

# AEC BLUEPRINT 2025 ANALYSIS

# AN ANALYSIS OF THE ASEAN COOPERATION IN INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

## Foreword

The following report is part of a series which attempts to provide a detailed analysis on the ASEAN Economic Community (AEC) Blueprint 2025. Each report will cover a single element of the blueprint, providing a comprehensive look at past achievements, present problems, and the future

plans of the AEC. Special attention will be placed upon the strategic measures outlined in the AEC Blueprint 2025. This report aims to provide insight into the viability surrounding regional economic integration under the AEC.

## ASEAN ICT Cooperation

In enhancing connectivity in ASEAN, ICT plays a super important role. ICT has revolutionized the way people live, interact with others, and do business. There isn't a single aspect of our lives that has not been transformed by progress in ICT. As emerging markets, ASEAN is still in the early stages of developing ICT and applying it in businesses. Some member states are of course more advanced than the others in developing and utilizing ICT, but ASEAN needs to collectively continue to work on improving connectivity within the region and with the rest of the world because the way future business is conducted will very

much depend on ICT. ASEAN has recognized this need and has established connectivity (and sectoral cooperation) as a new separate pillar of the AEC to support economic development and integration, and improve cross cooperation among the sectors under the AEC.

This report has been prepared to provide some analysis on the importance of ICT in making its significant contribution to connectivity and how it will change the way business is conducted in the next ten years of AEC implementation.

## A. Targets under the AEC 2015 Blueprint

- ASEAN ICT cooperation under the AEC Blueprint 2015, perhaps because when it was drafted, ASEAN was still in its early stages in terms of ICT development. Nonetheless, member states already understood the importance and that future economic and business activities would be very much driven by advances in ICT technology. In that blueprint, ICT cooperation is classified under infrastructure development of the second pillar of AEC 2015: competitive economic region. ASEAN recognized that a secure and connected information infrastructure is important to promote economic growth and improve competitiveness, building on the existing national capabilities and transforming them into a regional infrastructure.
- The focus on development of information infrastructure was aimed at building high-speed inter-connections among all **National Information Infrastructures (NII)**. The strategic actions identified in the blueprint include:
  - i. Facilitate high-speed connection among all NIIs by 2010 and implement ICT measures identified in **Vientiane Action Plan (VAP)**
  - ii. Intensify capacity building and training programmes for national **Computer Emergency Response Teams (CERTs)** and strengthen their capacity, cooperation and coverage of ASEAN's cyber security network
  - iii. Encourage the participation of all stakeholders in utilization and development of ICT applications and services on the regional information infrastructure

- iv. Support sectoral ICT applications to improve their effectiveness and productivity
- v. Expand the number of ASEAN countries participating in the **ASEAN Mutual Recognition Arrangement (MRA)** for telecommunications equipment
- vi. Deepen regional policy and regulatory framework to deal with the opportunities and challenges in the area of **Next Generation Networks**

- Also under the second pillar of the AEC is ASEAN's plan to collaborate in promoting e-commerce in the region with the objective of outlining the policy and legal infrastructure for e-commerce and enabling online trade in goods with ASEAN through the implementation of the e-ASEAN Framework Agreement and based on common reference frameworks. The strategic actions for ASEAN e-commerce include:
  - i. Adopt best practices in implementing telecommunications competition policies and fostering the preparation of domestic legislation on e-commerce
  - ii. Harmonise the legal infrastructure for electronic contracting and dispute resolution
  - iii. Develop and implement better practice guidelines for electronic contracting, guiding principles for online dispute resolution services, and mutual recognition framework for digital signatures in ASEAN
  - iv. Facilitate mutual recognition of digital signatures in ASEAN
  - v. Study and encourage the adoption of the best practices and guidelines of regulations and/or standards based on a common framework
  - vi. Establish a networking forum between the businesses in ASEAN and its dialogue partners as a platform for promoting trade and investment

- After a few years of implementation, the **ASEAN Telecommunications and IT Ministers (TELMIN)** felt that, given the importance of ICT in driving the social and economic transformation in the region, a more focused and integrated roadmap

may be necessary to better coordinate and expedite the implementation of the measures in the AEC Blueprint 2015. Therefore, in 2011 the ASEAN TELMIN endorsed the **ASEAN ICT Masterplan 2015 (AIM 2015)** with the aim of better steering the development of ICT in the ASEAN region, particularly during the last five years of the AEC 2008-2015.

- Under the AIM 2015, there are six strategic thrusts that would guide the activities and initiatives to achieve the expected outcomes. Those strategic thrusts include:
  - 1. Economic transformation** through creation of a conducive business environment to attract and promote trade, investment and entrepreneurship in the ICT sector
  - 2. People empowerment and engagement** by enhancing the quality of life through affordable and equitable ICT
  - 3. Innovation** by fostering a creative, innovative and green ICT sector
  - 4. Infrastructure development** through development of ICT infrastructure to support the provision of services to all ASEAN communities
  - 5. Human capital development** by developing competent and skilled human capital in the ICT to support the growth of the ICT sector and help transform other sectors of the economy
  - 6. Bridging the digital divide** by addressing the varying levels of ICT development and adoption within individual countries and across the region, as well as focusing on bridging other gaps within the digital divide to promote greater adoption of ICT
- These six thrusts were expected to bring about four outcomes:



ICT as an engine of growth for ASEAN



Recognition for ASEAN as a global ICT hub



Enhanced quality of life for peoples of ASEAN



Contribution towards ASEAN integration

## B. Significant Achievements To Date

- Given that the AIM 2015 was the main guidance for the implementation of ASEAN ICT development prior to 2015, evaluation of the progress below refers to the six strategic thrusts in the masterplan<sup>1</sup>. Progress in the ICT sector is mostly achieved through completion of projects relevant to each thrust.

Area	Progress
Economic transformation	<ul style="list-style-type: none"> <li>The <b>ASEAN Telemedicine Protocol and Standards Harmonisation</b> project was aimed at promoting knowledge sharing, including best practices, standards and challenges in practicing telemedicine among member states, which was expected to lead to the development of a platform for sharing of knowledge and harmonization of standards and policies.</li> <li>The project <b>Promote and Encourage the Deployment of IPv6 for Small and Medium Enterprises (SMEs)</b> resulted in a set of recommendations for SMEs to migrate from IPv4 to IPv6. Viet Nam revised its IPv6 masterplan based on the study.</li> <li>The <b>PPP model for ICT</b> project discussed best practices deemed suitable for ICT partnerships by reviewing cases of successful public-private partnerships (PPP) in ICT and other industries. The project also proposed some recommendations on engaging the private sector using the PPP model.</li> </ul>
People empowerment and engagement	<ul style="list-style-type: none"> <li>A project on <b>ASEAN e-Government Strategic Action Plan</b> came up with a list of 15 most common and most important e-Government services to their people, which helps governments understand what to prioritise, such as e-Government, e-Education and e-Health.</li> <li>The project titled <b>Intra-ASEAN Secure Transactions Framework</b> has helped member states in addressing the problem of lack of trust when utilizing e-Services by specifying the laws/regulations necessary to improve level of trust when engaging in electronic transactions.</li> <li>An <b>ASEAN-EU Workshop on Voice and Data Roaming</b> was conducted to address the challenges in making broadband access more affordable by learning from EU's experiences. Brunei Darussalam, Malaysia and Singapore have attempted to revise their roaming arrangements among themselves.</li> <li>On creating more affordable ICT products, two projects titled <b>Survey of Existing Standards of ICT Products and Services in ASEAN with a Pilot Study on Common Software Development Standards and Enhancing the Implementation of MRA in the ASEAN Region</b> were aimed at producing recommendations to harmonise standards to eventually drive down the costs of ICT products.</li> </ul>
Innovation	<ul style="list-style-type: none"> <li>The project titled <b>Workshop on Promoting Green ICT and Green Growth for Sustainable Development in ASEAN Member Countries</b> has been the only activity that worked on achieving green ICT.</li> <li>The establishment of the <b>ASEAN ICT Awards</b> has quite successfully been able to stimulate creativity and innovation among entrepreneurs. This annual event has continued to spur innovation and thus motivation for them to compete in international markets.</li> <li>The launch of the <b>ASEAN CIO Forum</b> in 2012 has provided a platform for ASEAN CIOs to exchange best practices and expand their network and relationship building.</li> <li>The project <b>Workshop on Promoting the Establishment and Connection of ICT Centres of Excellences (COE) in ASEAN Countries</b> resulted in the establishment of an ASEAN ICT Centres of Excellence (COE) Network, which was meant to promote R&amp;D, innovation and transfer of technology.</li> </ul>

<sup>1</sup> Most inputs for this section are taken from ASEAN ICT Masterplan 2015 Completion Report

Area	Progress
Infrastructure development	<ul style="list-style-type: none"> <li>Under infrastructure development, the most successful achievement has been in the area of promoting network integrity and information security. The establishment of the <b>ASEAN Network Security Action Council (ANSAC)</b> has allowed member states to discuss regional cooperation in this area. The ANSAC has encouraged greater cybersecurity awareness, formulation of cybersecurity incident handling and escalation procedure, and establishment of a common framework for network security.</li> <li>The <b>ASEAN Broadband Corridor</b> project made recommendations to the ASEAN governments on the initiatives that would encourage the key drivers of broadband rollout. Another project, called <b>Plan to Increase Capacity Demand in ASEAN for the Next Five Years</b>, has supported the improvement of broadband internet capacity in ASEAN by assessing the capacities in each member state, and stimulating the demand for ICT services.</li> </ul>
Human capital development	<ul style="list-style-type: none"> <li>The projects <b>ASEAN ICT Skill Standards Definition and Certification (Phase I and Phase II)</b> developed the blueprint of seven fields of ICT skills: software development, ICT project management, enterprise architect design, network and system administration, information system and network security, cloud computing, and mobile computing.</li> <li>The <b>ASEAN ICT Scholarship</b> has been established to attract new talents to the ICT industry. The scholarship itself has not been awarded but ASEAN has identified the preparation requirements, including the funding sources and criteria for the recipients.</li> <li>In terms of quantity, ASEAN is still short of quality ICT workers, as revealed by the <b>Forecast of ICT Human Resource Demand in ASEAN</b>. This provides an impetus to member states to develop programmes to encourage more people to enter the ICT field as the demand is there.</li> </ul>
Bridging the digital divide	<ul style="list-style-type: none"> <li>The projects <b>ASEAN ICT Skill Standards Definition and Certification (Phase I and Phase II)</b> developed the blueprint of seven fields of ICT skills: software development, ICT project management, enterprise architect design, network and system administration, information system and network security, cloud computing, and mobile computing.</li> <li>The <b>ASEAN ICT Scholarship</b> has been established to attract new talents to the ICT industry. The scholarship itself has not been awarded but ASEAN has identified the preparation requirements, including the funding sources and criteria for the recipients.</li> <li>In terms of quantity, ASEAN is still short of quality ICT workers, as revealed by the <b>Forecast of ICT Human Resource Demand in ASEAN</b>. This provides an impetus to member states to develop programmes to encourage more people to enter the ICT field as the demand is there.</li> </ul>

### C. Current Issues and Challenges

- Without question, advancement in ICT is crucial for ASEAN economies to move forward and be more competitive in the future. Establishing connectivity, under which ICT is an important component, proves that ASEAN is seriously working towards integrating the economies to support the realization of single market and production base. Completion of AEC Blueprint 2015 has resulted in significant progress, but many challenges and issues remain and new ones have come. As in other sectors, the difference in level of economic development across the ASEAN region is a significant challenge to overcome as the gaps make it difficult for member states to engage with each other on the same protocol and standard.

- In some member states, ICT penetration is very high, while in others the rate is very low. This may be attributed to the difference in ICT infrastructure across the region and the affordability of ICT products and services. The challenge is for the authorities to address these two issues to ensure level playing field.
- Differences across the ASEAN region are also seen in the quantity of ICT professionals that is required to develop the sector in each member state. In addition, there needs to be a uniform definition of ICT professional so that member states can better work towards establishing MRAs and supporting cross-border movement of ICT workers.
- In the area of e-commerce, in ASEAN it is still underdeveloped, accounting for only 1% of total retail sales, compared to 6-8% in China and advanced economies<sup>2</sup>. There is still very large room for improvement, especially considering that the middle class with higher purchasing power will increase.

#### D. Plans under the AEC 2025 Blueprint

- Connectivity is now a new, separate pillar of the AEC because of its importance in integrating the ASEAN economies and connecting ASEAN with the global economy. The new blueprint states that ICT will drive ASEAN's economic and social transformation and therefore strong ICT infrastructure is necessary to facilitate the development of business environment that is conducive to enhancing and promoting trade, investment and entrepreneurship. The aim is to narrow and eliminate the gap in ICT development (known as digital divide) and to ensure that everyone will benefit from the using ICT in their activities.
- Plans for ICT development in ASEAN 2025 is based on the achievements made under the past **ASEAN ICT Master Plan** to bring ASEAN to a higher level in terms of establishing a digitally-empowered AEC that is secure, sustainable and transformative, and of enabling an innovative, inclusive and integrated AEC as well. The strategic measures involved include:
  - i. Economic transformation by exploring further utilization and coordination of ICT for economic development, and promoting digital trade in the region;
  - ii. People integration and empowerment through ICT by strengthening digital inclusion initiatives, and exploring new ways to enhance internet broadband coverage and affordability;
  - iii. Innovation through support to ICT innovations and entrepreneurship as well as new technological developments;
  - iv. ICT infrastructure development through improvement of ICT infrastructure and connectivity particularly in the rural areas, and development of measures to enhance the resilience of ICT infrastructure;
  - v. Human capital development by strengthening the professional development of ICT workforce in ASEAN;
  - vi. ICT in the single market through promotion of freer flow of ICT products, services and investment in the region as well as lowering of international mobile roaming charges;
  - vii. New media and content industry by encouraging growth and use of e-services and new media in ASEAN;
  - viii. Information security and assurance by building a trusted digital ecosystem as well as further strengthening cooperation in cyber security and developing measures to protect personal data.

<sup>2</sup> Lifting the Barriers to e-Commerce in ASEAN, CARI and A.T. Kearney

- In addition to the AEC Blueprint 2025, direction of the development of ICT sector in ASEAN is also guided by the **Master Plan on ASEAN Connectivity (MPAC) 2025**. The MPAC provides a grand guidance on improving and promoting ASEAN Connectivity in five key areas:



Sustainable Infrastructure



Digital Innovation



Seamless Logistic



Regulatory Excellence



People Mobility

In relation to ICT cooperation in ASEAN, perhaps area (ii) is most relevant. The initiatives under digital innovation include:

- Enhance the MSME technology platform
- Develop the ASEAN digital financial inclusion framework
- Establish an ASEAN open data network
- Establish an ASEAN digital data governance network

## E. AEC 2025 Blueprint Analysis

- The table below attempts to evaluate the progress made under each measure outlined in the AEC Blueprint 2025 for transport cooperation.

Issues	Current Status and Development
<p><b>1 Economic transformation</b></p> <ul style="list-style-type: none"> <li>Explore further utilization and coordination of ICT for economic development</li> <li>Promote digital trade in ASEAN</li> </ul>	<ul style="list-style-type: none"> <li>Several projects have been completed to address the issues of harmonization of protocols and standards, sharing of knowledge and best practices, and migration to the more advanced internet protocol version.</li> <li>A project on developing the most suitable PPP scheme has also been completed. This project was aimed at inclusion of the business sector in promoting development and utilization of ICT in future economic activities.</li> </ul>
<p><b>2 People integration and empowerment</b></p> <ul style="list-style-type: none"> <li>Strengthen digital inclusion efforts to empower individuals and to enable community development</li> <li>Explore new ways to enhance internet broadband penetration and affordability in ASEAN</li> </ul>	<ul style="list-style-type: none"> <li>Member states have cooperated in conducting projects to look into priorities of services under e-Government, improvement of trust when engaging in internet transactions, and possible ways to reduce costs (enhancing affordability) of ICT products and services.</li> </ul>



Strategic Measure	Current Status and Development
<b>3 Innovation</b>	
<ul style="list-style-type: none"> <li>Support ICT innovations and entrepreneurship as well as new technological developments such as Smart City, and Big Data and Analytics</li> </ul>	<ul style="list-style-type: none"> <li>The attempt to encourage entrepreneurship is done through the establishment of the <b>ASEAN ICT Award</b>. The <b>ASEAN CIO Forum</b> was launched for CIOs to exchange ideas and collaborate to further promote innovation in the ICT utilization.</li> <li>Promotion of R&amp;D, innovation and technology transfer has been supported by establishment of COEs in ICT. Green ICT has also received attention but not much work has been done about it.</li> <li>In terms of developing ASEAN smart cities with support from the ICT sector, Singapore has been the leading member state, followed by Malaysia and Thailand, based on the 14 categories from the <b>IDC Top Smart City Initiative</b>.</li> </ul>
<b>4 ICT infrastructure development</b>	
<ul style="list-style-type: none"> <li>Improve ICT infrastructure and connectivity especially in the rural areas</li> <li>Develop measures to enhance the resilience of ICT infrastructure, including submarine cables</li> </ul>	<ul style="list-style-type: none"> <li>Two projects have been completed to assess the ways to expand broadband rollout and the current supply-demand nature in the ASEAN ICT sector.</li> <li>The gap across the region is still very large with Singapore approaching the status of advanced economies in terms of ICT infrastructure and readiness.</li> </ul>
<b>5 Human capital development</b>	
<ul style="list-style-type: none"> <li>Strengthen the professional development of the ICT workforce in the region</li> </ul>	<ul style="list-style-type: none"> <li>A project has been completed to propose the definitions of the seven fields of ICT skills. This is an attempt towards harmonizing the standards of ICT professionals in ASEAN and eventually support their cross-border movements.</li> <li>The <b>ASEAN ICT Scholarship</b> is underway of being awarded but ASEAN is still working on its preparations.</li> </ul>
<b>6 ICT in the single market</b>	
<ul style="list-style-type: none"> <li>Promote freer flow of ICT products, services and investment in the region</li> <li>Lower international mobile roaming charges in ASEAN</li> </ul>	<ul style="list-style-type: none"> <li>By end of 2015, the average internet speed in ASEAN varies widely. Singapore, at 118 mbps, remains at the top spot in the Asia Pacific region, while in the Philippines, it was just 3.6 mbps – lowest in the region.</li> <li>In terms of pricing, high speed internet is most expensive in Myanmar, and cheapest in Singapore and Thailand.</li> </ul>

Strategic Measure	Current Status and Development
<p><b>7 New media and content industry</b></p> <ul style="list-style-type: none"> <li>Encourage the growth and use of e-services and new media in the region</li> </ul>	<ul style="list-style-type: none"> <li>Singapore is the leader in the region in utilizing e-services for their people. An example is Spring Singapore, an agency under the Ministry of Trade and Industry that has been mandated to promote growth of enterprises and in trust in Singapore products (goods and services). Spring Singapore has utilized e-services to assist their clients in terms of e-payment and product safety and accuracy.</li> <li>Other member states are still in the initial stages of preparing the use of e-services.</li> </ul>
<p><b>8 Information security and assurance</b></p> <ul style="list-style-type: none"> <li>Build a trusted digital ecosystem including through further strengthening of cooperation on cyber security and developing measures to protect personal data</li> </ul>	<ul style="list-style-type: none"> <li>Improving cybersecurity is done through the establishment of the ANSAC to promote cybersecurity awareness, develop incident handling and procedure, and establish a common framework for network security.</li> </ul>

## F. Conclusion: Moving Forward with the AEC 2025 Plans

- The ASEAN ICT authorities need to address the issues of large gaps in ICT developments in ASEAN. These include gaps in infrastructure development, which leads to discrepancies in broadband speed, utilization of ICT products and services, and prices of ICT services. Improved infrastructure would also allow for greater support from the ICT sector to the other economic sectors such as MSME development, logistics and financial inclusion, as well as enhancing security and trust in cyber transactions.
- More efforts need to be allotted to the education side to increase the quantity of ICT professionals that could support not just the utilization of ICT, but also improve R&D, innovation and technology transfer. The ASEAN ICT Scholarship scheme needs to be expedited in its implementation.
- E-commerce needs to be promoted to allow greater movement of goods and services by improving the broadband access, involvement of local participants, security and payment, and the logistics side of e-commerce. E-commerce will play an important role in ASEAN single market.
- Similar to transport, infrastructure financing could be an issue in ICT development. ASEAN has established the **ASEAN Infrastructure Fund (AIF)** that has made some important contributions to infrastructure projects in the region. While the current size of the AIF is still quite small, enlargement of the Fund to meet with the growing demand for infrastructure financing could be met by stronger communication and cooperation with the finance authorities in the region.
- PPP has been mentioned in the **AEC Blueprint and MPAC 2025** as a way to promote ICT development. It is then very important for the ASEAN ICT authorities to engage the private sector more intensively in this initiative<sup>3</sup>. Stronger collaboration will result in more realistic outcomes in support of the AEC and its stakeholders.

<sup>3</sup> The importance of this has been confirmed by ASEAN IT Priorities 2016, a report by Computer Weekly. According to the study, ASEAN CIOs are expected to spend more on IT in 2016 and the following years since ASEAN consumers are expected to be more computer and technology savvy in spending their money.



## References

- ASEAN Secretariat (2008). ASEAN Economic Community Blueprint
- ASEAN Secretariat (2015). ASEAN 2025: Forging Ahead Together
- ASEAN Secretariat (2015). ASEAN Integration Report 2015
- ASEAN Secretariat (2015). A Blueprint for Growth ASEAN Economic Community 2015: Progress and Key Achievements
- ASEAN Secretariat (2015). ASEAN ICT Completion Report
- ASEAN Secretariat (2016). ASEAN ICT Masterplan 2020
- ASEAN Secretariat (2016). Master Plan on ASEAN Connectivity (MPAC) 2025
- CARI and AT Kearney, Lifting the Barriers to e-Commerce in ASEAN
- Computer Weekly, ASEAN IT Priorities 2016, available at <http://www.computerweekly.com/news/4500270428/Closer-co-operation-in-Asean-with-ICT-masterplan>
- IDC Announces 2016 Top Smart City Projects in Asia/Pacific – Singapore and New Zealand as Big Winners, August 2016, available at <https://www.idc.com/getdoc.jsp?containerId=prAP41679316>
- Carlo Miguel Castaneda, The Cost of Internet in the ASEAN +3 Region, November 2015, available at <http://www.moneymax.ph/blog/the-cost-of-internet-in-the-asean-3-region/>

### Contributing Writer:



Dr. Bambang Irawan was formerly an Assistant Director at the ASEAN Secretariat, Jakarta, Indonesia. His portfolio covered cooperation and initiatives under the ASEAN finance integration. In his capacity, he coordinated activities and initiatives under financial services liberalisation, capital account liberalisation, capital market development, insurance and taxation.

### Editor:

Jukhee Hong | Tunku 'Abidin Muhriz

### Contact Details:

Please contact the CARI for information about this paper: [enquiries@cariasean.org](mailto:enquiries@cariasean.org)

### Disclaimer:

Any analysis, opinion or editorial contained in this report is based on information sourced from or made available in the public domain. CIMB ASEAN Research Institute (CARI) assumes no liability and makes no guarantee, representation or warranty, whether express or implied, as to the adequacy, accuracy, completeness or reliability of any such information and analysis, opinion or editorial contained in this report. All readers are advised to conduct their own independent verification and/or evaluation of such information and analysis, opinion or editorial.