


5. Prospects for Accelerating Digital Integration



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5. Prospects for Accelerating Digital Integration

As ASEAN moves towards digital integration, regional leaders are looking for ways to accelerate this progress. The DEFA aims to put in place trade rules and regulations and to promote cooperation amongst AMS for digital economy development. It is expected to be an important milestone in digital integration initiatives. The BSBR proposes a study to examine new areas that could be included in the framework to accelerate ASEAN's digital integration towards a regionally integrated economy to 2023, which will serve as input to the DEFA. ASEAN leaders have also agreed to start negotiations on the DEFA as soon as possible. In addition, new frameworks, the Post-2025 Agenda, are expected to emerge in 2025, the final year of current Blueprints, ADM and MPAC.

Meanwhile, the disparity between technology development and adoption and cybersecurity regulation continues to pose significant challenges to digital integration. Against new risks and security threats, the digital integration of AMS remains in its early stages (Pratamasari, 2020; USAID and US-ASEAN Connect, 2021). Success will depend on how ASEAN effectively embraces new areas, improves coordination amongst the various working committees and working groups, and enhances its ability to identify and to resolve challenges. It also depends on AMS reflecting this in their national legislation and ensuring each AMS's readiness for digital integration and to implement various agreements.

Research indicates that it is crucial to understand existing digital economy initiatives from ASEAN agreements and sectoral bodies' work plans to prevent duplication. To effectively track progress on digital integration, regular monitoring and evaluation are needed, including regular ADII surveys and publications to track and to compare scores with previous years.

5.1. Elements in the DEFA and Post-2025 Agenda

This section describes the current status of ASEAN initiatives on new areas, as derived from Yean (2021) and Sefrina (2023). These studies compared Singapore's digital economy agreements (DEAs) with the AAEC and Regional Comprehensive Economic Partnership (RCEP) agreement and point out that there are many items that ASEAN has to catch up on (Sefrina, 2023; Yean, 2021). The importance of comparisons with the AAEC and RCEP, which require ratification and/or acceptance, is also acknowledged, and it is hoped that efforts will be made to address them in future binding ASEAN documents. As of April 2023, Singapore has completed negotiations on digital economy partnership agreements with Chile and New Zealand (Digital Economy Partnership Agreement), a DEA with Australia (entered into force on 8 December 2020), a DEA with the UK (entered into force on 14 June 2022), and a digital partnership agreement with South Korea.

As mentioned earlier, the Government of Singapore has played a significant role in building the infrastructure supporting the formation of the ASEAN digital economy and is actively involved in promoting digital cooperation with other countries. Singapore's well-developed digital economy is a good example of the linkages amongst policy support, technological development, business activities, and digital economy expansion.

Singapore DEA provisions that are not yet covered by the DIFAP include e-invoicing, open government information, commercial ICT products that use cryptography, source code, unsolicited commercial e-messages, digital inclusion, AI and emerging technologies, financial technology cooperation, and data localisation. Although the DIFAP is the framework with the greatest scope of coverage, several new areas are still not addressed when compared to Singapore's DEAs.

The DIFAP also covers initiatives not in Singapore's DEA treaty text, including broadband accessibility, code of conduct for online business, and e-commerce platform fostering. In fact, these are policies that can all be completed domestically: the development of physical broadband infrastructure; ways in which firms, in particular MSMEs, can be responsible and fair to consumers in doing business online; and development of e-commerce platforms. This confirms the characteristics of ASEAN's digital integration, which looks not only at transactions amongst AMS but also at domestic policies and developments. It is an appropriate approach for ASEAN to undertake regulatory harmonisation as well as to reduce disparities between countries through physical infrastructure development to enhance the unity of the ASEAN digital economy and to strengthen the advantages of the size of the market.

In the following, we return to the comparison between Singapore's DEAs and AAEC, which requires ratification and/or acceptance, and select some of the items that the AAEC has not yet dealt with for discussion. In ASEAN countries at different stages of development, it is practically difficult to implement initiatives with commitments on par with Singapore (Sefrina, 2023). On the other hand, however, as explained below, many of these new areas are already under discussion in ASEAN.

Although the DIFAP and AAEC do not include e-invoicing, the BSBR explicitly encourages the development and adoption of common e-invoicing standards to facilitate business transactions under Measure 1 of the Acceleration Phase. E-invoicing can reduce the cost of invoicing for companies. According to Poel et al. (2016), the total cost of invoices for Belgian private sector companies in 2014 could have been reduced by 58% if all invoices were sent digitally. Furthermore, e-invoicing can improve tax compliance and reduce administrative burdens for businesses and governments (Rocha, 2022, Bellon, 2019).

DEA member states have agreed to collaborate on initiatives to promote the adoption of e-invoicing by businesses. This initiative is intended to raise awareness and to build capacity for e-invoicing by widely publicising the existence of infrastructures to support e-invoicing.

Competition policy has become another crucial element in many digital economy agreements. The digital sector is characterised by rapid technological innovation, network effects, big data, economies of scale, economies of scope, and winner-take-all dynamics (Dessemond, 2020). These features enable large companies in the digital economy to, for example, offer products and services for free in one market and to generate revenue from online advertising and the analysis and sale of user data in another. It is easy to create companies with substantial market dominance, although their own preferential practices may stifle competition and innovation. Thus, a competition policy specific to the digital economy is crucial, yet excessive regulation of companies also discourages innovation in the digital sector. This leads to the need for intraregional coordination to improve the competitive environment between countries.

The AAEC has no article on competition policy but lists 'competition' under Article 6. The DEA with Australia articulates cooperation on competition policy in Article 16. The *Work Plan for AAEC* places a competition clause in B.7.1. The RCEP provides Chapter 13 on competition, which includes Article 13.2 on basic principles and Article 13-3 on appropriate measures against anti-competitive activities. Enabling Action 4.2 of the ADM 2025 recommends greater cooperation between ICT and competition regulators in the ICT sector and digital economy.

Submarine cables are essential for maintaining and developing a modern networked society, as they form the backbone of the internet and carry critical services (Saunavaara and Salminen, 2023). One of the main reasons for the importance of submarine cable cooperation in digital economy agreements is that improving the resistance and repairability of these cables is crucial for the resilience of the digital economy. Parties to these agreements need to take measures to reduce the risk of damage to submarine cables caused by natural and human-made threats, such as earthquakes and submarine landslides (Goodman, 2022).

ASEAN adopted *ASEAN Guidelines for Strengthening Resilience and Repair of Submarine Cables* in 2019. Article 8.38 of Singapore's DEA with the UK calls on parties to ensure reasonable, non-discriminatory, and transparent access to submarine cable-landing stations and cable systems in their territories (Ministry of Trade and Industry, Singapore, 2022). Article 22 of the DEA with Australia recognises the importance of submarine telecommunications cable systems and aims to ensure their efficient installation, maintenance, and repair. This article describes measures to provide flexibility in the choice of suppliers for these services and to reduce the risk of damage to these systems (Ministry of Trade and Industry, Singapore, 2020)

Data localisation refers to storing data within the boundaries of a specific jurisdiction or country without allowing them to be transferred or processed outside of the region. This may be mandated by law or regulation or implemented voluntarily by companies for technical reasons¹ or as security or risk management measures. With regard to legal and administrative regulations, there are two types of regulations: those relating to cross-data transfer and those relating to the physical location of the hardware that stores and processes the data. Data localisation is regulated in the AAEC, while the RCEP and Singapore's DEAs provide a more in-depth approach to it.

The EU's General Data Protection Regulation focusses on the protection of personal data and aims to ensure that personal data is protected irrespective of where it is processed and stored. It requires companies to ensure that personal data have appropriate safeguards when transferred outside of the EU but does not mandate that data be stored within a specific jurisdiction.

The *ASEAN Framework on Digital Data Governance* states that not all requirements imposed on cross-border data flows are harmful to the economy and calls for a review and minimisation of the following restrictions to each AMS (ASEAN, 2018c):

Restrictions may come in the form of policies requiring organisations to store data within the country (e.g., data localisation), or regulatory conditions imposed before data can flow out of the country of origin (e.g., consent of the individual, for purposes of fulfilling contractual obligations).

¹ If data-processing speed is important for service provision, companies may choose to locate data and data-processing facilities in-country, taking into account the cost of setting up data centres and technology (Bliedy et al., 2018; Huang et al., 2019; Gagliardi et al., 2008).

The AAEC stipulates, in Article 7.4, that AMS must remove or minimise barriers to the cross-border flow of information, including personal data, under appropriate safeguards. The *Work Plan for AAEC* also states that all AMS must identify and eliminate or minimise data localisation requirements. The RCEP and Singapore's DEAs differ in that they allow data cross-border transfer in principle, stating that the cross-border transfer of information by electronic means cannot be prevented if it is done for the conduct of the business. The DEAs in Singapore specify that the data covered include personal data.

The AAEC and RCEP emphasise the importance of computing facilities in 'Article 7.6: Location of Computing Facilities' and 'Article 12.14: Location of Computing Facilities', respectively. They recognise the existence of own measures on the use or location of computing facilities, including for reasons of ensuring the security and confidentiality of communications. On that basis, it provides that the establishment of a computing facility in the country concerned is not required as a condition of entry into the business.² Similar provisions exist in the Singapore–Australia DEA (Article 24), Singapore–UK DEA (Article 8.61-G), and Singapore–Chile and New Zealand agreement (Article 4.4). The DEA with Australia differs in that it extends the non-requirement to establish computing facilities in the country of concern to financial services (Article 25).

The article on **data innovation** in the DEAs aim to help companies make better use of data across borders to improve their products and services and to promote economic growth and competitiveness. Data innovation can drive service innovation in existing enterprises (Troilo, De Luca, Guenzi, 2017). Data innovation can also promote competitive advantage in SMEs and manufacturing industries (Al-Khatib, 2022; Bhatti et al., 2022). Data innovation is discussed under DIFAP data protection as 'foster data-driven innovation'. The Singapore–Australia DEA supports data innovation by co-developing data-sharing projects, developing policies and standards on data portability, and sharing research and industry practices on data innovation. The Singapore–UK DEA supports data innovation by collaborating on the development of policies and standards on data mobility, such as consumer data portability, and by sharing policy approaches and industry practices on data sharing. The Singapore–Chile and New Zealand agreement recognises that a trusted data-sharing mechanism is important for facilitating innovation and creativity; dissemination of information, knowledge, technology, culture, and the arts; competition; and open and efficient markets.

Open government is an initiative to make government information available to the public. Open government data drive innovation in the public and private sectors (Ruijter and Meijer, 2020) and can promote citizen participation in policy making and service delivery (Weerakkody et al., 2017). Furthermore, open government data can improve the efficiency of government services (OECD, 2016).

The *ASEAN ICT Masterplan 2020* mentions open government data under Strategic Thrust 3, 3.1.2.3: 'Support open data development through the hosting of competitions where innovative uses and application of open government data is encouraged'. However, the initiative scored poorly in the final review (ASEAN, 2020b). The ADM 2025's 'B.2.3.3: Local and national/regional IoT-related actions' indicates high expectations for open government data and highlights that AMS have important roles to play. The Singapore–Australia DEA places open government data in Article 27, implying that government information refers to non-proprietary information, including data, held by the central level of government. The Singapore–UK DEA's Article 8.61-H and Article 9.5 of those with Chile and New Zealand recognise that facilitating public access to government information promotes economic and social development, competitiveness, and innovation.

² The RCEP does not preclude the parties from adopting or maintaining all measures that they consider necessary for the protection of their essential security interests. It also stipulated that such measures cannot be disputed by other contracting parties.

Source code in the DEAs represents restrictions on a government requiring the disclosure of source code – which is software information expressed in a programming language or algorithms representing the processing steps of a programme – as a condition of entry into the country’s market. Government requirements for source code reduce the security strength of products, increase the risk of technology leakage, and inhibit companies’ multinational expansion.

The RCEP agreement proposes to continue the discussion on source codes in ‘Article 12.16: Dialogue on Electronic Commerce’. Source code is also mentioned in Article 28 of the Singapore–Australia DEA and Article 8.61–K of the Singapore–UK DEA. The Australia–Singapore DEA states that neither country can require the transfer of, or access to, the source code of software owned by a person as a condition for the import, distribution, sale, or use of such software, or of products containing such software, in its territory. However, this does not preclude governmental, regulatory, or judicial authorities from requiring persons of the other contracting party to make software available to them for the purposes of investigations, inspections, examinations, enforcement actions, or judicial or administrative proceedings. The Singapore–UK DEA contains a similar requirement for algorithms expressed as source code.

Digital identity is addressed in the DIFAP, ADM 2025, and BSBR, as explained in Chapter 4. It is also prioritised in Article 8.61–S of the UK–Singapore DEA, Article 29 of the Singapore–Australia DEA, and Article 7.1 of the agreement with Chile and New Zealand. These work to promote compatibility and interoperability between digital identities by developing frameworks and common standards, protecting digital identities, supporting international frameworks, identifying and implementing use cases, and exchanging knowledge and expertise on best practices. Singapore’s DEA website provides an example of how a government-managed digital identity for businesses and employees can significantly streamline business processes, such as company registration and opening corporate bank accounts (Ministry of Trade and Industry, Singapore, 2023).

AI is integral to digital integration; its applications are vast and diverse, ranging from digital marketing to agriculture, Industry 4.0, health care, and education (Ismail et al., 2022; Kim, 2022; Mogaji, Soetan, Kieu, 2021; Yang et al., 2022). Furthermore, the development of deep learning models in natural language processing in recent years has led to dramatic improvements in translation, summarisation, and document-generation capabilities, with the prospect of transforming back office and professionals’ work. There are still many aspects of AI that require policy intervention, such as in the biases and prejudices it brings, ethical issues, and its impact on employment.

AI is mentioned in DIFAP regional/international cooperation as ‘adopt regional policy to deliver best practice guidance on AI governance’ and in the *ASEAN ICT Masterplan 2020* final review as a project – ‘Study on ASEAN ICT Skill Standard Definition for Artificial Intelligence’ (ASEAN, 2020b). AI is referred to in Article 31 of the Singapore–Australia DEA, Article 8.61–R of the Singapore–UK DEA, and Article 8.2 of the agreement with Chile and New Zealand where AI technologies are recognised as generally striving to promote the adoption of ethical and governance frameworks that support the trustworthy, safe, and responsible use of its technologies.

FinTech is a generic term for innovations that combine financial services with information technology. A familiar example is the use of smartphones for money transfers and payments. FinTech expands the inclusion of financial services to many unbanked people in developing countries, especially vulnerable groups living mainly in rural areas far from formal financial institutions (Setiawan et al., 2021). It also improves the financial services industry itself (Sari, 2023). Furthermore, it has the potential to challenge traditional banking by revolutionising the financial services sector (Jugurnath, Hemshika, Štraupaitė, 2023).

FinTech is described in the ACRF's 4e as 'providing digital platform and related policies for promoting MSME digital upskilling and providing digital technology and fintech to access markets'. The Singapore–Australia DEA has a similar approach in Article 32. The Singapore–UK DEA also encourages the use of FinTech to support innovation in financial services in Article 8.53(2). Meanwhile, the agreement with Chile and New Zealand encourages parties to promote cooperation between FinTech industries through Module 8. Parties recognise that effective cooperation on FinTech requires the involvement of businesses.

5.2. Strengthening the ASEAN Coordinating Committee on E-Commerce and Digital Economy

The ACCEC was established in November 2016 and renamed the ASEAN Coordinating Committee on E-Commerce and Digital Economy (ACCED) in September 2022. In the course of its progress, the ACCEC has been involved in the preparation and publication of the following documents, which have shown significant progress in the development of e-commerce and digital integration:

- (i) *ASEAN Work Programme on Electronic Commerce* (2017),
- (ii) DIF (2018),
- (iii) ASEAN–Australia Digital Trade Standards Cooperation Initiative (2018),
- (iv) AAEC (2019),
- (v) DIFAP (2019),
- (vi) ADII (2021),
- (vii) *Work Plan for AAEC* (2021), and
- (viii) Feasibility Study of ASEAN Trust Mark Scheme (2022).

The ACCED's role is critical to the implementation of current initiatives and promotion of future digital integration, as the *Work Plan for AAEC* points out. It has been working in the field of the digital economy since its early days, and the name change to the ACCED does not indicate that its mandate will be extended in the future but rather reflects its actual mandate. However, it can be argued that the current scope is still insufficient given the power of the digital economy to transform society. This section discusses the need to strengthen the ACCED's coordination capacity and scope of jurisdiction by identifying the areas of the digital economy that are weakly addressed.

Financial inclusion is an initiative of the ASEAN Working Committee on Financial Inclusion (WC-FINC), and the link with the ACCED is not clear at the moment. The working committee promotes innovative digital finance and digital financial literacy as well as prepares the ASEAN e-Payment Readiness Index. There is no mention of it in the DIFAP; the ACRF has two initiatives by it, to 'promote innovative digital finance and digital financial literacy' and the ASEAN e-Payment Readiness Index.

Digital financial inclusion is as fundamental to the digital economy as ICT infrastructure and cybersecurity; it maintains banking stability in AMS (Banna and Alam, 2021). Furthermore, financial inclusion has a positive impact on the growth of manufacturing firms with low levels of access to credit (Nizam et al., 2020). It can promote inclusive and sustainable economic growth and stimulate the formalisation and growth of MSMEs through access to financial services (Yang and Zhang, 2020). Digital financial inclusion can help increase real incomes and accelerate growth in the ASEAN region.

The inclusiveness of the digital economy is another area where the relationship to the ACCED has remained unclear. Efforts to address rural areas in the DIFAP have been limited to the provision of broadband access, and there has been no focus on how to extend the digital economy (e.g. e-commerce) to rural areas. There are no initiatives on gender in the DIFAP as well. In the *Work Plan for AAEC*, the term 'rural' is mentioned once, and 'gender' is not mentioned at all. This is in stark contrast to 'ACCEC' which is mentioned 100 times and 'SMEs' 31 times. In fact, the digital gender divide has only recently been explicitly addressed in ASEAN policy programmes (Marsan and Say, 2021). In 2020, the ASEAN Leaders' Special Session at the 36th ASEAN Summit on Women's Empowerment in the Digital Age was held, recognising the disproportionate impact of COVID-19 on women and girls, including loss of employment and economic livelihoods and gender-based violence; empowerment through the ACRF and other means was discussed. For ASEAN to ensure that the adoption of Industry 4.0 technologies will be inclusive and not lead to further marginalisation, it is further indicated in the *Consolidated Strategy on the Fourth Industrial Revolution for ASEAN* that ASEAN must continuously reskill and upskill its labour force, particularly the marginalised (ASEAN, 2021d). Sey and Kingsley (2022) indicated that women's inequality is acknowledged by the media, academics, and policy rhetoric as a critical issue in the ASEAN digital economy. Moreover, people with disabilities sometimes have their voices ignored or dismissed (Cashmore and Crosta, 2022).

The environment and energy sectors are areas where the digital economy and technology can make significant changes and are directly related to the sustainability of the digital economy itself. Scoping is important to avoid raising the cost of coordination excessively. Therefore, the ACCED and SEOM should consult on which areas of the digital economy and Industry 4.0 to which their jurisdiction should be extended, with a focus on outcomes.³

Coordinating the number of framework documents over the digital economy is also an important jurisdiction of the ACCED. In 2020, a move was proposed from a long-term blueprint to a 3-year plan (ASEAN, 2020b). This is based on the notion that 5 years is too long to keep pace with changes in digital technology. Conversely, the dramatic increase in the 2020–21 framework document that occurred in ASEAN – albeit aimed at recovering from COVID-19 – was clearly an overreach. The ACCED needs to be able to better coordinate how it will summarise the initiatives to date and develop a new framework document for post-2025.

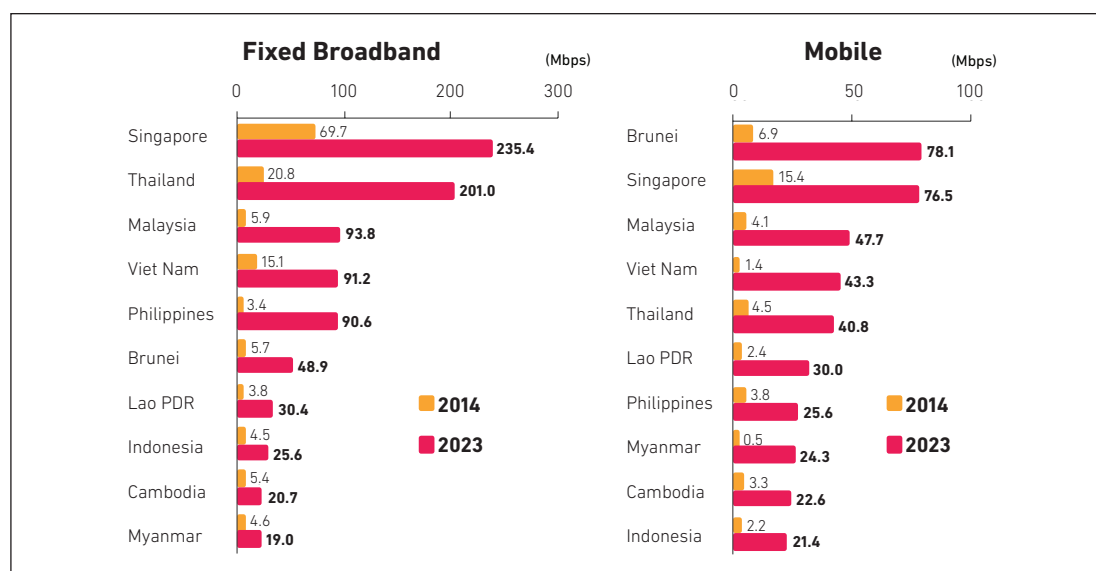
³ This is also related to the question of who will oversee Industry 4.0 strategy. The Consolidated Strategy on the Fourth Industrial Revolution for ASEAN recommends the formation of a task force with a coordination function (ASEAN, 2021d).

5.3. Infrastructure

The development of digital infrastructure in ASEAN is still in its early stages (Chia, 2016). Lack of adequate digital infrastructure and digital literacy issues have been identified as major barriers to the implementation of Industry 4.0 (Mueller, 2019). One of the factors contributing to the digital divide in AMS is broadband speeds, both fixed and mobile. Higher mobile and fixed broadband usage correlates with higher average incomes and higher GDP over time⁴ (ITU, 2020). According to Purnama (2018), there is a two-way causal relationship between fixed broadband penetration and economic growth in the AMS.

Disparities in speeds for both broadband and mobile still exist amongst AMS. However, it should be pointed out that AMS have made essential improvements in developing ICT infrastructure. Figure 5.1 shows a comparison of fixed broadband and mobile speeds in the AMS in 2014 and 2023. Dramatic speed increases are observed in each AMS, particularly in mobile data. Myanmar’s mobile data speeds have increased 50-fold in 9 years, for instance. This shows that the AMSs have regulated the market well, encouraging competition while taking care to provide universal service and encouraging market players to invest in telecommunications infrastructure much faster than the growth in users and usage.

Figure 5.1 Average Download Speed in ASEAN



Lao PDR = Lao People’s Democratic Republic, mbps = megabits per second.

Source: Chung (2014) and Ookla, Speedtest, <https://www.speedtest.net>

⁴ ITU, Economic Impact of Broadband, Digitization and ICT Regulation, <https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Economic-Contribution.aspx>

Usage prices are also important. In 2018, the United Nations Broadband Commission for Sustainable Development set an updated affordability target of reducing the price of entry-level broadband services to below 2% of monthly gross national income per capita by 2025. An Alliance for Affordable Internet report showed that there are significant differences in broadband speeds and costs within AMS, however. The average cost of fixed broadband in AMS is 3.5% of monthly income, above the affordability target of 2.0% set by the commission (A4AI, 2021). Myanmar has achieved its 2021 broadband target through data-only mobile broadband affordability. Cambodia, which met its 2020 target, did not meet its 2021 target. The lowest price for 2-gigabyte mobile data was in Singapore, at less than 0.2% of the average monthly gross national income per capita (ITU, 2022).

5.4. Linking the Formation of the Framework to Its Actual Effects

Ultimately, the frameworks on the ASEAN digital economy must be reflected in the actual policies implemented by AMS and contribute to businesses and livelihoods. While individual AMS initiatives are beyond the scope of this analysis, this book will only point out the importance of having this perspective in the following examples.

Singapore published *Guidance for Use of ASEAN Model Contractual Clauses for Cross Border Data Flows in Singapore*, in line with *ASEAN Model Contractual Clauses for Cross Border Data Flow* in 2021. The ASEAN clauses include provisions on data protection, data security, and data processing, which can be used by data exporters and importers to ensure the protection of personal data during cross-border transfers. These provisions are based on the principles of the *ASEAN Framework on Personal Data Protection*, which strengthens the protection of personal data in AMS and promotes cooperation amongst the participants in the framework (ASEAN, 2016a). The framework contains provisions on cross-border data flows and recommends that overseas transfers should either obtain the consent of the individual or take reasonable steps to ensure that the organisation to which the data are transferred protects personal data consistent with these principles. This can be achieved through contractual arrangements such as standard contractual clauses or binding corporate rules.

The guidance recommends the use of the ASEAN model contractual clauses as the basis for cross-border transfers, with the following clarifications and amendments to Singapore's personal data protection legislation:

- (i) The definition of the data subject now includes the personal data of the deceased.
- (ii) A time limit is established for notifying the source of the transfer in the event of a data breach.
- (iii) The data breach is not a breach of the data subject's right to privacy.
- (iv) An addendum of additional terms is not necessary in relation to Singapore law.

The ASEAN model contractual clauses do not promise anything that will immediately change national legislation. In fact, few AMS have explicitly indicated contracts as a requirement to be met when transferring personal data out of the country. However, it is possible that such an ASEAN initiative – and Singapore's initiative – will influence cross-border business practices in each AMS and subsequently positively impact AMS legal systems. The adoption of such model clauses may lead to reduced negotiation and compliance costs and increase time efficiency while protecting personal data during cross-border transfers (Wang and Cao, 2021).

Another example is the ASW. The ASW implementation process has been in place since it was agreed at the 9th ASEAN Summit in October 2003. Its implementation, national agreement, and implementation took a long time. The Indonesian National Single Window (INSW) has been operational since 2007 and is an institution formed through the encouragement of ASW. The ASW Steering Committee reported on the success of the ASW trial through a coalition approach between Indonesia and Malaysia, and the system was planned to be expanded to other AMS. However, it was not until early 2018 that the implementation of the e-certificate of origin Form D was officially declared within the ASW framework.

It was realised that the implementation of NSWs would be challenging, but at the same time, it was envisaged that the greatest benefit would come from introducing NSWs as part of the process towards the ASW, rather than from introducing the ASW itself (ADB and ADBI, 2015). Officials stated that the main constraints were institutional rather than technical. A strong national lead agency needed to coordinate and consult with stakeholders, and a high level of government support was required. The effectiveness of an NSW is often illustrated by Viet Nam. Its NSW, which has been fully deployed at Noi Bai International Airport, has significantly reduced customs clearance times from 3–6 hours to less than 10 minutes (Thuy, 2020).

The introduction of e-certificate of origin Form D is a major step forwards in improving trade facilitation and facilitating logistics within the ASEAN region, as well as reducing costs incurred during the import and export process. As discussed in Chapter 4, by the end of 2019, all had joined ASW live operations. Business actors are able to exchange certificate of origin data electronically through the e-form D scheme, which allows acceleration of the issuance of goods, reduction of the number of manual/hard copy documents, and acceleration of the availability of goods on the market. In addition, as mentioned above, extensions are planned, including the future exchange of trade-related documents such as the ASEAN Customs Declaration Document, e-phytosanitary certificates, and e-animal health certificates through the ASW. Linkages with dialogue partners are also proposed, but these will take time to be realised. At the same time, however, it is a good example of how ASEAN has and will continue to tackle difficult and important issues over time.

6. Conclusions and Key Recommendations

Since the adoption of *ASEAN Vision 2020* in 1997, digital integration has evolved as a key ASEAN initiative. ASEAN has developed various documents in support, including frameworks, roadmaps, agreements, master plans, work plans, and action plans. The *e-ASEAN Framework Agreement* in 2000 was one of the first documents to facilitate the liberalisation of trade in ICT products and to promote the growth of e-commerce. The *AEC Blueprint* in 2007 initiated the formation of an economic community and was succeeded by the *AEC Blueprint 2025* in 2015. The *ICT Masterplan*, which initially concentrated on the ICT sector, was extended from the ICT sector to the digital economy sector with the 2015 revision and the *ASEAN Digital Masterplan 2025* in 2021. Also, after the establishment in 2016, the ACCEC under the guidance of SEOM led the way in issuing framework documents on digital integration. The nature of the digital economy, which goes beyond ICT to include the wider digitalised economy across which digital transformation spans, has meant that convergence and collaboration between the ICT sector and ICT-enabled economic sector has been essential.

One of the conclusions is that ASEAN efforts towards digital integration cannot be understood solely in terms of specific documents. The five post-2019 key documents – the DIFAP, ACRF, ADM 2025, BSBR, and *Work Plan for AAEC* – comprehensively shape ASEAN's current efforts in digital integration. Of these, the DIFAP has the broadest scope.

ASEAN's digital integration has been treated in a more integrated manner, with new and important concepts added, and steady action is being taken on each topic. It includes the objectives of enhancing interoperability amongst AMS; developing infrastructure within each AMS; accelerating digital innovation; developing human resources; supporting new AMS through capacity building; and contributing to existing industries, livelihoods, and the growth of nations. Some initiatives, such as the ASW, have been ongoing as part of ASEAN economic integration, but their importance in digital integration has only been recognised recently. The concept of ASEAN's digital integration has also expanded into new areas such as cross-border transfer of information by electronic means, location of computing facilities, and cybersecurity. In addition, unique initiatives such as an interoperable QR code framework are being discussed to promote interoperability amongst AMS. The BSBR used 'digital economy integration' in its title, while ASEAN digital integration has already become synonymous with digital economy integration. Moreover, going back to the traditional definition that ICT does not include e-commerce but the digital economy, it could be argued that integration of the digital economy sector was envisaged as a concept at the time of the *e-ASEAN Framework Agreement* in 2000.

The next milestone is the establishment of the DEFA and the Post-2025 Agenda. ASEAN's digital integration is expanding and changing as technology advances and spreads and will continue to evolve and to change with the DEFA, Post-2025 Agenda, and various individual frameworks. ASEAN has combined legally binding agreements and protocols with non-binding framework documents to maintain flexibility and effectiveness, and this trend will continue to be a strength.

ASEAN is still in the early stages of developing a digital economy, and each AMS is at a different level of readiness for digital economy integration. Some AMS need additional support to implement digital economy initiatives. As elements to be discussed in the DEFA and Post-2025 Agenda, this book discussed e-invoicing, competition policy, submarine cables, data localisation, data innovation, open government data, source code, digital identity, AI, and FinTech. These have already been discussed in the ASEAN framework document and are expected to accelerate catch-up. The ACCED, which has been renamed from ACCEC, stated that the digital economy is its jurisdiction and will also play a decisive leading role in future digital integration. Financial inclusion and digital inclusion, on the other hand, currently have no clear relationship with the ACCED, and therefore the ACCED's scope needs to be expanded and its coordination capacity strengthened. The book highlights the importance of developing digital infrastructure in ASEAN to support the growth of the digital economy and to ensure that all AMS can benefit from digital integration. Despite ongoing efforts, there are still significant gaps in digital infrastructure, such as broadband speed and cost issues.

The following are the key policy recommendations:

Establish a common understanding of ASEAN's digital integration. Digital integration is defined differently in various documents. While the scope of digitalisation can be extended to virtually all human activities, the scope of ASEAN digital integration needs to be defined and shared with relevant sectoral bodies. This should be determined in terms of what kind of digital integration can maximise ASEAN's strengths and uniqueness, thus this digital integration will be region-specific. It also needs to be recognised that this definition and scope will change as technology changes and spills over into people's lives.

Accelerate towards the DEFA and Post-2025 Agenda. The conclusion and signing of the DEFA will be the next milestone. The BSBR states that negotiations on the DEFA would commence by 2025, and the Chairman's Statement of the 40th and 41st ASEAN Summit in 2022 changed the date for the commencement of negotiations on the DEFA to 'as soon as'. This means that it is now more likely that the DEFA can be signed before 2025. In this case, there will be two milestones: the DEFA and the Post-2025 Agenda. The Post-2025 Agenda envisages the succession of the ADM as well as ASEAN community blueprints and MPAC. In this context, it is vital that elements such as those addressed in Chapter 5 are incorporated at a high level to accelerate digital integration. Moreover, it is crucial that ASEAN develops an action plan for the DEFA, like the *Work Plan for AAEC*, to ensure effective implementation and progress towards digital integration goals.

Strengthen the ACCED. Since the establishment of the ACCEC in 2016, there have been many ACCEC-led developments in digital integration. Going forwards, the ACCED, which was renamed from the ACCEC, will continue to lead digital integration in ASEAN. The ACCED's scope should be expanded to financial inclusion and digital inclusion issues. It should also encompass more cross-cutting issues and strengthen its coordination capacity to streamline issue identification and implementation capabilities. Coordination ranges from setting and disseminating the common understandings mentioned above and optimising the actions, enhancing the monitoring function, and strengthening the communication strategy described below.

Redefine the DIFAP. The analysis of the five overarching framework documents in 2019–2021 reveals that the DIFAP has the broadest scope. Meanwhile, the new documents make the DIFAP actions more specific. To ensure effective coordination and progress towards digital integration goals, current initiatives in the five framework documents should be consolidated and optimised. This could be done through a work plan for the above-mentioned DEFA. At the same time, it is essential that the next ADM retains its future-oriented characteristics but has a scope as broad as the revised DIFAP, with ACCED input.

Update ADII surveys. A monitoring function is essential for optimising resources and achieving maximum impact. The ADII is the best tool for understanding the status of digital integration and is useful for identifying gaps within ASEAN and East Asia. The ADII should be carried out on a regular basis as per its stated aim. Updating the ADII survey will help understand the economic and sociological effects of digital integration along with implications, which is important for ASEAN policymakers and governments. Meanwhile, in compiling the index, the ADII only uses data published by third parties that have a clear methodology, are readily available, and regularly published (USAID and ASEAN Connect, 2021). Therefore, it cannot be used to monitor the effectiveness of actions in the DIFAP or other ASEAN frameworks. In addition to outcome-based surveys such as the ADII, there is a need for output-based surveys to monitor the current state of legal and institutional arrangements in each AMS.

Recognise the importance of data in the digital economy. The digital economy is data-driven. Data innovation and open government data are key topics in the DEFA and Post-2025 Agenda. These elements, which are in Singapore's DEAs, highlight the significance of addressing the challenges associated with enhancing data usability while protecting personal data. Exploring the balance between data protection and utilisation is crucial to seizing opportunities in the data-driven world. At the same time, data biases and prejudices must be addressed, and ethical aspects must be taken into account. To address this issue, the ADII's 'Pillar 2: Data Protection and Cyber Security' should include aspects of promoting data utilisation.

Continue to develop ASEAN digital infrastructure. It is important to support the growth of the digital economy and to ensure that all AMS and people can benefit from digital integration. This includes addressing disparities in digital infrastructure, such as broadband speed and cost issues. AMS have been delivering significantly faster mobile data transmission speeds for many years. Yet while leading countries in the region have achieved greater speed gains, gaps between AMS still exist. While the development and diffusion of mobile communications has given rise to the development of e-commerce, online delivery services, and ridesharing, faster speeds are needed for technological innovations such as data innovation. In addition, the number of internet users is growing rapidly but leaves room for further growth. It will be necessary to encourage technical and market competition between fixed wireless access, satellite broadband, and mobile data services to achieve universal service and last-mile connectivity (ASEAN, 2021b).

Conduct regular consultations with users. The ASEAN framework documents, whether binding or non-binding, should always be seen from the perspective that they will ultimately be reflected in AMS policies. To this end, ASEAN should conduct regular consultations with users, including MSMEs, digital start-ups, and consumers, to ensure that their perspectives are included in the development of digital integration policies. Policymakers can better design and implement policies that are more responsive to user demands by understanding user wants and preferences through the lens of the user. Involving users and stakeholders in the creation of policies that affect them can also contribute to the building of trust in the policymaking process.

Develop a communications strategy. ASEAN should develop a communications strategy to raise awareness of the benefits of digital integration. This should include providing information on how digital integration efforts have contributed to real businesses and people's lives. A focus on improving women's participation in the digital economy could also be a step towards changing attitudes. A communication strategy will also help establish a common regional understanding in the policy responses needed to make the most of digital for 2025 and beyond. If there is a consensus on the significance of intellectual property rights protection, consumer protection, connectivity, and e-payments, regional cooperation will greatly boost the region's digital trade, as well as the digital economy itself. In addition, it is important to communicate ASEAN advancements in digital integration to dialogue partners and the world. A uniqueness of ASEAN's digital integration is that the scope of ASEAN efforts is, in part, broader than the most advanced DEAs. Identifying ASEAN specific strengths and constraints will be helpful in working with dialogue partners. As well as informing dialogue partners of ASEAN's assistance needs, dialogue partners can also learn from ASEAN.

These key policy recommendations are only those that have been derived from this analysis in terms of accelerating ASEAN's digital integration. ASEAN will be required to implement all actions in the five framework documents discussed in Section 4.2 and the Appendix, including those actions in data protection, personal data protection, cybersecurity, digital education and skills development, and SME digitalisation.

In this book, all documents and discussions observed were within ASEAN, which means that the scale and extent of digital integration in regions and countries outside of ASEAN were not taken into account. Therefore, future research may need to extend beyond ASEAN to obtain more comprehensive results that would be useful for research, analysis, and development of digital integration. It may be helpful for future research to examine the efforts of the World Trade Organization and international forums in digital integration since they play a crucial role in shaping the rules and regulations governing digital trade and the digital economy. Those national initiatives within AMS could also provide emerging issues for further research, but this study does not discuss such initiatives except in the context of linking the framework formation to actual effects. Furthermore, even if limited to ASEAN digital integration documents, several documents involve dialogue partners and international organisations in their formulation, while this study does not make sufficient reference to the forms and patterns of cooperation with other organisations. Limitations indicate a need for further research beyond the scope of ASEAN and a need to consider the efforts of other institutions in promoting digital integration policies and regulations.

In conclusion, through its initiatives, ASEAN is not only one of the fastest-growing economies in the world but has also established itself as one of the fastest-growing regions in the world in terms of internet markets and digital economy (ASEAN, 2021e). This study clearly indicates that ASEAN efforts have accelerated in recent years. Despite facing various challenges, ASEAN has demonstrated its ability to identify challenges. As 2025 approaches – a critical year for both the community and digital integration – it is imperative that ASEAN takes proactive steps to expedite digital integration and to fully realise the potential of the digital economy.