



# KEY FINDINGS AND RECOMMENDATIONS OF ASSESSING INTERNET DEVELOPMENT IN

# CAMBODIA

Using UNESCO's Internet  
Universality ROAM-X Indicators

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*UNESCO Series of Internet Universality Indicators National Assessments*

Note: This is an assessment of 109 core indicators and 21 contextual indicators instead of the full set of 303 indicators, and it is therefore not intended to cover all dimensions of the digital ecosystem in the country, but serves to take stock of significant progress and signal those gaps in a need to be improved in adhering to ROAM framework



# KEY FINDINGS AND RECOMMENDATIONS

## UNESCO's Internet Universality Concept and Indicators Project

UNESCO's position on Internet issues has been guided, since 2015, by the concept of Internet Universality. At its core is an Internet where human rights are respected, protected and guaranteed through the creation of national Internet policies that promote the development of knowledge societies and are based on sustainable digitalisation and digitalised sustainability.

UNESCO has defined the principles that underpin its Internet Universality concept, and these are known as the ROAM-X principles. These advocate for an Internet that is based on Human Rights, that is Open and Accessible to all and is designed and developed with multi-stakeholder participation.

An assessment of the state of the Internet on the basis of the ROAM-X principles is essential if progress is to be made in the development of a national digital policy. This basis provides a holistic tool for the assessment of the Internet development level and thus allows evidence-based policy improvements to be made. These can, in turn, foster Internet Universality as a positive factor for sustainable development.

The framework of Internet Universality consists of 303 indicators, of which 109 'core' ones. UNESCO uses the five category ROAM-X model to give a balanced picture of this overall development:

- R** – that the internet be based on human **Rights**
- O** – that it is **Open**
- A** – that it is **Accessible to all**, and
- M** – that it is nurtured by **Multistakeholder participation X – Cross-cutting** issues

The assessment is primarily based on a narrative for each category, but is carefully structured using 'themes', each of which includes a number of questions and associated indicators. By evaluating a given country's Internet environment against the ROAM-X indicators, the national assessment process aims to:

- Present a substantive understanding of the national Internet environment and policies;
- Assess their alignment to UNESCO's ROAM principles and their contribution to sustainable development;
- Develop policy recommendations and practical initiatives that will enable the country to improve their Internet ecosystem.

## The initiative in Cambodia

The assessment of IUI in Cambodia commenced as the initiative of the Ministry of Post and Telecommunications of Cambodia (MPTC) and the UNESCO Phnom Penh Office, as a part of cooperation to support Cambodia in its transition towards a digital and knowledge society in achieving Cambodia-localized SDG2030 (CSDGs) and the development of digital economy and society. In June 2021, the Bureau of the International Programme for the Development of Communication (IPDC) and Intergovernmental Council at its 65th Meeting has commissioned the Cambodia Academy of Digital Technology (CADT) to conduct the assessment on Internet Development in Cambodia by applying UNESCO's Internet Universality Indicators (IUIs). This initiative became a project entitled 'Assessing Internet Development in Cambodia - Internet Universality Indicators (IUIs)', which is carried out by CADT in partnership with the UNESCO Phnom Penh Office, and with the support of the MPTC.

After the establishment of the Multi-Stakeholders Advisory Board (MAB), CADT has selected a research team led by Professor NAKAGAWA Kasumi with Dr. SRUN Sopheak, NGOUN Somaly, PHAN Daro, and CHANTY Pisal, to carry out the indicator research investigation with research assistants Touch Sokeang and Khim Sokheng, and interns Art Lida, and Vicheanon Norakpichit. The research is closely supported by Dr. Simon Ellis, retired UNESCO International Expert, overseen by Mr. Sardar Umar Alam, Head of the UNESCO Office in Phnom Penh, Cambodia, together with Mr. Mikel Aguirre Idiaquez, Project Officer, Ms. Man Wenjing, Associate Project Officer, and Mr. Pheap Bunleng, Project Officer, Mrs. Ty Samphors Vicheka, Project Officer at the same office, who supervised and coordinated with the national counterparts, led the UNESCO processes supporting the implementation of the study. The findings and recommendation were regulatory presented and discussed with MAB, which subsequently finalized a national validation workshop on October 23, 2023. The report has made it possible to provide a landscape of internet development in Cambodia to inform all relevant stakeholders involved in the digital economy and society development, as well as promoting evidence-based policy making in digital development in Cambodia.

## Executive Summary

This report presents the key findings from the analysis to Cambodia of the Internet Universality Indicators, developed by UNESCO with a view to promoting inclusive knowledge societies. The research and analysis for this report was carried out between May 2022 to August 2023 by a research team at CADT. The report contains the findings for all the core indicators proposed by UNESCO as well as for the contextual indicators.

The preliminary findings were presented at the multi-stakeholder advisory board (MAB) meeting in July 2022 and the UNESCO Cambodia office provided full support for the finalization of the report.

## R – Rights

The Constitution of the Kingdom of Cambodia enshrines fundamental human rights, and the Royal Government of Cambodia (RGC) has ratified numerous regional and international human rights agreements, thereby committing to uphold these rights both offline and online. However, the interpretation of these commitments in practice has shown inconsistencies. The RGC has made commendable progress in legislation, policy frameworks, and digital development, most notably with the adoption of the E-Commerce Law and Consumer Protection Law in 2019, ensuring a secure and competitive electronic market, but challenges in their effective implementation and monitoring have emerged. The RGC introduced the Digital Economy and Society Policy Framework in 2021 and the Cambodian Digital Government Policy early 2022, aiming for a technologically equipped and transparent government that fosters an inclusive digital society. Emphasizing e-participation, these policies echo the UN E-Government survey's focus on e-information, e-consultation, and e-decision-making. These policies also emphasize inclusion and the principle of leaving no one behind, ensuring access for vulnerable and disadvantaged groups regardless of connectivity, cost, or availability.

However, the approach occasionally lacks concrete action plans, risking potential inefficiencies and gaps in execution. A more cohesive strategy and infrastructure for overseeing Cambodia's digital development, areas like enhancing coordination mechanisms, elevating digital literacy levels, and expanding infrastructure coverage requires immediate attention. Another concern is the competitiveness of telecommunications services, which might hinder the nation's progress in the global digital landscape. As Cambodia undergoes digital transformation, there are rising concerns about how well the rights of its citizens, including freedom of expression and access to information, privacy, and rights to cultural and political participation, as well as the promotion of independent online media and press are preserved amidst potential regulatory overreach. To ensure a progressive digital future, regulations should not only align with international standards but also be coupled with transparent, accountable, and independent oversight mechanisms.

## O – Openness

Cambodia's Information and Telecommunication Technology (ICT) sector is at the early stage of development as the country was ranked 120 of 193 in the E-Government Development Index 2024 and 127 of 193 in E-participation. With a vision to build a vibrant digital economy and society, the government has established policies, law and regulation frameworks notably the "Cambodia Digital Economy and Society Policy Framework 2021-2035" and the "Digital Government Policy 2022-2035" among others. However, it is too early to assess the impact of both law and policy frameworks on boosting innovation on the internet, but the soaring number of mobile broadband subscriptions and the lower price of mobile data are seen as the catalysts to boost digital adoption by government

agencies, businesses, and especially young people who can use technology for social media, or other digital platforms.

The Cambodian government also adopted the Open-Source Master Plan in February 2005 to promote free and open-source software and licensing but there has been no subsequent action on this subject. Moreover, there is no systematic access to academic and scientific resources by higher education institutions and students in Cambodia while the government policy and support for internet access for persons with disability remains very limited. The telecommunication sector in Cambodia is regarded as strongly regulated under the authority of Telecommunication Regulator of Cambodia (TRC) to ensure service provider's interest, service user's interest and growth as well as to guarantee national security, stability and public order.

## A – Access

Cambodia has made significant progress in improving digital connectivity and digital inclusion, that have translated to notable socio-economic advances, but there is a clear call to action. Addressing existing challenges such as infrastructure development, network improvements, and ensuring a steady flow of skilled professionals will be paramount for the nation to retain its position in the competitive global telecommunications landscape.

Cambodia has experienced significant strides in digital connectivity. The most prominent shift has been the proliferation of mobile broadband, which holds a substantial 98.30% market share, offering a cost-effective solution for many at an average monthly expense of US\$5. However, this rapid expansion has not been without challenges, including issues of network congestion, data management, and a pronounced digital divide between the urbanized and more rural sectors of the country. On the other hand, fixed broadband, while showing potential growth especially in urban centres and amongst formal businesses, is still in its infancy, making up only 1.70% of the total market share. As of 2021, the subscription rate stood at 2.01 per 100 residents, an indication of its more limited reach. This highlights an imperative need for increased investment in infrastructure and the formulation of policies that focus on broadening accessibility.

In terms of digital skill training, there's an observable positive shift in STEM enrolment in bachelor's degree programs, witnessing an increase from 27% in the academic year 2016-2017 to 31% by 2020-2021. However, a closer look reveals a potential future challenge: a mere 10% of these students are choosing ICT majors. This discrepancy raises concerns about the future availability of skilled professionals crucial for supporting the ongoing expansion and technological evolution of the telecommunication sector.

## M – Multistakeholder

Cambodia has started to express its commitment to the multistakeholder model of Internet governance based on international law and the principles of human rights and has continued to work with and participate in local, regional, and global initiatives when developing Internet and telecommunications policies. However, more efforts are needed to involve more diverse sectors. To improve engagement, policy-making bodies should share information openly and promptly with interest groups. Additionally, the government should organize an annual Internet Governance Forum (IGF) alongside the existing Youth IGF initiated by a group of civil societies. Participation should be recorded, and capacity-building programs should occur between IGF meetings. There should be one, sole, government body responsible for Cambodian Internet development including coordination quality, innovation, and dissemination of services. Presently, initiatives are being coordinated by the Digital Economy and Business Committee and Digital Government Committee.

## X – Cross-cutting Issues

The Royal Government of Cambodia (RGC) has endeavoured to embed inclusivity within its digital policies, striving to address the concerns of marginalized communities. However, the existing framework reveals disparities in achieving gender equality in the realm of digitalization. Although the policies in place aren't intrinsically discriminatory, the socio-cultural landscape in Cambodia inadvertently perpetuates gender discrepancies in digital benefits. Notably, the rapid digitization trajectory has somewhat eclipsed the nuanced incorporation of gender considerations. A spectrum of challenges, spanning the gender digital divide, online child safety, and robust national cybersecurity remains. The prevailing legal architecture, though comprehensive for the Fourth Industrial Revolution, exhibits limitations in gender-centric digital mainstreaming and adequately addressing marginalized demographics. Presently, there is no holistic 'Digitalization and Gender' policy, though the Ministry of Women's Affairs (MOWA) is slowly crafting such a policy. Furthermore, the protection of marginalized groups, notably the LGBTIQ community, from digital malefactions is paramount. Preliminary surveys indicate substantial incidents of online harassment against women with 244 out of 845 (54.5% of women). As the nation pivots towards fortifying its cybersecurity apparatus, fostering widespread public understanding is imperative, particularly as the digital vulnerabilities faced by children during the COVID-19 era remain under-researched.



## Key Policy Recommendations:

### Government

- Reinforce the promotion of independent online media, press, and protection of freedom of expression, right to access to information and privacy both online and offline.
- Avoid unnecessary restriction of fundamental and relevant rights in the drafting of legislation on information technology crime, cybersecurity, personal data protection and access to information.
- Consider the amendment of existing laws, policies, and practice related to government surveillance and data collection that are incompatible with human rights norms and impede users' privacy.
- Introduce a mandatory Human Rights Impact Assessment as part of the digital legislative process.
- Consider establishing an independent Data Protection Agency
- Promote the transparency and public accessibility of legal enforcement and decision-making processes, especially for requests to companies for content restriction, the handover of user data, and other surveillance requirements.
- Expand the implementation of digital administrative services, digital administration platforms and digital innovation as part of the Digital Government Policy 2022-2035 to create an integrated and easily accessible system for e-government.
- Make available public data and information online in an easily accessible format.
- Improve the quality of public websites and government portals to provide full accessibility for persons with disabilities.
- Ensure government websites have content in local languages and formats that are standardized.
- Promote the use of open-source software.
- The Ministry of Post and Telecommunications and the National Institute of Statistics of the Ministry of Planning should introduce independent internet/ICT access and usage household surveys in the medium-term or consider introducing more ICT access and usage related questions in the existing population census.
- Adopt a comprehensive short-term and medium-term strategy and plan for the promotion of universal access under the Universal Service Obligation Fund and introduce a transparent annual report for the Fund.
- Accelerate the plan for broadband internet connection to all communes across the country, including schools, health centres, police posts, and other public service institutions.
- Enforce the quality of services (QoS) of mobile and fixed telecommunication services.
- Accelerate the strategy and plan to update curricula to include media and digital literacy and STEM in all levels of education: primary, secondary, and higher education, as well as TVET.

- Promote the digital skill essential training and digital pedagogy of teachers in all levels of education.
- Incentivize the private sector and use the Skill Development Fund to support the demand side to upskill and reskill the workforce in the field of ICT and for the future of work.
- Develop the digital skill competency framework for higher education and TVET to ensure competitiveness in the digital economy and society, as well as to address skills mismatch.
- Give more extensive promotion to the principles of multi-stakeholder governance in all Internet-related forums.
- Explicitly integrate the views of all interest groups including ethnic groups and people in remote areas in the development of national Internet-related guidelines and legislative projects through extensive consultation
- Extend the involvement of civil society and academia in public consultations, workshops, working groups and surveys, with reasonable deadlines.
- Organise a multi-stakeholder forum such as the Internet Governance Forum-Cambodia by seeking support and involvement from neighbouring countries in the region, and publish government submissions to international forums concerned with ICT and the Internet
- Enact public participation policy frameworks to guide the public participation process. This should include the avenues, thresholds, timelines and formats for citizen engagement while ensuring access to draft bills and reporting structures.
- Formulate a new comprehensive policy on digitalization which pays specific attention to the rights of children and women, to ensure gender is mainstreamed into all government digitalization policies.
- Expand the gender equality index specifically for the ICT/Internet area in SDG review report, NSDP and other policy review/evaluation reports, arranging for statistical information to be collected on online abuse of women and children.
- Ensure SDGs monitoring on ICT related data has gender-sensitivity and gender disaggregated data, with special attention to marginalized women including LGBTIQ communities,
- Establish nationwide support services for girls and women who are affected by cybercrime and gender-based violence.
- The draft data protection law should include a broad-based consistent and transparent framework to ensure that personal data are not distributed beyond their immediate purpose unless there is a proportionate threat to national security or personal abuse of other Internet users.
- Government should provide transparent reports regarding traffic through the National Internet Gateway including any incidents of blocking.

## Judiciary

- Provide capacity building on Internet-related law, for people in the judicial sector such as judges, prosecutors, court clerks, lawyers, police officers, and other relevant people.
- Applying international human rights principles and internet-related rights when ruling a judgment.
- Increase the number of judges and prosecutors specializing in cybercrime
- Integrate a digital technology related module in all training involved judicial sector, including training sessions on digital violence against women and children to all levels in the judiciary.
- Consider adopting a clear procedure governing the admissibility of digital evidence, its integrity, and its preservation in the absence of relevant legislation.
- Make judiciary documents and court decisions available online.

## Private sector

- Actively participate in policy and regulation consultation with the government and ensure that rights related under international law and domestic law are respected and protected.
- ISPs and other private companies should publicize and promote customer's rights to information and inform them about data requests by the government.
- Secure the highest possible level of protection for personal data concerning access, modification, and transfer.
- Publish regular reports on government initiatives to hold companies liable for online content and on government requests for data.
- Enhance 4G coverage across the country and ensure quality of service (QoS) in compliance with laws, regulations, and quality standards.
- Promote university-industry linkage in training of digital skills, upskill and re-skill programs, and research and development in digital products and services.
- Provide more upskill and re-skill programs for employees to increase the productivity and competitiveness, especially through professional qualifications.
- Work with financial institutions to provide access to finance for fintech start-ups.
- Increase the use of digital technologies in business.
- Seek opportunities to get involved in the meetings with government on policy making and support the government through active participation in consultations and strategy development.
- Protect the rights of employees in digitalisation-driven structural change processes. All those with special needs including all genders and people with disabilities., should be invited to join in the development of ICT technologies.
- Strengthen and improve the risk awareness of the workers and promote 'cyber literacy', by ensuring both women and men have access to learning opportunities to ICT in workplace.

- Prevent and prohibit distributing any commercial advertisement which may affect dignity of children, girls and women.

## Technical community

- Ensure the application of ethical values and goals, such as achieving the highest possible degree of security and privacy protection, in the development of technical standards and products.
- Participate in law and policy consultation and provide input to ensure that the law and policy makers cover the technical aspects correctly.
- Innovate and develop software and applications using open-source software.
- Improve technical skills and innovations of workforce and citizens by collaborating with universities, research institutes and private companies.
- Promote a culture of peace and respect in the online environment, as well as reduce the gender gap.
- Develop effective methods to support law enforcement authorities in combating crimes against girls and women in cyberspace while safeguarding important legal interests, privacy, and data protection.
- Develop online products such as applications that promote positive and safe online spaces for all users, with special attention to elder population who are not fully benefiting from digitalization.
- Establish clear mechanisms on how internet users can protect their data and set up a support system which is accessible and user-friendly to all the genders across all generations, including people with disabilities.

## Civil society

- Advocate for the swift development of digital technology and the internet and promote human rights online.
- Participate in the law and policy consultation process and provide input for the government to ensure there is no unnecessary human rights restriction, and balanced and inclusive stakeholder representation in policymaking.
- Monitor and report the result of the implementation of new Internet-related laws and regulations enacted by the government especially as regards human rights.
- Collaborate with the government and private sector to provide media and digital literacy to citizens; especially to people in rural and remote areas, as well as to promote the provision of accessible tools and services for people with disability and ethnic minorities.
- Create awareness raising programs on safety in cyberspace for children, young people and parents to prevent online crimes.

- Support the communities in the rural and remote areas that have no mobile and internet coverage by articulating their needs and demand for the implementation of Universal Service Obligation Fund.
- Deepen and strengthen existing initiatives for monitoring and combating human rights violations on the Internet, particularly abuses committed against children and women, and promote a culture of peace and respect in the online environment.

## Academia

- Conduct evaluation and monitoring of internet rights, especially the impact of recent legislation on Cambodians including vulnerable and disadvantaged people.
- Create a manageable method for human rights assessment to implement procedures for assessing human rights impacts, as well as collecting and analysing data by gender about online harassment, gendered hate speech and digital violence, with a focus on the marginalized population who are at higher risk of such violence including LGBTIQ groups.
- Provide policy input and recommendations as well as monitor and evaluate government digital policy and digital legislation by conducting research, analysing cross-sectional and longitudinal data on key issues including gender, age, and geographical location.
- Transfer digital skills and knowledge to society; especially, the young generation.
- Provide access to academic research, publications, and scientific journals.
- Join efforts with the Ministry of Education, Youth and Sport, and Ministry of Post and Telecommunication to update curricula to include STEM and digital skills at all educational levels.
- Promote research and development for digital adoption by citizens and businesses including Khmer Natural Language Processing for promoting local contents.
- Develop cyber-security literacy programs for children and young people at schools to be incorporated within curricula across primary, secondary, and higher education levels.
- Conduct research on children's access and usage of ICT across social economic, cultural, religious and geographical areas, to identify their needs, especially for the protection of girls and children from LGBTIQ communities who are at higher risk for online crime.

## Conclusion

The assessment of Internet development in Cambodia reveals a nation at a digital crossroads. Driven by the **Accessibility (A)** pillar, Cambodia has achieved remarkable success in mobile broadband penetration and affordability, creating a solid foundation for a digital society. However, this progress is contrasted by significant challenges in **Rights (R)** and **Openness (O)**. The absence of an independent data protection authority, combined with the limited availability of open government data and a skills gap in the ICT workforce, hinders the ecosystem's maturity. Furthermore, **Cross-cutting (X)** indicators

highlight that the benefits of digitalization are not yet shared equally, with persistent gender gaps and emerging environmental concerns regarding e-waste.

To transition from a connected society to a truly inclusive knowledge society, Cambodia must prioritize **Multistakeholder participation (M)**. Institutionalizing dialogue between the government, civil society, and the private sector—such as through a formal **National Internet Governance Forum**—is essential. By balancing robust infrastructure growth with rights-based safeguards and inclusive policymaking, Cambodia can unlock the full potential of the Internet for sustainable development.

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