

CADT

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DIGITAL INSIGHTS FUTURE OF EDUCATION



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Edited by

Melanie GERSTER, Pisal CHANTY

Production

Sereyvoleak DY, Merle Luisa SIECKMANN

Team

Sereivathna BUNNY, Lauren SONG, Lida SOVANN,
Nypolen HENGHANG, Ung Techhong LUY

Cover design

Visal THY

Layout

NOVA Cambodia

Konrad-Adenauer-Stiftung Cambodia
House No. 4, Street 462, Khan Charmkar Mon,
P.O. Box 944, Phnom Penh, Kingdom of Cambodia

Telephone: +855 23 966 176

Email: Office.Phnompenh@kas.de

Website: www.kas.de/cambodia

Facebook: www.facebook.com/kaskambodscha

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CADT

Cambodia Academy of Digital Technology (CADT) is a national research and education institution for Digital Technology and Innovation. Its mission is to provide high-quality higher education and professional training in digital technology to students, professionals, and civil servants who want to excel in the digital economy and society. CADT is the first institution of its kind in Cambodia to focus on research and development in digital technologies that advances knowledge and creates value from digital adoption and transformation. CADT fosters a culture of innovation and entrepreneurship among digital talents and innovators to support academic and socio-economic development.

CADT was established in 2014 as the National Institute of Post, Telecom, and ICT (NIPTICT), a public institution under the Ministry of Post and Telecommunications. In 2021, it transformed into CADT with an expanded mission to support the country's digital transformation agenda and the development of digital economy and society.



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 economic and social development. All programs are conceived and implemented in close cooperation with the Cambodian partners on central and sub-national levels.

DIGITAL INSIGHTS



11/2023

FOREWORD

Dr. Sopheap SENG

President

Cambodia Academy of Digital Technology (CADT)

Jason CHUMTONG

Country Director

Konrad-Adenauer-Stiftung (KAS) Cambodia

Cambodia is in the midst of rapid development. With the ambitious aim of becoming an Upper-Middle-Income Country by 2030 and graduating from Least Developed Country (LDC) status even sooner, Cambodia faces numerous challenges. These goals are attainable only through innovation and diversification, especially considering that the primary economic drivers have been exports, construction, and tourism.

To boost the national competitiveness, Cambodia must prioritize digitalization. In an age where information flows quickly, digital technology integration is essential. A crucial resource is Cambodia's young population, who are increasingly interested in digital technologies. While the COVID-19 pandemic has been a setback, it has also served as a catalyst for digitalization. This year's "Digital Insights: The Future of Education" outlines this emerging landscape.

Learning is no longer limited to traditional classrooms, but the extent to which digital tools can enhance education in Cambodia remains underexplored. This edition, therefore, emphasizes the importance of digital tools and lifelong learning. Science, technology, engineering, and mathematics (STEM) skills are essential for Cambodia's future growth. Moreover, the publication addresses the integration of digital technologies into Cambodia's higher education system. It also touches on challenges that might limit digitalization, particularly in rural areas. Despite these obstacles, digital technologies can improve access to education, support reforms, and drive economic growth, helping Cambodia to transition from LDC status.

As a foreword to this year's Digital Insights, we aim for this publication to act as a catalyst for dialogue and change. It outlines the existing landscape and inspires innovative solutions. The responsibility to address these challenges and opportunities lies not just with a single entity but is a collective task for the government, academia, private sector, and civil society. Together, we can build a more digitally advanced and resilient Cambodia.



Dr. Sopheap SENG

*President
Cambodia Academy of Digital Technology
(CADT)*

Dr. Sopheap SENG is the President of the Cambodia Academy of Digital Technology (CADT), a public research and education institution specialized in digital technology and innovation. Dr. Sopheap is also a lecturer in computer science, he teaches programming, database and data science.

At CADT he is currently directing the efforts to build a digital innovation center to contribute to the development of the digital startup ecosystem in Cambodia. CADT is pursuing deeper public- private cooperation and is trying to create supportive policies for technology entrepreneurship and innovation. CADT is a key player in digital skill development in Cambodia, nurturing digital talent and innovators and is playing an integral role as the country seeks to formulate ground rules for its budding startup and technology sector.



Jason CHUMTONG

*Country Director
Konrad-Adenauer-Stiftung (KAS) Cambodia*

Since June 2023, Mr. Jason Chumtong has been the Country Director of KAS Cambodia which is based in Phnom Penh. Previously, he worked as a Policy Advisor for Artificial Intelligence and also contributed to the supervision of the KAS Fellowship. Jason Chumtong's previous post for the Foundation was at the KAS office in Riga for the Regional Programme Nordic Countries. He completed his bachelor studies in politics and sociology at the Friedrich-Wilhelms-University in Bonn. After a stay abroad in a Buddhist monastery in Thailand, Jason Chumtong completed his Master of Science at the University of Edinburgh. His final thesis in the course "Science and Technology in Society" examined the use of artificial intelligence for autonomous driving.

EDITORIAL NOTES

Melanie GERSTER

Head of Program Department, KAS Cambodia

Pisal CHANTY

Director, Digital & Innovation Policy Research, CADT

Dear readers,

Education is one of the most important investments in our future that we can undertake. Lifelong learning, new technologies, Artificial Intelligence – these buzzwords are all around and affect the world of education just as much as the world of work and our everyday lives.

With the rapid advancement of digitalization in all areas, education can and should not fall behind when it comes to utilizing these tools for the advancement in classrooms, the workplace and all areas of life. On the contrary, for young people to be able to make use of all the possibilities that digitalization brings, they need to be exposed to them at an early stage. This does not only involve access to equipment and facilities which can be a challenge itself, but also refers to the understanding of how to use these tools responsibly, understanding their benefits, chances and limits.

This year's edition is a common project between Konrad-Adenauer-Stiftung (KAS) Cambodia and the Cambodia Academy of Digital Technology (CADT). In order to learn about the Future of Education, especially in the Cambodian context, CADT and KAS bring together researchers and practitioners from a wide range to share their expertise and their analysis when it comes to the adaptation of learning within and beyond the traditional school context. How do teachers, universities and other institutions prepare the students and themselves for the changes that are already underway? How can we support learners along the way and what kind of knowledge needs to be taught when knowledge is available everywhere?

This edition of Digital Insights was compiled to analyze all these topics and shed light on the state of digitalization in the educational system in Cambodia and the region. We are looking at International and Regional Trends to see where this development came from, how the pandemic supported the speedy involvement of digital learning in certain areas and why the continuous investment in this sector is crucial. In the Future of Education

and Lifelong Learning, we are further analyzing the importance of connecting digital learning in and beyond the K12 educational stage and dig deeper into what our teachers and trainers need in order to successfully transfer this knowledge to students and support their development even after they leave the formal education sector. One of the main topics of interest for this year's edition and the world of education will come as no surprise to anyone – the potential of Artificial Intelligence. How is AI used in Cambodia's schools and universities, how can it contribute to spark interest in STEM and what challenges can it pose to the realm of the dissemination of information? Our case studies are taking these questions one step further and show how digitalization is already included throughout Cambodia. Through practical examples and questionnaires, they share best practices and outline the potentials and challenges that the digitalization in education can pose.

We sincerely thank all of our authors and education enthusiasts who have contributed to this year's publication of Digital Insights. To all of our readers: We hope that you enjoy this volume of Digital Insights and we encourage you to embrace the sphere of education and lifelong learning in your own lives!

Let us shape the future of education together.

With best regards,

Melanie Gerster and Pisal Chanty



Melanie GERSTER

Head of Program Department
KAS Cambodia

Melanie Gerster is the Head of the Program Department at Konrad-Adenauer-Foundation Cambodia. Her research focus includes education policies, digitalization and global governance. She is qualified in governance and public policy with a keen interest in education policy programming, multilateral programmatic and administrative implementation along with policy research. Trained as a political scientist, her professional experience has included short-term associations with the United Nations, international conferences (G20, LAC, UNFCCC Conference of Parties, UN SDG Action Campaign Festival), national and local governments as well as the private sector. She holds a B.A. in Political Science and German Philology and an M.A. in Governance and Public Policy.



Pisal CHANTY

Director, Digital & Innovation
Policy Research
CADT

Mr. Chanty Pisal is the Director of Digital and Innovation Policy Research Center of the Cambodia Academy of Digital Technology (CADT). He is also the project coordinator of the Assessing Internet Development in Cambodia using UNESCO Internet Universality Indicators. Prior to this, he also served as Vice Director of the ASEAN ICT Center of the ASEAN Digital Sectoral Body (ADGMIN/ADGSOM) and worked for Ministry of Post and Telecommunications as international cooperation officers in charge of ASEAN, Mekong Cooperation, WTO and trade.

Pisal has played an active role in formulating and providing inputs to digital related policies in Cambodia as well as in ASEAN. He is also a member of the drafting team of the Digital Skill Development Roadmap in Cambodia, commissioned by the Ministry of Post and Telecommunications. Pisal holds master's in public policy specialized in Economic Policy and Policy Analysis from Australian National University, and master's in International Law from University of Paris 8. He conducts research and study on digital economy, digital and internet policy, cybersecurity, ASEAN Law and integration, and public finance.



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Research & Development: There is No Way Out

 *Riccardo CORRADO, Prohim TAM and Audrey LIWAN*

Cambodia experienced an exceptional growth pre-pandemic with its economy having recorded a growth of more than 7% per annum in average, in the period between 2010 and 2019, representing one of the fastest growing economies in the world.¹ Yet, this growth, for the first time since 1994, experienced a slowdown due to the challenges related to COVID-19. The pandemic affected mainly three sectors, namely tourism, manufacturing exports, and construction, which by themselves contributed to more than 70% of the country's growth in 2019.² To limit the impact of the pandemic, the Cambodian authorities promptly acted introducing emergency measures to contain the outbreak while providing fiscal assistance to affected households, workers, and enterprises.³ In roughly two years, the country was able to move ahead with a general re-opening, due to an impressive vaccination campaign accompanied by pragmatic economic policies which have represented pivotal elements to support the Cambodian recovery.⁴ Yet, to make sure that the country can continue on the right growing path, three main challenges should be clearly addressed, as pointed out by Freedman and Menon from the Yusof Ishak Institute (ISEAS): Improving

health surveillance and healthcare capacity, rebalancing the financial sector, and sustaining future growth.⁵

And it is about the last criticality where education plays a fundamental role, together with another essential element: research and development (R&D). There are several studies that pointed out the importance of R&D for countries' sustainable development, mostly to avoid stagnation in their growth, due to their inability to energise and then sustain a dynamic growth at the middle-income stage of their development.⁶ For the case of Cambodia, due to its remarkable economic growth, the Kingdom reached the goal of becoming a lower-middle-income country in 2015, with a pathway set by the Royal Government of Cambodia (RGC) to become an upper-middle-income country by 2030, and a high-income country by 2050.^{7 8} The education system and the R&D ecosystem in Cambodia need to be equipped and ready to prepare the youth to answer to the needs from the job market, aiming to sustain the economic growth envisioned by the RGC. To achieve this, it is important to begin from understanding the current scenario we are in, for then explaining the reason under-

pinning the statement: “R&D, there is no way out”.

The current scenario

It is well recognized that science, technology, engineering, and mathematics (STEM) skills represent the key to support the growth of Cambodia, in an era where digitalization and technological advancement are necessities for the overall development of a society.⁹ This has been already recognized by the Cambodian Ministry of Education, Youth and Sport (MoEYS) who has in fact acknowledged the importance of it for the country and worked toward fostering it. As noted by Kao et al.,¹⁰ “strengthening the quality of education, science and technology education is one of the four strategic rectangles of Rectangular Strategy Phase IV and at the heart of Cambodia’s ambition to achieve higher-middle-income status by 2030 and high-income status by 2050”. The RGC has initiated several projects and initiatives in this regard, with several official documents, policies and frameworks to prepare the Kingdom for this journey.^{11 12}

At this stage, the Cambodian education engine is still struggling to prepare enough equipped professionals to sustain the growth that the Kingdom is experiencing and envisioning. As noticed by Ung et al.¹³ and reported in the Cambodia Industrial Development Policy 2015-2025, the industry sector in the Kingdom still experiences low technological adoption and application, struggling to find talent and skilled labour.

“The skills mismatch and skills gap issues in Cambodia are not new”.¹⁴ Skills mismatch

is used here as an overall term, encompassing various forms of skills that are not adapted to the needs of the market or the area which they are needed in.¹⁵ To address this from the educational perspective, the Ministry of Education, Youth and Sport (MoEYS) incorporated for the first time a tracking system in 2010, intended as a practice of shifting students to programs and educational institutions through a selection based on ability, interest and/or achievements.¹⁶ Specifically, at grade 11, students have been requested to choose between a science track or social science track, which overlap on some aspects, and differentiate on others. Specifically, in both tracks students are expected to study topics such as Khmer literature, a foreign language between English or French, physical education, and mathematics. But where students in the science track focus on other subjects such as earth and environment, physics, chemistry and biology, the students who chose the social science track study subjects related to history, geography, morality and civics, and economy.¹⁷

Additionally, Ung et al. noted a decline in students selecting the science track in Cambodia, with over 80% shifting from scientific high school tracks to non-STEM university majors, in contrast to only 10% of social science track students transitioning to STEM majors.¹⁸ This trend to shift from science track in high school to a non-STEM major in university is even more pronounced when talking about female students, with 94% of those in a scientific track shifting to a non-STEM major for their undergraduate studies.¹⁷ The major reasons influencing the decision to opt out from a career in STEM have been found to be the family pressure and low

performance (D grade) in STEM topics in high school¹⁹, with females usually deciding to switch to other study fields, and specifically preferring business, management, accounting or finance.²⁰ These findings were also supported by Chea and Chea who highlighted that parents, especially mothers, “play a crucial role socially and financially in influencing individuals’ technology readiness”.²¹ Technological readiness refers to the ability of an individual or society to use technology effectively, which includes the skills, knowledge, attitudes, and resources needed to interact with different technologies. While technological readiness is a broad concept that applies to all fields, it is particularly important in STEM fields. In addition to this, Corrado et al.²² also pointed out that the offering of majors at universities is heavily skewed toward undergrad programs in non-STEM fields. This possibly affects the ability of Cambodia to prepare enough skilled professionals to sustain the digital transition of the country, and the plans outlined in the Cambodia Digital Economy and Society Policy Framework 2021-2035.^{23 24}

To ensure that Cambodian high school students can reach an informed decision on their undergraduate studies, the MoEYS developed an university guidebook, illustrating skills provided by universities, and making sure it is distributed annually to high schools.²⁵ Yet, many students still do not really engage with this information, heavily relying on their trust, intuition and emotion, or following their parents’ advice.²⁶ In this regard, Peou remarked how also due to the strong family orientation in Cambodian social life, “deciding what to study at university involves not only individual interests and knowledge, but

also those of the parents and older relatives”.²⁷ The decision process on which major to pursue at university becomes a negotiation process, “involving both the individual and the family, the outcome of which could go either in favour of or against the will of the students”.²⁸ The result is that due to the overall inability of young people and their families to make rational decisions on which field of study to pursue, or simply due to the lack of information supporting their decision-making, the undermining issue of lacking skilled labour in the required fields to support the economic growth is increasing.²⁹

It is in this ecosystem that the country is experiencing a shortage in STEM-skilled labour. The digital transition is causing this shortage. Companies need these skilled workers to adapt to the changing technological landscape. STEM-trained individuals have the skills necessary to handle complex technology, data analysis, innovation, and data-driven decision-making, all of which are essential for digital transformation. Without a sufficient pool of STEM talents/students, companies will find it difficult to stay competitive and harness the benefits of the digital age. In this regard, a study performed across public and private companies highlighted how Cambodian companies realise the importance of the digital transition, with a specific focus on leveraging data for their decision making, yet, they also realise that they are not yet ready for it.³⁰ In this ecosystem, young Cambodians often enter the job market with limited educational levels and unprepared, with more than 40% of young workers lacking sufficient education to perform the task required by their job position.³¹

The efforts

The remarkable economic growth experienced by the Kingdom in the past decades has been characterised by a dependency on foreign direct investment (FDI)-led growth from the labour-intensive industry.³² Cambodia introduced the Industrial Development Policy (2015-2025) in 2015 to shift the economic structure from a low-skilled labour one to one backed up by a skilled and knowledge-based workforce. The policy focuses on transforming and modernizing the industrial sector, increasing the export of non-textile goods, and better regulating small and medium enterprises.³³ To achieve this, the RGC embraced four strategies: (1) attracting more foreign investments and private domestic ones focusing on large industry and enhancing technology transfer; (2) developing and modernising small and medium enterprises; (3) foster the country competitiveness with a revitalised regulatory framework, and (4) boost the “development of human resource, technical training, improvement of industrial relations, development of support infrastructure such as transportation/logistics and information and -information communication system (ICT), supply of electricity and clean water, and public, social and financial services”.³⁴ As a result of the Industrial Development Policy (2015-2025), many strategic documents have been adopted, including “Industrial Development Policy (IDP) 2015-2025, Science, Technology, Engineering & Mathematics (STEM) Education Policy 2016, Small and Medium Enterprises (SMEs) development policy 2017-2021, Technical and Vocational Education and Training (TVET) Policy 2017-2025, Modernized TVET

Strategic Action Plan 2019-2023, Education Strategic Plan 2019-2023, Cambodian Higher Education Roadmap 2030 and Beyond, STI Policy 2020-2030, and Cambodia Digital Economy and Society Policy Framework 2021-2035”.³⁵

Besides these strategic documents, the RGC designed various interventions to promote Science Technology and Innovation (STI), mainly “associated with mentorship, technical assistance, training program, SMEs financing and digital transformation and promotional activities related to STI”.³⁶ For instance, as an implementation unit of the Entrepreneurship Development Fund (EDF), Khmer Enterprise (KE) was created to “mobilize, invest, and manage resources, from all legitimate sources, to support the development of a vibrant entrepreneurial ecosystem and to provide financial and non-financial supports to related entrepreneurial ecosystem builders”.³⁷ In 2019, the SME Bank was created to promote and facilitate SMEs access to finance, and in 2020, Techo Startup Centre (TSC) was transformed into a public administrative institution, with the goal to “nurture startups to grow into successful businesses by enhancing talents, entrepreneurship, and innovation capacities through the well supported programs”.³⁸

Also, the Ministry of Post and Telecommunications (MPTC) supports the digitalization in the country, not only through the improvement of the current telecommunications infrastructure, but also enhancing public awareness, and education in relation to Information Technology (IT). In 2013, the National

Authority for Information and Communication Technology Development (NiDA) was integrated in the MPTC, and the national information infrastructure network is used by ministries and institutions to this day.³⁹ In 2014, the Communication Technology Master Plan of Cambodia 2020 was adopted with the aim of “promoting the development of communication technology and information, and strengthening the development of human capital, internet connectivity, digital security, and public services through electronic systems”.⁴⁰ Furthermore, in 2015, the Law on Telecommunications was promulgated, and in 2016 the Development Policy for Telecommunications, Information and Communication Technology 2020 was introduced, setting out “measures and goals to strengthen the basis of the development of the telecommunications, information and communication technology sectors, digital security, to promote industrial development, and the use of information and communication technology”.⁴¹ In addition, the Kingdom adopted the E-Commerce Law in late 2019, which “determines the authenticity, accuracy, security, and reliability of electronic forms and communications, and the Consumer Protection Law to promote fair competition”.⁴² The MPTC has also been working on the law on cyber security, on personal data protection, along with the National Policy for the development of the digital sector, and the national policy on the prioritisation of cloud-based solutions, called Cloud First Policy. On the other side, the Ministry of Interior has been working on a cybercrime law aiming to make Cambodia a resilient ecosystem against cyberthreats.

But also, along with policies, laws and master plans, campaigns have been initiated and carried out. Specifically, MPTC has initiated and conducted public awareness programs such as the Kit Kou Kon (“Caring for Children”) in collaboration with other institutions, to foster awareness on how to protect children while being online. Also, through MPTC’s regulatory arm, the Telecommunication Regulator of Cambodia (TRC), MPTC has initiated an investigation campaign, specifically for targeting and closing malicious websites and URLs considered dangerous for internet users.⁴³ In June 2023, the MPTC launched a program called Digital Talents, with the goal to empower students from a younger age by introducing them to diverse digital skills, challenging their knowledge, and showcasing their creativity and problem-solving abilities. This is just one of the numerous projects supported financially by the Capacity Building and Research and Development (CBRD) fund, introduced in 2017 by the MPTC with the goal to boost the tech startup ecosystem in Cambodia, and mainly financed by the



telecom operators in the Kingdom. The CBRD fund has been pivotal in supporting financially digital-related projects in the country, enhancing the digital Cambodian ecosystem in the past years.

Finally, to support ICT education and training, the MPTC rebranded and expanded its education arm, previously known as National Institute of Posts, Telecommunications, Information, and Communication Technology (NIPTICT), into the current Cambodia Academy of Digital Technology (CADT),⁴⁴ and developing three subordinate institutes, namely the Institute of Digital Technology, the Institute of Digital Governance, and the Institute of Digital Research and Innovation, highlighting once more the importance of fostering a culture of Research and Development (R&D) for the country.

Research and Development: The key

Following the structural change approach, “economic development is seen as a process where production is shifted increasingly towards activities with greater technological spillovers, increasing returns and higher demand elasticities, in other words, towards higher productivity activities”.⁴⁵ It is in this ecosystem that the middle-income trap emerges, and it can be intended as a situation “where a middle-income country can no longer compete internationally in standardised, labour-intensive commodities because wages are relatively too high, but it can also not compete in higher value-added activities on a broad enough scale because productivity is relatively too low”.⁴⁶ To escape the middle-income trap,

an effective TVET infrastructure⁴⁷, coupled with R&D to boost innovation⁴⁸, is necessary.

Specifically, about R&D, the Organisation for Economic Co-operation and Development (OECD) shows researchers have generally found a positive and statistically significant impact of R&D on productivity and economic growth.⁴⁹ Yet, it was also highlighted how “markets fail to generate sufficiently large incentives for firms to undertake R&D and that firms consequently underinvest in R&D from the social perspective”.⁵⁰ In the paper of Soete et al.,⁵¹ the authors investigated the relations between total factor productivity (TFP) and public and private R&D, together with gross domestic product (GDP) for a pool of 17 OECD countries for the period 1975–2014, using a vector-error-correction model. The result showed a general positive effect of R&D on productivity, with some cases of negative effects, mainly driven by two factors: a “fishing out” effect, and a “creative destruction” one.⁵² The first effect refers to the concept that easier ideas are the ones easier to develop, while the more complicated ones remain undiscovered, thus requiring more R&D efforts. The second effect, creative destructions, refers to the concept that new ideas make older ones obsolete, de facto negatively impacting those who have invested resources on the now-obsolete ideas.⁵³ Additionally, there is another aspect related to who arrives first at the production of an outcome. In fact, those who are capable of arriving first in the development of a product or service, will usually get the majority of the rewards, while the other competitors may lose part of the investments spent on the R&D. Yet, in general the overall findings from the Soete et al.⁵⁴

work showed that “a permanent shock to public R&D suggest that this will increase the growth rate of TFP (and GDP)”, with a “relatively strong effect on productivity of the complementarity between public and private domestic R&D investments: i.e., when the public R&D shock leads to extra private R&D, the effect on productivity is stronger”.

Accounting for the importance of R&D, it can be said that STI infrastructure are the basic component to support and foster an ecosystem of STI, and “Infrastructure is the form of a wide variety of infra-technologies, and associated standards” essential to conduct R&D.⁵⁵ In Cambodia, prior to the establishment of Ministry of Industry, Science, Technology & Innovation (MISTI), the National Science and Technology Council (NSTC) was created in 2014, with its secretariat under the management of the Ministry of Planning (MoP). The NSTC has focussed on enabling “national research and development in an efficient and effective way focusing on the adaptation of acquired technologies to the local context and enhancing capacity to absorb foreign technologies”.⁵⁶ Additionally, the Cambodian ICT Masterplan for 2014-2020 was introduced in 2014, with the vision to lead toward an ‘ICTopia Cambodia’, building the Kingdom as “an intelligent and comfortable nation with intelligent people, intelligent society and intelligent government by ICT”.⁵⁷ In the document, it is clearly outlined how “the vision for the Cambodian ICT R&D sector is to boost national competitiveness through ICT R&D” with the goal to “enhance ICT technological capacity through R&D and to help reinforce national competitiveness” while contributing to “the development of the

ICT industry and economic growth based on national competitiveness strengthened through ICT R&D”.⁵⁸

Yet, even if efforts have been spent, the overall R&D in Cambodia remains very low. Universities are falling short in investing and pursuing research. Peou⁵⁹ highlighted how “with profit-seeking private ‘universities’ mushrooming since 1997” the majority of HEIs are “basically teaching-based institutions, making profits or sustaining themselves through the generation of tuition fees, and the structure of training provided is rather uniform with most providing four-year undergraduate degrees with the exception of medical and engineering programmes and a few private colleges”.⁶⁰ Additionally, the linkage between private sector and HEIs is weak, with a clear disconnection between what HEIs offers, and what private sector needs, something not present only in Cambodia.⁶¹ Furthermore, in the Kingdom, besides the action plans and policies, a major boost toward enhancing digital readiness was placed with the creation of Techo Digital Talent Scholarships, to support students in pursuing their studies in digital-related majors, in leading public or private universities such as Royal University of Phnom Penh, CADT, or the American University of Phnom Penh. Additionally, initiative from private universities in attracting more students, mostly female, to IT-related majors, have been initiated, to enhance the generation of a tech-savvy pool of professionals capable to support the vision of the RGC and thus provide talent to the private and public sector. Yet, at this stage, the threat of having many universities struggling to survive and battling for having enough qualified instructors remains at the horizon.

Finally, it is important to notice that the need to give more traction to the R&D ecosystem in the Kingdom has been outlined by MISTI in the form of a National Research Agenda. Specifically, to comply with the decision of the RGC and “fulfil the assigned tasks successfully, MISTI has developed National Research Agenda 2025 (NRA) which serves as the national strategic document that guides the efforts of line ministries and other key stakeholders toward creating a research ecosystem suitable for the ambitions of Cambodia’s Vision 2030 and 2050”.⁶² In this document, MISTI identified 8 research missions, indicating what should be the main focus of research activities in the country: local food, reliable energy supply, quality education, electronic and mechanical spare parts, cloud-based services, electricity and potable water, carbon neutrality, and digitally enhanced health.⁶³ MISTI also highlighted specific challenges currently present in the Cambodian ecosystem: “underinvestment in R&D; limited alignment between research activities and national challenges, private sector activities and policymaking needs; limited research capacity in the public and private sectors; a weak research infrastructure; and limited academia-industry linkages”. At the same time MISTI proposed 4 main complementary pathways to address the aforementioned challenges: (1) “investing in research to support the eight research missions”, (2) “strengthening the role and capacities of public research institutions”, (3) “supporting research careers”, and (4) “incentivising research activities and collaboration”.⁶⁴

Conclusions

In conclusion, attracting students to the right majors is something that must be done, but hopefully, not at the detriment of quality. More attention must be placed on R&D, as also clearly outlined by MISTI, together with a closer relationship between universities and private sectors, possibly increasing the national budget for it, and creating mechanisms to reward companies investing in this field. Furthermore, the process of accreditation of institutions initiated by the Accreditation Committee of Cambodia (ACC) should continue and become even more rigorous, aligning accreditation with degree validity, together with an increased transparency and visibility of mechanisms, and accredited institutions. This would also facilitate exchange programs with foreign institutions, avoiding pesky situations of countries unsure on recognizing degrees from some Cambodian universities, due to unclear accreditation process or at least transparency on it. Furthermore, knowledge transfer and program for enhancing people connectivity between Cambodia and ASEAN, and also with other partners could be the right move to boost R&D in the country.⁶⁵ Focus and involvement in R&D, aligned with the transformative competencies of creating value, reconciling tensions and dilemmas, and taking responsibility, defined by the OECD⁶⁶, represent what Cambodia, and also other countries, need in order to sustain their economic growth: young citizens ready to be innovative, responsible, and aware, while being creators, and not only users.

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Riccardo CORRADO

Riccardo Corrado is an Associate Professor, and Chair of the ICT Program in the School of Digital Technologies of the American University of Phnom Penh. He is also an advisor to the Cambodian Ministry of Post and Telecommunications and a BoD member of the Italian Cambodian Business Association. Riccardo received his bachelor's degree, master's degree, and Ph.D. in respectively Electronics, Telecommunications, and Information Engineering from the University of Trieste, Italy. In 2021, Riccardo was awarded a master's degree in Education (MEd – ICT in Education) from the University of Johannesburg, South Africa, and in 2023, he graduated from Abertay University, UK, with an MBA with a concentration in Business Analytics. Riccardo's research interests involve applications of ICT in education, and the digital transformation of Cambodian's Public and Private sector, with an interest toward the new space economy.




Prohim TAM

Prohim Tam received a B.S. degree in the Department of Management of Information Systems from Paragon International University, Cambodia, in 2019. Currently, he is a combined master's and Ph.D. in Mobile Computing and Networking Lab at the Department of Software Convergence, Soonchunhyang University, Republic of Korea. His research interests include the applications of (distributed) machine learning and deep learning with software-defined networking and virtualization techniques.



Audrey LIWAN

Audrey Liwan is a senior lecturer at the Faculty of Economics and Business, Universiti Malaysia Sarawak (UNIMAS). She received her bachelor's and master's degrees from Universiti Putra Malaysia (UPM) in the fields of international trade and international economics. Currently, she is pursuing her Ph.D. in environmental economics at the University of Malaya (UM). She has attended several trainings from national and international institutions, such as the United Nations, the Ministry of Environment (South Korea), the Ministry of Energy, Science, Technology, Environment, and Climate (Malaysia), and the Universiti Tenaga Nasional, Malaysia. Audrey has published in several peer-reviewed journals on the topics of economics and the environment. She has also been involved in national consultancies and research grants. She was a connectivity cluster research fellow for the Think Next, Act Next, The Next Gen EU-ASEAN Think Tank Dialogue (EANGAGE) between 2021 and 2022. Her research interests include climate change, behavioral economics, energy economics, natural resources, and international economics.



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