegildo & Guerola-Navarro, Vicente & Oltra-Badenes, Raul & Lozano-Quilis, José, "Customer relationship management: digital transformation and sustainable business model innovation. *Economic Research-Ekonomska Istraživanja*," *researchgate.net*, 2020, https://www.researchgate.net/publication/338725465_Customer_relationship_management_digital_transformation_and_sustainable_business_model_innovation

11 Organization for Economic Co-operation and Development, "SMEs in the online platform economy," *oecd-ilibrary.org*, 2020, <https://www.oecd-ilibrary.org/sites/bdb9256a-en/1/3/3/index.html?itemId=/content/publication/bdb9256a-en&csp=42ee43b7fa49ef116a6caf8c78b53d84&itemIGO=oecd&itemContentType=book>

12 Mohammad Taghi Sadeghi, "Enhancing Supply Chain Management in Small/Medium Enterprises through Business Intelligence: A Conceptual Model Approach," *researchgate.net*, 2024, https://www.researchgate.net/publication/379865483_Enhancing_Supply_Chain_Management_in_Small-Medium_Enterprises_through_Business_Intelligence_A_Conceptual_Model_Approach/fulltext/661f17b043f8df018d1442ee/Enhancing-Supply-Chain-Management-in-Small-Medium-Enterprises-through-Business-Intelligence-A-Conceptual-Model-Approach.pdf

Driving Innovation and Product Development

Digital transformation fosters innovation and product development within SMEs. By leveraging digital tools and technologies, businesses can streamline their research and development processes, accelerate product innovation, and bring new products to market more quickly.¹³ Digital platforms enable SMEs to gather customer feedback, conduct market research, and identify emerging trends which guide their innovation efforts. For instance, 3D printing technology allows SMEs to create prototypes and test new product designs at a fraction of the cost and time compared to traditional manufacturing methods.¹⁴ Virtual reality (VR) and augmented reality (AR) can be used for product demonstrations and immersive customer experiences which enhance engagement and differentiation. By embracing digital innovation, SMEs can stay ahead of competitors, meet evolving customer needs, and drive business growth.

Improving Financial Management and Access to Capital

Digital transformation improves financial management and access to capital for SMEs. Cloud-based accounting systems and financial management tools streamline bookkeeping, invoicing, and expense tracking, reducing administrative burdens and ensuring accurate financial records. These tools provide real-time insights into cash flow, profitability, and financial performance, enabling better decision making.¹⁵

Moreover, digital platforms facilitate access to financial services and capital for SMEs. Fintech solutions offer alternative financing options such as peer-to-peer lending, crowdfunding, and online business loans. Digital payment systems enable secure and convenient transactions, enhancing financial inclusivity. By leveraging digital financial tools, SMEs can manage their finances more effectively, access funding opportunities, and fuel their growth initiatives.

Enhancing Cybersecurity and Data Protection

As SMEs embrace digital transformation, ensuring cybersecurity and data protection becomes paramount. With the increasing reliance on digital technologies, businesses are exposed to various cyber threats and data breaches.¹⁶ Implementing robust cybersecurity measures and data protection practices is essential to safeguard sensitive information and maintain customer trust.

SMEs should adopt cybersecurity frameworks and best practices to protect their digital assets. This includes using firewalls, encryption, multi-factor authentication, and regular software updates. Employee training and awareness programs can help mitigate human errors and enhance cybersecurity resilience. Collaborating with cybersecurity experts and service providers can provide SMEs with access to advanced security solutions and expertise. By prioritizing cybersecurity, SMEs can build a secure digital environment, protect customer data, and mitigate risks associated with cyber threats.

13 Hu, Y., Pan, Y., Yu, M. *et al.*, "Navigating Digital Transformation and Knowledge Structures: Insights for Small and Medium-Sized Enterprises," *springer.com*, 2024, <https://link.springer.com/article/10.1007/s13132-024-01754-x>

14 Ong, S K & Nee, Andrew, "A Brief Introduction of VR and AR Applications in Manufacturing," *researchgate.net*, 2004, https://www.researchgate.net/publication/300799623_A_Brief_Introduction_of_VR_and_AR_Applications_in_Manufacturing

15 Avira, Silvia & Rofi'ah, & Setyaningsih, Endang & Utami, Suryandari, "Digital Transformation in Financial Management: Harnessing Technology for Business Success," *researchgate.net*, 2023, https://www.researchgate.net/publication/372364117_Digital_Transformation_in_Financial_Management_Harnessing_Technology_for_Business_Success

16 Benjamin, Lucky & Adegbola, Ayodeji & Amajuoyi, Prisca & *et al.*, "Digital transformation in SMEs: Identifying cybersecurity risks and developing effective mitigation strategies," *researchgate.net*, 2024, https://www.researchgate.net/publication/381001776_Digital_transformation_in_SMEs_Identifying_cybersecurity_risks_and_developing_effective_mitigation_strategies

Policy Recommendations

Simplified Policies and Collaboration

To encourage SMEs to adopt digital technology, digital adoption policies must be simple and easy to understand. Dr. Taing Nguonly, Executive Director of the TSC, emphasizes that the journey toward digitalization is both continuous and responsive to dynamic business needs.¹⁷ Clear guidelines and accessible support mechanisms are essential. Stakeholders, government agencies, financial institutions, industry associations, and SMEs must collaborate with each other. Joint efforts can create an ecosystem conducive to digital transformation. In addition, training programs, mentorship, and access to capital are critical components. Simplified policies and streamlined processes can reduce bureaucratic hurdles and encourage more SMEs to embrace digital transformation. Additionally, fostering partnerships with technology providers and industry experts can facilitate knowledge sharing and access to digital solutions.

Building Digital Skills and Literacy

A critical component of successful digital transformation is building digital skills and literacy among SMEs. Many small businesses in Cambodia lack the necessary digital skills and knowledge to effectively adopt and utilize digital technologies. To address this gap, comprehensive training programs and capacity-building initiatives should be implemented. The programs should focus on enhancing digital literacy, providing technical skills training, and offering guidance on digital strategy development. These programs can be delivered through workshops, online courses, and mentorship programs. Collaborating with educational institutions, industry associations, and technology providers can ensure the availability of high-quality training resources.

Furthermore, promoting digital literacy among business owners and employees is essential. Business owners need to understand the benefits of digital transformation and how it can drive business growth. Employees should be equipped with the skills to effectively use digital tools and technologies in their daily operations. By building digital skills and literacy, SMEs can overcome barriers to digital adoption and unlock the full potential of digital transformation.¹⁸

Creating a Supportive Digital Ecosystem

Creating a supportive digital ecosystem is crucial for the success of SMEs' digital transformation efforts. This involves fostering collaboration and partnerships between various stakeholders, including government agencies, industry associations, technology providers, financial institutions, and SMEs themselves.

The government agencies can play a pivotal role by providing policy support which creates an enabling regulatory environment and offers financial incentives for digital adoption. Industry associations can facilitate knowledge sharing, networking, and access to resources and expertise. Technology providers can offer affordable digital solutions and technical support to SMEs. Financial institutions can develop tailored financial products and services to support digital transformation initiatives.

17 "Khmer Enterprise and UNDP to Boost Cambodia's SMEs Development," *undp.org*. May 19, 2021, <https://www.undp.org/cambodia/press-releases/khmer-enterprise-and-undp-boost-cambodias-smes-development>

18 Krajcik, Vladimir & Novotný, Ota & Civelek, Mehmet & Zvolánková, Svetlana, "Digital Literacy and Digital Transformation Activities of Service and Manufacturing SMEs," *researchgate.net*, 2024, https://www.researchgate.net/publication/372026374_Digital_Literacy_and_Digital_Transformation_Activities_of_Service_and_Manufacturing_SMEs

Collaboration and partnerships can create a synergistic effect, enabling SMEs to access the necessary resources, expertise, and support for their digital transformation journey. By working together, stakeholders can address the challenges faced by SMEs and create an ecosystem that fosters innovation, growth, and sustainability.

Enhancing Collaboration and Networking Opportunities

Collaboration and networking are essential for SMEs to thrive in the digital era. By building strong networks and partnerships, SMEs can access new opportunities, share knowledge, and collaborate on innovative projects. Digital platforms and online communities provide avenues for SMEs to connect with peers, industry experts, and potential customers.

Industry associations, business chambers, and trade organizations can facilitate networking events, conferences, and forums where SMEs can exchange ideas and learn from each other's experiences. Online platforms, such as LinkedIn and industry-specific forums, offer opportunities for virtual networking and collaboration.

Collaborative initiatives, such as joint ventures, partnerships, and research projects, can drive innovation and open new market opportunities. By fostering a culture of collaboration and networking, SMEs can leverage collective expertise, access resources, and navigate the challenges of digital transformation more effectively.

Long-Term Vision

Digital transformation is not a short-term fix. SMEs should recognize that going digital is an ongoing process. It requires adaptability, investment in skills development, and a commitment to staying updated with technological advancements. CDRI's report reiterates that the majority of MSMEs in Cambodia who have already utilized digital technologies are still in the early stages of adoption.¹⁹ Therefore, CDRI (2023) suggests six priorities of policy action to enhance the digital adoption for MSMEs.²⁰

- Promoting ICT and digital infrastructure involves expanding broadband access and investing in telecommunications to enable MSMEs to leverage digital tools effectively.
- Increasing knowledge and skills in digitalization aims to enhance workforce competency through targeted training programs, benefiting micro, and unregistered businesses.
- Promoting digital literacy focuses on raising awareness and assisting MSMEs decision-makers in developing digital investment strategies, with a particular emphasis on micro and unregistered businesses.
- Supporting access to financial services including expanding business loan opportunities and promoting digital payments to improve financial inclusivity for MSMEs.
- Enhancing trust in digital solutions involves establishing robust legislative frameworks for data protection and cybersecurity, coupled with education initiatives for MSMEs.
- Incentivizing MSMEs to uptake digital technology adoption includes offering financial

19 Cambodia Development Resource Institute, "The Current State and Role of Digital Technology Adoption in Tourism MSMEs in Cambodia," [asiafoundation.org](https://asiafoundation.org/wp-content/uploads/2023/07/The-Current-State-and-Role-of-Digital-Technology-Adoption-in-Tourism-MSMEs-in-Cambodia.pdf), The Asia Foundation, March 17, 2023, <https://asiafoundation.org/wp-content/uploads/2023/07/The-Current-State-and-Role-of-Digital-Technology-Adoption-in-Tourism-MSMEs-in-Cambodia.pdf>

20 Cambodia Development Resource Institute, "The Current State and Role of Digital Technology Adoption in Tourism MSMEs in Cambodia," [asiafoundation.org](https://asiafoundation.org/wp-content/uploads/2023/07/The-Current-State-and-Role-of-Digital-Technology-Adoption-in-Tourism-MSMEs-in-Cambodia.pdf), The Asia Foundation, March 17, 2023, <https://asiafoundation.org/wp-content/uploads/2023/07/The-Current-State-and-Role-of-Digital-Technology-Adoption-in-Tourism-MSMEs-in-Cambodia.pdf>

incentives such as matching grants and professional guidance on digital solutions to foster a business environment which is conducive to digital innovation and competitiveness. These integrated priorities form a strategic framework aimed at fostering MSME growth and resilience in the digital era.

Conclusion

Beyond individual businesses, digital adoption across SMEs in Cambodia can have a transformative and long-term impact on Cambodia's economic development. Success in digitalization means economic efficiency and business sustainability, fostering a positive and forward-thinking business environment. Digital transformation is not an option. It is a requisite for empowering Cambodia's SMEs for sustainable growth. As the RGC is embracing digital transformation, the SMEs can thrive to ensure business successes, create decent employment, drive resilient economic growth, and contribute to the realization of the Cambodia Vision 2050 of becoming a high-income nation.



Startup

customer success
↳ growth
↳ turn

Plan

problems + competition
Be different





Photo: Prime Minister Hun Manet at the Opening Ceremony of the 1st Digital Government Forum. cpp.org.kh

CHAPTER 11

Digital Government in Facilitating FDI Flows in Cambodia

Kosal Bopha

Executive Summary

- Cambodia in the globalization era has developed and adopted digital transformation in every aspect of government society, business, and citizens while trying to take advantage of this new phenomenon to improve the economy.
- However, foreign direct investment (FDI) faces many challenges, including the complicated procedures and red tape that become barriers to attracting FDI.
- Adopting digital government will facilitate FDI flows in Cambodia by linking digital government to the Cambodian digital economy and society framework.
- Guided by other countries' success and the digital government's critical benefits in facilitating FDI, the government needs to take one more step forward regarding the reform and strengthen government officials' capability.

Introduction

Digital Government refers to using digital technologies and data among governments and their external relations to improve public service and transparency. Based on Digital Government Policy 2022-2035, digital government was created to build the necessary digital infrastructure to develop sustainable digital government emphasizing the improvement of public administration, public sector efficiency, and public service delivery to the demand of the public. To achieve the vision, the government proposes four main strategic goals by focusing on enhancing government infrastructure, building digital governance and digital public service, fostering capability-building and digital innovation, and promoting private and public partnerships.¹

Hence, it benefits both society and the economy through cost reduction and efficiency gains. Notably, in the globalized world, technology plays a crucial role in promoting economic growth and inclusiveness toward foreign direct investment (FDI). As mentioned in the framework of the Cambodian digital transformation roadmap, digital transformation will reduce bureaucracy, lengthy processes, and red tape. This transformation is significant in advancing public service delivery, reducing costs, and improving internal business processes.²

This implementation aligns with the fact that public-private partnerships (PPP) are essential. As emphasized in Prime Minister Hun Manet's speech during the official launching ceremony of National Single Window (NSW) on 07 May 2024, he encourages the private sector to take full advantage of the Cambodia National Single Window (CNSW) application, which allows importers and exporters to apply for licenses, permits, certificates, and other documents (LPCO) in the online CNSW portal. This is Cambodia's transition from paper-based to paperless operations, which plays a crucial role in trade facilitation.³

1 Reth Soeng and Thach Kao. Digital Government in Promoting Trade: The Case of Cambodia, 2024. https://www.eria.org/uploads/10_Chapter-9-The-Case-of-Cambodia.pdf

2 Pirun, C., et al., "Development Cambodia's Digital Economy: Youth's Perspective", January 2021. https://www.nbc.gov.kh/download_files/macro_conference/english/S6_Development_Cambodia_Digital_Economy_Youth_Perspective.pdf

3 KhmerTimes. PM urges Private sector to participate and take full advantage of the NSW application, May 22, 2023. <https://www.khmertimeskh.com/501484346/pm-urges-private-sector-to-participate-and-take-full-advantage-of-the-nsw-application/>

Significance of Digital Government in FDI

According to the Cambodia Digital Economy and Society Policy Framework in 2021, digital infrastructure and digital government play an essential role in improving public administration, public sector efficiency, and public service delivery. The Cambodian government has made great progress in transforming Cambodia into a digital society by implementing the framework of digital transformation. Significantly, it aims to align with the digital economy and society policy framework (2021–2035) and digital government policy (2022–2035).

Taking this into consideration, the digital government initiated the incentive mechanism for digital startups, aiming to promote digital entrepreneurship, research in digital technologies, and innovation for sustainable development. Hence, it illustrates that digital government has a huge impact on the economy, especially foreign direct investment facility flows.

As corruption limits the flow of FDI, the digital government puts corruption under control. It plays a crucial role as an effective tool to control corruption, specifically cost reduction since it reduces the direct contact between government officers and businesses or citizens in questioning arbitrary procedures. Therefore, it increases accountability and the fight against corruption. Over time e-government is associated as a powerful tool in reducing corruption. The positive impact of e-government in combating corruption is shown by the finding of the data set from 214 countries from 2003 to 2016 found by Park and Kim (2019).⁴ In addition to that, digital government plays a significant role in cost reduction and efficiency gains. By implementing digital government, Information and Communication Technology (ICT) will improve the administrative bureaucracy and the procedure performance for public tasks that are done by government officers, as well as make it easier for citizens and businesses to receive public services. In particular, the establishment of a digital government framework can cut costs by reducing paperwork, staffing, printing, and visits to the government office. As well, it allows citizens, businesses, and the public sector to access available government information through digital government applications. The report shows that 61% of government officials at a national level get benefits from cost savings through the use of computers in their organizations. Similarly, on the sub-national level, 62% of officials have a good experience with time reductions to complete tasks due to the affordance of using information technology by the local government.⁵

Most importantly, as digital government shifts public sector functions online, it will address challenges faced by private investors, both domestic and foreign, as multinational enterprises always face difficulties accessing public agencies and are time-consuming. The other complicated problem is the approval of business permits by different government agencies. Additionally, weak accountability and transparency might lead to corruption. With government functions moving online, businesses can access information at much lower costs round the clock from anywhere, enhancing government accountability and reducing opportunities for corrupt rent-seeking activities.⁶ For example, through digital government, businesses can register with the Ministry of Commerce (MOC) through an online business registration portal and with the General Department of Taxation (GDT). Most importantly, the Ministry of Economy and Finance (MEF) launched a single online platform called Single Portal where businesses can register for the three ministries.⁷

4 Reth Soeng and Thach Kao. Digital Government in Promoting Trade: The Case of Cambodia, 2024. https://www.eria.org/uploads/10_Chapter-9-The-Case-of-Cambodia.pdf

5 Reth Soeng and Thach Kao. Digital Government in Promoting Trade: The Case of Cambodia, 2024. https://www.eria.org/uploads/10_Chapter-9-The-Case-of-Cambodia.pdf

6 Pirun, C., et al., "Development Cambodia's Digital Economy: Youth's Perspective", January 2021. https://www.nbc.gov.kh/download_files/macro_conference/english/S6_Development_Cambodia_Digital_Economy_Youth_Perspective.pdf

7 Vanyuth Chea. Single Portal Registers \$3.76 billion investments, *KhmerTimes*, March 27, 2024. <https://www.khmertimeskh.com/501462968/single-portal-registers-3-76-billion-investments/>

Significantly, IMF working paper indicated that digital government provides a lot of benefits to a country through foreign direct investment, as follows:

First, digital government can facilitate FDI flows through cost and time reduction by improving the effectiveness of the internal processes of government services using a government one-stop portal. For instance, the research finding indicates that before 1989, applicants needed to complete 21 distinct forms to receive an import or export license in Singapore. Additionally, the request must be processed by 23 federal departments and agencies, which might take 15 to 20 days. However, once the government introduced TradeNet in October 1989, licenses could be obtained in 15 seconds and only one online form was needed.

Second, digital government provides access to public services. Hence, it makes the public sector more inclusive, effective, accountable, and transparent. In another case to combat corruption and give its residents access to a variety of pertinent information, South Korea introduced the Online Procedures Enhancement (OPEN) system for civil applications in 1999. Therefore, e-government services contributed to the reduction of red tape and corruption, which made investors more competitive.

Third, by using digital government, businesses, and citizens can access information and knowledge about investment opportunities in a host economy. E-government is a tool to improve an investor's knowledge of the behaviors and operations of institutions in the target host economy in which they want to invest.⁸

Challenges

At the same time, there are some challenges to FDI in Cambodia, where the government has implemented a deep reform. Those challenges include a shortage of skilled labor, limited raw materials for production, high costs of energy and logistics, as well as trade and business facilitation. In response to these concerns, the government has established a new investment law to provide incentives and protection to attract more foreign investments.⁹

Liberalization has played a significant role in improving the Cambodian economy. However, red tape remains a main challenge to doing business in the country as cited by the private sector.¹⁰ The representative of the Cambodia Food Manufacture Association (CFMA), mentioned that the process of putting one product on sale requires a pre-sale check, testing, quality control, and certificates from different ministries involved. If the government agencies have the same job and the same responsibility, it puts more burden on the processes of fulfilling the requirements of local small and medium enterprises (SMEs). Hence, the representative requested a reduction in government red tape.¹¹

The linkage of digital government to trade facilitation is also crucial for national economic development and welfare, especially for small, open economies whose economic prosperity is highly dependent on the health of the world economy. This would be one of the benefits of digital government for FDI as well.

8 Al-Sadiq Ali J. "The Role of E-Government in Promoting Foreign Direct Investment "Inflows. *IMF Working Paper*, 16 (141), doi:10.5089/9781513566795.001

9 Vanyuth Chea. Reforms aimed at overcoming FDI challenges, *KhmerTimes*. April 10, 2023. <https://www.khmertimeskh.com/501270538/reforms-aimed-at-overcoming-fdi-challenges/>

10 Rijksdienst voor Ondernemend Nederland. Doing business in Cambodia. January 2019. <https://www.rvo.nl/sites/default/files/2019/01/doing-business-in-cambodia.pdf>

11 Sok Chan. SME chief complains of excessive red tape, *KhmerTimes*. June 11, 2020. <https://www.khmertimeskh.com/50732781/sme-chief-complains-of-excessive-red-tape/>

The advantages of digital government shifts, which operate online and act as a one-stop portal, can be substantial, particularly for nations with high levels of bureaucratic procedures and inefficiency. Considering how important digital government is to FDI flows, as was previously mentioned, it is clear that there is no policy in place to encourage FDI. “Is the government focusing enough on the benefits of digital government in facilitating FDI flow?” is the issue as a result.

The Gap of Policy Implementation

In response to many existing challenges to FDI flow, the government has taken steps through adopting several policies and laws to encourage FDI. However, the digital government strategy (2022-2035) should be enhanced to promote FDI. Based on this policy, digital government is crucial to the modernization and integration of government management systems to improve public services. This requires a government approach in all ministries and institutions to build a digital government based on five levels. (1) The first level of focus is e-government, to conduct the digital information system for information and services online. (2) The second level is open government data to ensure accountability and transparency by using digital information systems. (3) The third level is essentially about the collection, use, and analysis of data in a data-centric government. (4) The fourth level focuses on the transformation of ministries and institutions to be fully digitalized, aiming for outstanding use, management, and protection of service delivery. (5) The last level is more about smart government, which focuses on the use of collection and data analysis as principles for decision-making in solving any problems (digital government, 2021–2025).¹² According to the positive effect of digital government, it ignores the emphasis on how digital government can facilitate FDI flows. Based on the guidelines stated in the Cambodian Digital Economy and Society Framework, to achieve the vision and objectives of building a digital economy, one of the five main guidelines is known as building a digital government by promoting digital public services to be better, faster, and with less spending. This group also focuses on strengthening data-based governance to bridge investment gaps and streamline public service delivery in the digital era (Cambodia Digital Economy and Society Policy Framework, 2021–2025).¹³

Policy Recommendations

To obtain an effective strategy to facilitate FDI flows, the digital government should be integrated into the strategies of attracting foreign direct investment. The government should consider the following policy recommendations:

Enhancing Capability of Government Officials

Implement plans to strengthen the capability of government service regarding documents as well as procedures. The Ministry of Economics has already implemented the online register for the company, which would be beneficial to the FDI flow facility. However, if government officials are not well prepared for the new technical tool, it can create more problems. Hence, ensuring the capability of digital government officials would be an effective way to ensure FDI flows. By doing so, it needs to implement digital training in specific periods to strengthen government officials’ capability to materialize a digital government.

12 Royal Government of Cambodia, “CAMBODIA DIGITAL GOVERNMENT POLICY 2022-203”, p.2, Ministry of Post and Telecommunications January 2022. https://asset.cambodia.gov.kh/mptc/media/Cambodia_Digital_Government_Policy_2022_2035_English.pdf

13 Royal Government of Cambodia, “CAMBODIA DIGITAL ECONOMY AND SOCIETY POLICY FRAMEWORK 2021 - 2035”, p.21, Supreme National Economic Council May, 2021. <https://data.opendevdevelopmentcambodia.net/en/dataset/8b25e8a7-ceb5-4659-b96f-9f66d1915a31/resource/b543c324-e2da-4f8c-84c1-64c636dad260/download/digital-economy-and-society-framework-english.pdf>

Needing a New Digital Government-Economic Framework

Establish another new framework that links the digital government to the Cambodian digital economy. By doing that, the framework will provide a clear-cut on the significant role of digital government in facilitating FDI flows. In addition to that, the engagement from different ministries involved to ensure that the framework can succeed is crucial. This new framework should also build on lessons learned from e-Estonia X-Road, where almost 99% of public services are available online 24 hours a day. By using Estonia, it offers a service that relies on the efficient use of data and proactive service delivery. Hence, this strategy might keep the government working seamlessly 24/7 since there is efficient use of ICT in state administration.¹⁴ This mechanism would be crucial to overcoming red tape in FDI inflows since it identifies data, secures data exchange, and provides high-quality databases.

Deepening Reform of Administrative Procedure

Continue to reform the administrative procedure by bringing the challenges cited by foreign investors to the forefront of the domestic agenda and provide information about investment available online. Taking this action, we can continue to enhance the digital government to meet its obligation to encourage Foreign Direct Investment (FDI) Lessons learned from Viet Nam's Projects 30 and Doi Moi should be taken into consideration. Simply put, Vietnam approaches the complex administrative procedure in investment by implementing doi moi as administrative reform. Similarly, "Project 30" creates a simpler, more efficient, and more transparent administration system¹⁵ This exactly shows a smart way to tackle the barrier of investment response to the need to attract more investment.

Conclusion

The Cambodian government's effort in implementing digital government (2022-2035) has impacted and continues to impact Cambodian society in every aspect. However, considering the huge benefit, the digital government potentially plays an even larger role in facilitating foreign direct investment (FDI) inflows. As mentioned, one of the barriers towards foreign FDI remains red tape claimed by the private sector, while the role of digital government has not been in place to facilitate FDI yet. Hence, to shorten the gap in policy implementation and enjoy unlimited economic benefits from the digital government, the linkage of digital government and economics shall be adopted to break the barrier. The new initiative between FDI and digital government must enhance efficiency, accessibility, and transparency in FDI flows that could improve the investment environment and create a competitive advantage for Cambodia's investment.

¹⁴ e-Estonia. <https://e-estonia.com/solutions/e-governance/e-democracy/>.

¹⁵ Schwarz, Matthew. Project 30: A Revolution in Vietnamese Governance? September 14, 2010. <https://www.brookings.edu/articles/project-30-a-revolution-in-vietnamese-governance/>.



Photo: "Integrating early non-communicable disease screening and counseling with COVID-19 vaccinations in Cambodia."
Clinton Health Access

CHAPTER 12

A Digital Approach to Noncommunicable Disease Prevention and Management in Cambodia

Pen Somavattay

Executive Summary

- Noncommunicable diseases (NCDs) are responsible for around 41 million deaths annually, accounting for 74% of the global deaths. In low- and middle-income countries (LMICs), 86% of these premature deaths occur. The NCDs pose significant health and economic challenges, especially in developing countries like Cambodia where they account for almost half of all deaths and hinder economic growth and poverty eradication efforts.
- In Cambodia, cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes are the most prevalent NCDs. In 2018, non-communicable diseases (NCDs) were responsible for 64% of all deaths in Cambodia. Nearly one in four Cambodians (23%) dies prematurely, before reaching the age of 70, due to one of the four major types of NCDs. This trend is expected to rise, necessitating urgent preventive and control measures.
- The Royal Government of Cambodia (RGC) has introduced the National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2018-2027. This policy emphasizes prevention, risk factor reduction, and intersectoral collaboration. Key measures include increasing taxes on tobacco and alcohol, reducing salt in foods, and educating students about healthy habits to prevent chronic diseases.
- Digital technologies, including mobile health applications (mHealth) and telemedicine, offer promising solutions for managing the NCDs. Mobile health applications can disseminate information on the NCD risk factors, provide reminders for medication and check-ups, and facilitate remote consultations. Leveraging digital tools can enhance healthcare accessibility, promote healthier behaviours, and empower individuals to manage their health more effectively, particularly in remote and underserved areas.

Introduction

Noncommunicable diseases (NCDs), also known as chronic diseases, kill approximately 41 million people each year, equivalent to 74% of all deaths globally. Of these premature deaths, 86% are estimated to occur in low- and middle-income countries (LMICs). Children, adults, and the elderly are all vulnerable to the risk factors contributing to the NCDs, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke, or the harmful use of alcohol or air pollution.¹

Likewise, Cambodia has significantly faced the burden of the NCDs. In 2018, the NCDs accounted for 64% of all deaths in Cambodia. The NCDs are not only a severe health problem but also a major challenge to development, which undermines Cambodia's economic growth and the government's efforts to eradicate poverty. Most Cambodian people are facing four main NCDs, such as cardiovascular diseases (stroke and heart disease), cancer, chronic respiratory diseases, and diabetes. In fact, 23% of all premature deaths in Cambodia are attributed to the NCDs meaning that one in every four Cambodians die before the age of 70 years.²

To address the future burden of the NCDs, Cambodia must prioritize prevention and control measures, focusing on monitoring their rate and risk factors. Strategies should include surveillance, health promotion, primary prevention, effective management, and healthcare, targeting common risk factors for maximum impact at a minimal cost.³

1 'Noncommunicable diseases', *World Health Organization*, 2023, <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>

2 Alexey Kulikov et al., "Prevention and Control of Noncommunicable Diseases in Cambodia: The Case for Investment," The United Nations Interagency Task Force on the Prevention and Control of Noncommunicable Diseases, WHO Regional Office for the Western Pacific, and United Nations Development Programme (2019).

3 Sascha Kraus et al., "Digital Transformation in Healthcare: Analyzing the Current State-of-research," *Journal of Business Research* 123 (February 1, 2021): 557–67, <https://doi.org/10.1016/j.jbusres.2020.10.030>.

Causes of the NCDs

The World Health Organization (WHO) estimates that by 2020, the NCDs accounted for 80% of the global burden of disease, leading to seven out of ten deaths in developing countries, nearly half of which occur before age 70. According to the WHO, it is estimated that the global burden of the NCDs will increase by 17% in the next ten years. Almost half of all deaths in Asia are now attributable to the NCDs, accounting for 47% of the global challenge of disease. Based on the same WHO report, over 80% of cardiovascular and diabetes deaths, 90% of chronic respiratory disease deaths, and 66.7% of cancer deaths occur in developing countries. The transition from infectious diseases to the NCDs in the LMICs has been driven by a number of important factors. The NCDs are rising due to economic changes. People are eating more processed foods that are high in fat, salt, and sugar, a decrease in physical activity, and adopting habits like tobacco use among women. The impact of globalization and urbanization in the LMICs has accelerated the growing burden of NCDs.⁴

Addressing the growing issue of the NCDs, the RGC has outlined a new policy on public health called the National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2018-2027 (NMAP-NCD 2018-2027) of the Ministry of Health. The policy focuses on two main components, such as the prevention of more Cambodian people from developing the NCDs and reducing the severity of the NCD patients to prevent them from being people with disabilities and premature deaths. To succeed in the implementation of the policy, inter-ministerial and intersectoral collaboration is required. Many line ministries have worked closely to prevent and control the growing NCDs by reducing risk factors such as tobacco use, harmful use of alcohol, unhealthy diet, and physical inactivity. According to NMAP-NCD 2018-2027, tobacco and alcohol taxes were raised to reduce overuse, lower salt in common foods, and teach students in school about healthy habits to prevent chronic diseases.⁵ According to the WHO, excessive use of tobacco accounts for 7.2 million deaths every year; harmful use of alcohol causes over half of the 3.3 million annual deaths; excess intake of salt is attributed to 4.1 million annual deaths; and physical inactivity is blamed for 1.6 million annual deaths.⁶

Discussion

Taking care of the NCDs in a large group of people is tricky since patients with chronic conditions require constant check-ups and ongoing treatment. Traditional doctor visits might not be easy for everyone, especially in rural areas. Many things can get in the way of timely diagnosis and treatment, such as long distances to clinics, trouble getting rides, a lack of knowledge about available healthcare, and the cost of care itself. Cambodia needs new ways to make sure everyone who needs treatment for the NCDs can get it easily and affordably. Furthermore, chronic diseases can also take a toll on people's mental and physical health. Helping patients and their caregivers take charge of their health can improve their well-being by getting them involved in their care and following the best treatment plans available in their communities.⁷

Nowadays, people use cell phones and tablets to find health information more than ever. Text messaging is the most popular way to share this information on mobile phones. Studies have shown that text messaging (SMS) is the most common technology used to manage NCDs through mobile

4 Sheikh Mohammed Shariful Islam et al., "Non-Communicable Diseases (NCDs) in Developing Countries: A Symposium Report," *Globalization and Health* 10, no. 1 December 1, 2014, <https://doi.org/10.1186/s12992-014-0081-9>.

5 Ibid.

6 Siddique Latif et al., "Mobile Technologies for Managing Non-Communicable Diseases in Developing Countries," in *Advances in Wireless Technologies and Telecommunication Book Series*, 2018, 261–87, <https://doi.org/10.4018/978-1-5225-5270-3.ch011>.

7 Mahbub Hossain et al., "Digital Interventions for People Living With Non-communicable Diseases in India: A Systematic Review of Intervention Studies and Recommendations for Future Research and Development," *Digital Health* 5 (January 1, 2019): 205520761989615, <https://doi.org/10.1177/2055207619896153>.

health (mHealth) programs. These programs can also include regular calls or even involve interactive features that respond to patients' replies. With the rapid adoption of mobile devices, mHealth offers the potential to transform healthcare delivery.⁸

Cambodia has seen a significant rise in mobile phone and internet access. Nearly half (48%) of Cambodians now own a smartphone, which is a massive increase from 2013. Back then, smartphone ownership was much higher in cities (60%) compared to rural areas (42%). Interestingly, in 2017, the number of mobile phone subscriptions (19 million) was even higher than the population (around 16 million) and more than double the number of internet users (8.5 million).⁹ With the growing use of mobile phones and the internet, Cambodia presents an opportunity to leverage mHealth initiatives to raise public awareness about the NCDs and empower individuals to manage their health more effectively. Mobile phones are a game-changer for healthcare in developing countries due to their features and affordability. Unlike some technologies, they work for both literate and illiterate populations. Simple tools like text messages and pre-recorded voice messaging are perfect for sending medication reminders or appointment alerts. Mobile health applications (mHealth) make it possible for people to receive real-time feedback on their health, get automatic reminders, and benefit from healthcare systems that are more accessible, even in remote areas.¹⁰

With the growing trend towards smart cities, an effective smart healthcare system will bring citizens a healthier life. 80% of the NCDs are preventable. Even if someone develops an NCD, they can still live a healthy and productive life with the proper support. This involves a combination of care from primary healthcare providers and individuals actively managing their own health.¹¹ Early detection and timely treatment of chronic diseases play a crucial role in reducing the severity of the NCD patients and preventing them from becoming people with disabilities and premature deaths.

Despite extensive efforts, the RGC must take additional measures to prevent the further escalation of the NCDs, which could lead to increased morbidity and mortality among the Cambodian population. The RGC should consider leveraging digital technology in the healthcare system to enhance the possibility of managing the NCDs more effectively.

Digitalization has been a global trend, especially at the dawn of the Fourth Industrial Revolution (IR4.0). Many countries have recognized digitalization as an asset for sustainable development. Governments and businesses worldwide are increasingly adopting digital technologies to enhance efficiency, improve public services, and promote economic growth. Digital technology can also be very beneficial to the healthcare system.

It is inevitable that technology will be utilized to address any challenges within its scope. The use of information and communications technologies (ICT) to improve human health, healthcare services, and wellness for individuals and across populations is revolutionizing the medical field. Telemedicine and mobile health applications (mHealth) are just two examples of how digital tools are making healthcare more accessible and efficient. These technologies enable remote patient monitoring, real-time data sharing among healthcare professionals, and personalized treatment plans, which can lead to better health outcomes and lower healthcare costs. Additionally, digital

8 Surahyo Sumarsono et al., "Development of a Mobile Health Infrastructure for Non-communicable Diseases Using Design Science Research Method: A Case Study," *Journal of Ambient Intelligence & Humanized Computing/Journal of Ambient Intelligence and Humanized Computing* 14, no. 9 (July 30, 2022): 12563–74, <https://doi.org/10.1007/s12652-022-04322-w>.

9 Riccardo Corrado and Patchanee Tungjan, "How Digital Tech Can Help Fix Cambodia's Broken Education and Healthcare Systems," *ResearchGate* 2, (2019): 20-39.

10 Mechael, Patricia N. "The case for mHealth in developing countries." *Innovations: Technology, Governance, Globalization* 4, no. 1 (2009): 103-118.

11 Ibid.

health innovations can empower patients to take a more active role in managing their health and foster a more collaborative relationship between patients and healthcare providers.

Policy Recommendations

Telemedicine

Telemedicine allows patients in remote or underserved areas to consult with specialists without the need to travel through video conferencing, phone calls, and other communication tools.¹² It allows people in remote areas or with mobility issues to receive immediate care from specialists, even if they're not nearby the hospital. This is particularly beneficial for individuals with chronic conditions requiring regular follow-ups. It allows doctors to consult with patients who cannot come in for regular visits. Additionally, healthcare providers can also reach a larger population, including those who might not seek care due to distance or mobility issues. In the LMICs, telemedicine can make it easier for people to get basic healthcare. Many things can make it hard to see a doctor in these countries, such as lack of transportation, crowded clinics, and the insufficient number of healthcare workers.¹³ A major benefit of telemedicine is that it makes healthcare more accessible by letting people get treatment from the comfort of their own homes.

Mobile Health (mHealth) Applications

The NCD patients are predominantly found in developing countries, where a significant portion of the population often lacks healthcare education. mHealth can be a useful tool to tackle this problem. The government should implement mHealth to help spread awareness about the risk factors of the NCDs through communication tools that are built into mobile phones including short message services (SMS) and pre-recorded voice messages. These tools can provide valuable information on lifestyle changes, early warning signs, and preventive measures. Additionally, mHealth can facilitate regular reminders for check-ups and medication adherence, empowering patients to take proactive steps in managing their health. By leveraging mobile technology, the government can reach more audiences, promote healthier behaviours, and reduce the burden of the NCDs in the country.

Conclusion

The rise in NCDs brings serious health risks to individuals, families, and communities, placing immense strain on healthcare systems. Cambodia's high burden of NCDs, such as heart disease, cancer, and diabetes, contribute to premature deaths and economic challenges. The Cambodian government is addressing this through NMAP-NCD 2018-2027 focusing on prevention, health education, and policy measures like taxing tobacco and alcohol. With rising mobile phone access, mHealth and telemedicine are promising tools to enhance healthcare access, especially in remote areas. These digital solutions can improve public awareness, support chronic disease management, and make healthcare more accessible, helping Cambodia better manage the growing NCD crisis.

12 Fatema Habbash et al., "Telemedicine in Non-communicable Chronic Diseases Care During the COVID-19 Pandemic: Exploring Patients' Perspectives," *Frontiers in Public Health* 11 (September 25, 2023), <https://doi.org/10.3389/fpubh.2023.1270069>.

13 Michael Hoffer-Hawlik et al., "Telemedicine Interventions for Hypertension Management in Low- and Middle-income Countries: A Scoping Review," *PloS One* 16, no. 7 (July 9, 2021): e0254222, <https://doi.org/10.1371/journal.pone.0254222>.

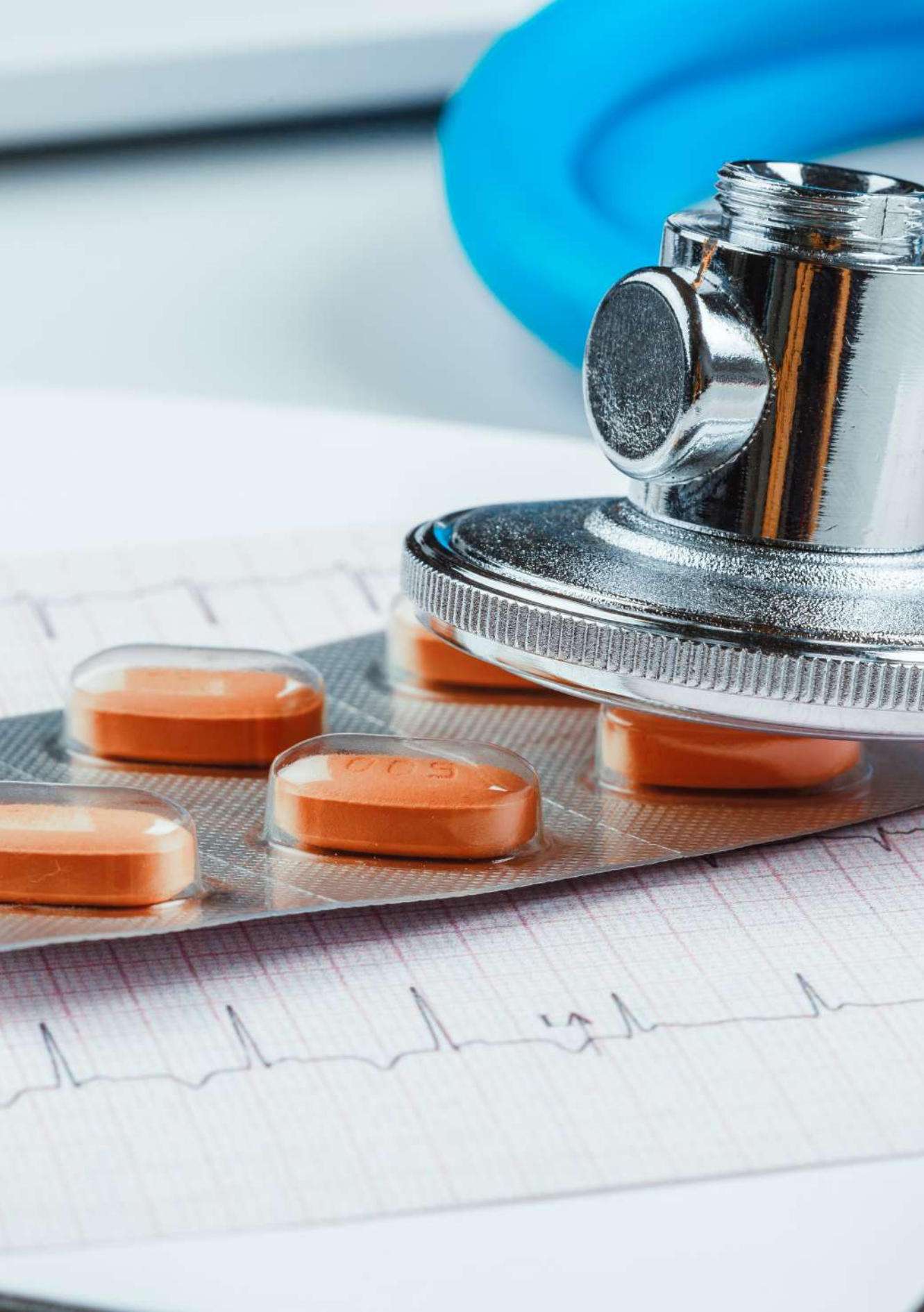




Photo: Royal University of Phnom Penh, RUPP

CHAPTER 13

Improving E-Learning for Higher Education in Cambodia

Hean Sinal

Executive Summary

- This policy brief discusses how to improve e-learning for higher education in Cambodia. It outlines Cambodia's goals of becoming an upper-middle income country by 2030, which requires the strengthening of its education sector. While the higher education enrollment has increased substantially in recent years, education quality and competitiveness remain important issues according to the global rankings.
- The COVID-19 pandemic disrupted traditional education models and highlighted the need for e-learning and beyond. However, Cambodia has faced several barriers to effective e-learning implementation. There is currently no comprehensive national e-learning policy for higher education. Universities also lack proper technologies, internet access, and faculty training capacity for quality online instruction. Besides, many students have inadequate access to digital learning materials.
- The Ministry of Education, Youth, and Sport (MoEYS) has acknowledged these problems and introduced policy frameworks such as the Education Strategic Plan and Cambodia Education 2030 Roadmap. However, further actions are needed to fully realize the benefits of e-learning.
- Key recommendations include developing an e-learning policy with standards and guidelines. Investments are also needed to assess and address gaps in readiness. Universities must enhance faculty digital skills through training and ensure students can access e-libraries. With a coordinated approach addressing these challenges, e-learning can help improve higher education standards in support of Cambodia's national development goals.

Introduction

Cambodia is set to achieve an upper middle-income status by 2030 and to become a high income country by 2050. In addition, the Royal Government of Cambodia's (RGC) vision is to modernize and transform Cambodia's industrial structure from a labor-intensive industry into a skill-driven industry by 2025.¹ However, to achieve this objective, the government must enhance leadership institutions at all levels, as well as ensure sound policies, practical implementation capacity, results and accountability. Linking to the objective above means that the government must prioritize work, including strengthening government and institutions; improving efficiency and capacity; supporting economic growth and modernization; creating quality jobs; encouraging private sector development and entrepreneurship; enhancing education, health, and services; promoting social protection and welfare; focusing on environmental sustainability and climate change; and advancing digital transformation in social and economic areas.²

Therefore, to bridge the gap and fulfill priority work, education is one of the vital sectors contributing to the realization of Cambodia Vision 2050. Additionally, education plays an indispensable role in building human capital to meet the needs of a competitive job market in terms of both quality and quantity.

1 The Royal Government of Cambodia, *Cambodia's Education 2030 Roadmap Sustainable Development Goal-4*, Phnom Penh: MoEYS, 2019.

2 The Royal Government of Cambodia, *Pentagonal strategy Phase I*, Phnom Penh: The Royal Government of Cambodia, 2023.

Overview on Higher Education in Cambodia

The higher education sector in Cambodia has experienced notable growth and transformation in recent years. According to data from the Ministry of Education, Youth and Sport (MoEYS), enrolment in Cambodian higher education institutions grew from around 177,000 students in 2012 to over 250,000 students by 2022.³ This represents a 41% increase in enrolment over the 10-year period, driven by increased government investment and international collaboration. Educational institutions have expanded their programs and facilities, aiming to provide more diverse and comprehensive education to meet the demands of a rapidly evolving job market.

Compared to the past two decades, Cambodia's higher education and training performance have seen some improvements, but it still faces key challenges in global competitiveness. According to the Global Competitiveness Report by the World Economic Forum, Cambodia was ranked 124th out of 137 countries in the higher education and training pillar in 2018. And compared to the region Cambodia's higher education sector still lags behind many of its regional peers in terms of the global recognition and quality. This indicates that the education sector in Cambodia requires substantial investment and improvements in quality. Given the substantial growth in higher education enrollment and the ongoing challenges in maintaining quality and competitiveness, integrating e-learning into Cambodia's higher education system presents a compelling opportunity. The important question arises: why should the government integrate e-learning into the education system?

The integration aligns Cambodia with the global technological trends. For example, the COVID-19 pandemic has profoundly impacted higher education worldwide, and Cambodia is no exception. Although the COVID-19 pandemic has caused significant disruptions and challenges, it has also presented an unprecedented chance to accelerate digital transformation initiatives within the education sector, particularly higher education.⁴ During the COVID-19 period, the traditional education system in Cambodia has undergone a significant transformation, with e-learning emerging as a powerful tool for higher education. The COVID-19 pandemic has also further emphasized the need for e-learning, as traditional classroom learning is no longer a viable option.

Even though the pandemic has passed, e-learning remains important as the higher education population continues to grow each year. The shortage of physical classrooms will be a problem in meeting the growing number of students. As Cambodia has embraced the Industrial Revolution 4.0, integrating online classes into the education system should be well-functioning and implemented. These are the benefits of integrating E-learning into the education system. E-learning offers several benefits that traditional classroom learning cannot. Firstly, it allows students to access learning materials from anywhere and at any time, making education more flexible and convenient. Secondly, e-learning offers a more personalized learning experience, allowing students to learn at their own pace and according to their individual learning styles. Thirdly, e-learning provides a more cost-effective solution for higher education as it eliminates the need for expensive infrastructure, such as classrooms and textbooks. E-learning platforms offer scalable, flexible, and cost-effective solutions that can help bridge the gaps in educational resources and infrastructure.

By leveraging digital technologies, educational institutions can provide access to a wider range of courses and learning materials, facilitate continuous professional development for faculty, and foster a more interactive and personalized learning experience for students. Additionally, e-learning can play a critical role in addressing the disparities between urban and rural education, ensuring

3 The Royal Government of Cambodia, *Public Education Statistics & Indicators 2021-2022*, Phnom Penh: MoEYS, 2022.

4 Kimkong Heng and Koemhong Sol, *COVID-19 and Cambodian Higher Education: Challenges and Opportunities* (Cambodian Education Forum, 2021), 31-48.

that all students, regardless of their geographical location, have access to quality education. This moves toward digital education will not only enhance the overall quality of higher education, but also better align with the demands of a rapidly emerging job market, ultimately contributing to the initiative from the government to build e-government to improve the people's quality of life and build trust among the people through better public service provision.⁵ However, integrating and implementing e-learning in higher education will face some challenges. Therefore, this policy brief will discuss three main issues and its solutions to improve e-learning in Cambodia.

There is a lack of a nationwide e-learning policy, particularly for higher education. Additionally, there are gaps in e-learning readiness and quality. Many universities lack the necessary technological resources, internet connectivity, and faculty training to effectively deliver high-quality online or distance education and limited access to e-libraries. Numerous studies have indicated that technical and accessibility issues are significant obstacles preventing students from fully and effectively participating in their online classes. Nevertheless, the government, especially the MoEYS, has been working hard and taking serious action to tackle the problems to improve higher education in Cambodia. The Ministry of Education, Youth and Sport (MoEYS) is dedicated to its primary goal of improving the quality of education, science, and technology.⁶ In response to global demands and recognizing the need to transform the education sector, the MoEYS has initiated the development of the Cambodia Education 2030 Roadmap. The Roadmap of Cambodia Sustainable Development Goal 4 of Quality Education. Cambodia has adopted the sustainable Development Goal (SGD 4), one among the 17 SDGs as well. Moreover, the MoEYS has prepared a number of policies to support the development of the Cambodia education sector such as teacher policy, new curriculum framework, higher education master plan, education strategy plan (2019-2023), and technical working group. According to the National Policy on Lifelong Learning, Article 66 of the Constitution highlights the core principles of the education system and states the right to education, stating "The state shall establish a comprehensive and standardized educational system throughout the country that shall guarantee the principles of educational freedom and equality to ensure that all citizens have equal opportunity to earn a living."⁷ And the Education Strategic Plan (ESP) for the period 2014-2018 is designed as a further step in putting in place the necessary human resources and infrastructure to contribute to the achievement of these national vision and goals to build a quality higher education system that develops human resources with excellent knowledge, skills, and moral values in order to work and live within the era of globalization and knowledge-based society.⁸ Even though the MoEYS has implemented several policies and action plans, the need for enhancement of e-learning still needs to be improved and more efforts are required.

Policy Recommendations

Establishment of the National E-Learning Policy for Higher Education

The Cambodian government, through the MoEYS, should develop and implement a comprehensive national e-learning policy for the higher education sector. This policy should provide a clear framework, guidelines, and quality standards for the integration and delivery of e-learning programs across universities in the country.

5 The Royal Government of Cambodia, *Cambodia Digital Government Policy 2022-2035*, Phnom Penh: Ministry of Post and Telecommunications, 2022.

6 The Royal Government of Cambodia, *Education Strategy Plan 2019-2023*, Phnom Penh: MoEYS, 2019.

7 The Royal Government of Cambodia, *National Policy on Lifelong Learning*, Phnom Penh: MoEYS, 2019.

8 The Royal Government of Cambodia, *Education Strategic Plan 2019-2023*, Phnom Penh: MoEYS, 2019.

Addressing Gaps in E-Learning Readiness and Quality

The government and higher education institutions should conduct comprehensive assessments to identify gaps in e-learning readiness, including technological infrastructure, faculty digital competencies, and student access to digital resources. Based on the findings, targeted investments and capacity-building programs should be implemented to enhance the overall e-learning readiness and quality across the higher education system.⁹

Enhancing Faculty Training and E-Library Access

Higher education institutions should develop and implement comprehensive faculty training programs to enhance their digital competencies and pedagogical skills for effective online or distance education delivery. Additionally, universities should ensure that students have equitable access to e-libraries and digital learning resources to support their academic pursuits.¹⁰

Conclusion

Cambodia's higher education system has seen significant growth in enrollment in recent years, but it has faced challenges in maintaining quality and global competitiveness. Integrating e-learning into the higher education system presents a compelling opportunity to address these issues. E-learning offers numerous benefits, including increased flexibility and accessibility, personalized learning experiences, and cost-effectiveness. However, the successful implementation of e-learning in Cambodian higher education will require addressing several key challenges. Foremost is the lack of a comprehensive nationwide e-learning policy, particularly for the higher education sector. Additionally, there are gaps in e-learning readiness and quality, with many universities lacking the necessary technological resources, internet connectivity, and faculty training to effectively deliver high-quality online or distance education.

The MoEYS has recognized these challenges and has taken steps to improve the higher education system, such as developing policy frameworks like the Education Strategic Plan and the Cambodia Education 2030 Roadmap. These efforts demonstrate the government's commitment to enhancing the quality of education and aligning it with the country's goals of becoming an upper-middle-income country by 2030. To fully leverage the benefits of e-learning in Cambodian higher education, a comprehensive and coordinated approach is required. This involves the establishment of a clear e-learning policy, investment in technological infrastructure and faculty training, and the development of digital learning resources and platforms. By addressing these key issues, Cambodia can effectively integrate e-learning into its higher education system, ultimately strengthening the quality of education and better preparing students for the demands of the evolving job market.

9 The World Bank Education Global Practice, *Guidance Note: Remote Learning & COVID-19* (World Bank, 2020).

10 UNESCO, *UNESCO ICT Competency Framework for Teachers* (UNESCO, 2018).

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ADENAUER YOUNG SCHOLARS
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SPECIAL LECTURE

*Human Capital Development
Toward Cambodia Vision 2050*

March 2024
The Royal, Phnom Penh,

BAFFLES
University of Cambodia

Photo: AYSE Special Lecture on Human Capital Development: Toward Cambodia Vision 2050 by H.E. Dr. Hangchuan Naron, 29 March 2024. KAS Cambodia



Photo: Siem Reap International Airport

CHAPTER 14

Crossing Boundaries: Navigating the Future of Passports in the Digital Age

Tip Oussa

Executive Summary

- The passport registration system in Cambodia is characterized by its costliness and inefficiency. The Royal Government of Cambodia (RGC) has been utilizing the promises of e-government to eliminate these barriers and has undertaken firstly the Rectangular Strategy-Phase IV in 2018, the Pentagonal Strategy-Phase I (2023-2050), and the Cambodia Digital Government Policy (2022-2035).
- The RGC should consider having one unified website to host all available e-services with a section on e-passport services to avoid confusion.
- To promote online passport registration, users need to be incentivized by reducing the cost of registering online cheaper than registering at the passport office. Following the ABA model of video advertisements and also incentivizing influencers to use the online service, the Ministry of Interior would do well to adopt this model to reach a wider audience.
- A bottom-up approach also needs to be implemented to educate citizens on how to use the online passport registration system. Additionally, having an impartial and legitimate third-party to accredit the online passport registration system is also crucial to calm users' doubts and instill trust in accessing the service.

Introduction

On 24 August 2023, Cambodian Prime Minister Hun Manet unveiled the Pentagonal Strategy-Phase I(2023-2025), a policy roadmap to achieve the Cambodia Vision 2050 to become an upper-middle income country by 2030 and a high-income country by 2050.¹ The strategy points out five priorities to reach this ambitious goal, including People, Road, Water, Electricity and Technology. The need for digitalization across all public sectors is not an alien concept to Cambodia. The first official step was taken through the introduction of the Rectangular Strategy-Phase IV in 2018.² Four years later, the Royal Government of Cambodia (RGC) launched the Cambodia Digital Government Policy (2022-2035), a 76-page long policy document prepared by the Ministry of Post and Telecommunications.³ This policy framework highlights what needs to be done in order to establish a digital government to improve people's quality of life and enhance public's trust through better public services. Out of the many important and prioritized public services that need to be digitized, the policy document stresses the importance of digitizing the passport registration process.⁴

Context

An efficient digital passport registration system is crucial for the RGC to achieve a robust digital government and digital citizens. In our globalized world, people move back and forth, crossing from one boundary to another. Thus, having a passport serves as an intermediary to make this possible.

Policy Critique

The former Minister of Interior, Sar Kheng, has expressed his consideration to lowering the costs of passport fees.⁵ Echoing this concern, Sar Sokha, who is the current Minister of Interior, has expressed

1 Panha Heng, "Pentagonal Strategy-Phase I Focuses on Five Key Priorities" *Ministry of Information*. August 24, 2023, Pentagonal Strategy-Phase I Focuses on Five Key Priorities - ព្រឹត្តិស្នងដំណើរការ (information.gov.kh).

2 Council for the Development of Cambodia, *Rectangular Strategy Phase IV*, September 2018, p. 30.

3 Ministry of Post and Telecommunications, *CAMBODIA DIGITAL GOVERNMENT POLICY 2022-2035*, January, 2022.

4 Ibid., 57.

5 "Ministry May Lower Passport Fees due to Public Dissatisfaction." 2023. Phnom Penh Post 2023. <https://www.phnompenhpost.com/national/ministry-may-lower-passport-fees-due-public-dissatisfaction>.

his discontent for the current passport registration fees and decided to call for officials who are part of his ministry to work on lowering the passport registration fees.⁶ This is no mere exaggeration as the passport fees in Cambodia are high compared to neighboring countries. For people aged six and above, the passport fees have three different price points: \$100, \$150, and \$200 with application periods of 15 days, seven working days, and one day, respectively and with a ten-year validity period. Whereas for children below the age of five, the passport fees range from: \$80, \$120, and \$160 with the same application periods mentioned above, respectively with a five-year validity period; for example, the passport fees in Thailand are roughly \$29 with a maximum pickup time of seven days. If we look at Vietnam, its passport fee is only \$8. In addition, as for Singapore, if applicants apply in person at the Immigration and Checkpoints Authority (ICA) or Singapore overseas missions, the passport fee is \$80 regardless of whether the applicant is a child or an adult with processing times of one-two weeks. Insofar as Cambodia is concerned, this puts its passport fees as extortionately high. It is worth noticing that the current level of people's monthly incomes in Thailand⁷, Vietnam⁸, and Singapore⁹ are \$434, \$335, and \$4,813, respectively. Additionally, in Cambodia, there have been whispers of informal payments being widespread in the passport office.¹⁰

For Cambodians living abroad who wish to renew their passports, they would need to return to Cambodia for a renewal. This poses a few problems for them such as flight and time expenses when sometimes they do not necessarily have the luxury of both. The same can be said for Cambodians who are residing in the country. For instance, if they live in Siem Reap province, then they would need to make a trip to Phnom Penh city to get their passport made or renewed.

These issues mentioned collectively cause a rift in citizens' satisfaction of the current passport registration system. For public services offered, citizens are not generally allowed to choose the goods and services they prefer due to the monopoly rights of public sector organizations as public service providers.¹¹ This condition leads to lower trust and loyalty of citizens towards public sector organizations because the government fails to provide quality public services.

Policy Recommendations

Centralizing Digital Registration Platform

Cambodia would certainly benefit from following the international trend of e-government infrastructure which is a platform, portal, or gateway where the spectrum of e-services offered by the government can be accessed.¹² In other words, there needs to be a centralized web portal to access all available e-services, so instead of accessing different X, Y and Z websites, one need only access it through the XYZ website.

6 "Sar Sokha proposes fee reduction for passports" 2023. Khmer Times. 2023. Sar Sokha proposes fee reduction for passports - Khmer Times

7 "Thailand's Monthly Earnings", *CEIC*. Thailand Monthly Earnings, 2001 – 2024 | CEIC Data.

8 "Average monthly salary for paid workers and employees in Vietnam from 4th quarter 2020 to 1st quarter 2024", *Statista*. Vietnam: average monthly salary 2024 | Statista.

9 "Singapore Monthly Earnings", *CEIC*. Singapore Monthly Earnings, 1995 – 2024 | CEIC Data.

10 "To Get a Passport, Cambodians Asked to Pass Cash." 2018. Voice of America. June 29, 2018.<https://www.voacambodia.com/a/to-get-a-passport-cambodians-asked-to-pass-cash/4460114.html>.

11 Chan, Calvin M.L., YiMeng Lau, and Shan L. Pan. 2008. "E-Government Implementation: A Macro Analysis of Singapore's E-Government Initiatives." *Government Information Quarterly* 25 (2): 239–55. <https://doi.org/10.1016/j.giq.2006.04.011>.

12 Chan, Calvin M.L., YiMeng Lau, and Shan L. Pan. 2008. "E-Government Implementation: A Macro Analysis of Singapore's E-Government Initiatives." *Government Information Quarterly* 25 (2): 239–55. <https://doi.org/10.1016/j.giq.2006.04.011>.

Another alternative to consider is the unified XYZ website could serve as a launchpad to redirect users to X, Y or Z website. This could be a more attractive choice for the relevant ministries to consider because there is a deficit in centrality and interoperability of e-government services offered because in the category of passports, one can apply for their diplomatic or official passport on the Ministry of International Affairs and International Cooperation website; as for regular passports, it is provided by the General Department of Identification (GDI) of the Ministry of Interior. Having the XYZ website as a starting point to e-government services will mitigate the hassles and confusion for citizens and will make the process more direct and linear, similar to The Singapore Government Online Portal which is a unified online portal.¹³

An additional step could be taken further by implementing an online passport registration process, which will include features such as registering passports for first-timers, passport renewals, and reports of lost and found cases of passports which will cultivate digital citizens and a digital government.

Lowering Cost of Digital Registration

Registration of passports online needs to be cheaper than in-person registration. This will incentivize more people to use the online service provided, such as in Vietnam where the online passport registration fee is roughly \$1 cheaper and Singapore where it is \$10 cheaper.

Leveraging Public Services

Promotion of e-government services should also be done by following the creative model of ABA video advertisements which raises a lot of awareness amongst citizens of its availability. Furthermore, incentivizing influencers to make videos about the online passport registration service on Facebook, TikTok, or Instagram will be a bonus because it reaches a wider audience.

Diversifying Online Payment

When citizens are registered to get their initial service, different types of payment should be made available to increase people's satisfaction in the service, ranging from ABA Pay, VISA, Mastercard, Wing Pay, etc. This can be done through integrating payment gateway interaction. When registered, they should also be able to pick the time slots available to arrive at the passport department to further increase their satisfaction in the service provided and also to cut back on queue waiting time.

Promoting Public Awareness

Initially, citizens might be reluctant to use this service due to security reasons. Therefore, it is important to construct a system that is robust and free from these doubts. Launching education campaigns at the commune level to address these concerns (through social media for example) and to educate citizens on how to use the available e-passport registration system is as crucial as having an independent and impartial third party to accredit the legitimacy and security of the online passport registration service offered.

13 Ibid.

Conclusion

The Cambodian government has made remarkable strides to achieve digital transformation. This commitment is expressed through the Rectangular Strategy-Phase IV and its successor, the Pentagonal Strategy-Phase I, and the Cambodia Digital Government Policy (2022-2035). To digitize the passport registration system, the RGC should consider having one unified website of available e-government services, of which the online passport registration system is accessible. Additionally, the government needs to take into account the cost reduction of online passport registration and the launching of awareness campaigns to educate people how to properly use the digital platform for their passport registration and renewal.

Departures



Time	To	Flight	Gate	Remarks
08:50	LONDRES-GW			
	Code shared:			
09:00	BARCELONA			
	Code shared:			
09:05	BOGOTA			
	Code shared:			
09:20	HELSINKI			
	Code shared:			
09:25	MELILLA			
	Code shared:			
09:30	BARCELONA			
	Code shared:			
09:40	MARSELLA			
	Code shared:			
09:45	BARCELONA			
	Code shared:			
09:45	BOLONIA			
	Code shared:			
09:55	GINEBRA			
	Code shared:			
10:05	ESTOCOLMO			
	Code shared:			

Time	To	Flight	Gate	Remarks
10:25	CASABLANCA			
	Code shared:			
10:45	PARIS-CDG			
	Code shared:			
10:50	N.YORK-JF			
	Code shared:			
10:55	LONDRES			
	Code shared:			
11:00	BARCELONA			
	Code shared:			
11:00	IBIZA			
	Code shared:			
11:10	ARGENTINA			
	Code shared:			
11:10	DALLAS			
	Code shared:			
11:15	LONDON			
	Code shared:			
11:15	MADRID			
	Code shared:			
11:15	SANTO DOMINGO			
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11:15	SANTO DOMINGO			
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	Code shared:			



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