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Frameworks, Masterplans, and Roadmaps: ASEAN's Digital Economy Aspirations

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ABSTRACT
Given its impressive potential, ASEAN's digital economy deserves careful attention. This is especially the case given how the rate of adoption of digital services accelerated sharply during the COVID-19 pandemic. To analyse ASEAN's approach and challenges in this area, this paper discusses the key takeaways from three recent ASEAN policy documents – the ASEAN Digital Masterplan, released in January 2021, the ASEAN Digital Integration Framework Action Plan 2019-2025, endorsed in October 2019, and the Bandar Seri Begawan Roadmap, endorsed in October 2021. The goals of this paper are primarily descriptive rather than analytical, providing a more general analysis of the shape and intent of the policy documents rather than their intricate details. This paper will also discuss how analysts should proceed to further analyse ASEAN's digital economy policy documents in a more detailed fashion. The paper then gives two policy recommendations, before concluding by reaffirming the need for ASEAN to take strong action to achieve the vision set out in ADM2025.

KEYWORDS: ASEAN, ASEAN Digital Masterplan 2025, ASEAN Digital Integration Framework Action Plan 2019-2025, Digital Economy, Southeast Asia, Bandar Seri Begawan Roadmap

1. Introduction

2021 was a fruitful year for the ASEAN digital economic policy landscape. In October 2021, the ASEAN Economic Community Council officially endorsed the Bandar Seri Begawan Roadmap: An ASEAN Digital Transformation Agenda to Accelerate ASEAN's Economic Recovery and Digital Economy Integration (BSBR). The BSBR highlights "existing ASEAN initiatives that are crucial in supporting ASEAN's ongoing digital integration", in order to ensure a "seamless and secure flow of goods, services and data is underpinned by enabling rules, regulations, infrastructure and talent" (ASEAN 2021b; Ministry of Trade and Industry 2021). Yet, as primarily a consolidation of earlier initiatives and new efforts, BSBR should be seen in the context of earlier policy documents. In particular, the ASEAN Digital Masterplan 2025 (ADM2025) was unveiled following the inaugural ASEAN Digital Ministers Meeting in January 2021, and is, up to the point of writing, the most detailed policy document relating to the digital economy which ASEAN has ever produced (ASEAN 2010). The ADM2025 itself builds on the policy goals of the ASEAN Digital Integration Framework Action Plan 2019-

2025 (ADIFAP). Endorsed in October 2019, ADIFAP, like BSBR, consolidates previous initiatives while introducing novel pursuits such as digital identification.

While perhaps initially appearing tedious and repetitive, the overlapping nature of these documents is by design. Each ASEAN document functions as an incremental building block of the regional policy landscape, building upon the work of their predecessors even as their framing of the challenge and their prioritisation of efforts change. When analysed together, these policy documents suggest how ASEAN, as an inter-governmental organisation[1], can pursue its aspirations to develop the regional digital economy. Hence, to observers who are keen to understand how the region can capitalise on the potential of digitalisation, these documents are worth a closer look.

This paper discusses the key takeaways from three recent ASEAN policy documents which contain more useful points of comparison – ADM2025 (ASEAN 2021a), released in January 2021, ADIFAP (ASEAN 2019), endorsed in October 2019, and BSBR (ASEAN 2021c), endorsed in October 2021. The goals of this paper are primarily descriptive rather than analytical. It avoids a deep dive into the substantive content of the documents, focusing instead on a surface-level analysis of the shape and intent of the policy documents listed. This does not imply that a more rigorous analysis is unnecessary – on the contrary, this paper is written with the understanding that deeper analyses are to follow, and provides some pointers as to how such analyses could be undertaken in the discussion section.

This paper will proceed as follows. After this introduction, a short summary of ASEAN's digital economy initiatives and progress is provided. From there, the paper discusses the key takeaways of ADIFAP and ADM2025. Specifically, it looks at how ADIFAP's coordinating role is significant, and how ADM2025 represents important developments in a longer process, signals intent, and is heavily contextualised. More attention is given to ADM2025 since it is the more recent, and more detailed document, even if it does not cover all the areas raised by ADIFAP. The paper then goes into a discussion of the two policy documents and ASEAN in general, putting forward some pointers on how analysts should proceed with assessing or analysing ASEAN's digital economy policy documents. The paper then gives two policy recommendations, before concluding by reaffirming the need for ASEAN to take strong action, if it is to achieve the vision set out in ADM2025.

2. Summary of ASEAN's Digital Economy

Amid investor excitement about ASEAN's economic potential, the region's digital economy stands out as an area of particular interest. The gross merchandise value of the region's digital economy grew from US$31 billion in 2015 to over US$100 billion in 2020

[1] Those unfamiliar with ASEAN might not be familiar with its structural features and limits. It is imperative to understand the regional organisation's features before analysis can occur. Given consistent comparisons to the European Union (EU), which is based on a different context and with a different mandate, there is a need to clarify potential misunderstandings or misconceptions. Annex A therefore provides some discussion of ASEAN's structural features and limits. It is imperative to understand the regional organisation's features in order to appropriately analyse ASEAN.

alone, with economies such as Vietnam and Indonesia consistently growing at double digit-rates (Google, Temasek and Bain 2020, p.31-32). Online retail growth is now faster than Brazil, China, or India, and e-commerce sales are expected to keep up with these countries in the coming years (Facebook and Bain 2021, p.13). This rapid growth has been fuelled by the spending power of ASEAN's growing middle class, as well as their increasing online habits.

Unsurprisingly, the rate of adoption of digital services accelerated sharply during the COVID-19 pandemic. While 100 million Southeast Asians went online between 2015 and 2019, there was a surge of 60 million new users between 2020 and the first half of 2021 as the pandemic disrupted socio-economic routines; Southeast Asia now has an online consumer population of 350 million out of a total population of 660 million (Google, Temasek and Bain 2021, p.14-15). This trend shows no signs of abating either, with two-thirds of Southeast Asians polled by Google, Temasek and Bain reporting that they were spending more time online in 2021 compared to 2020, while Facebook and Bain report that by the end of 2021, almost 80% of 15-year-olds and above in Southeast Asia will become digital customers (Facebook and Bain 2021, p.5). The digital economic outlook for the region has improved accordingly. From expecting a gross value of US$240 billion by 2025 in the 2018 edition of the e-Conomy SEA report by Google, Temasek and Bain, the 2021 edition of the report now expects the gross merchandise value of ASEAN's digital economy to exceed US$360 billion by the same year (Google, Temasek and Bain 2021, p.8).

In addition, other aspects of ASEAN's regional economy are poised to receive a boost from COVID-induced digitalisation. A report by McKinsey found that COVID-19 had accelerated the digitalisation of many aspects of the economy by a factor of 10 in the Asia-Pacific (Puthucheary 2021). Indeed, earlier predictions that ASEAN's digital economy would add US$1 trillion to regional GDP by 2025 (Bain & Company 2018) might have to be revised upwards under these trends, underscoring the digital economy's utility as an engine of growth.

Table 1 – Excerpts from the UNCTAD B2C e-commerce Index 2020 (Source: UNTCAD)

2020 Rank	Economy	Share of individuals using the internet	Share of individuals with an account	Server security	UPU postal reliability	Overall Score
4	Singapore	89	98	94	97	94.4
30	Malaysia	84	85	71	85	81.3
42	Thailand	67	82	59	97	76.0
63	Vietnam	69	31	64	83	61.6
83	Indonesia	48	49	60	43	50.1
96	Philippines	65	35	39	40	44.7
101	Laos	26	29	30	78	40.6
117	Cambodia	40	22	42	21	31.1
130	Myanmar	31	26	22	17	24.0

However, ASEAN's digital landscape is not devoid of challenges. The quality of physical infrastructure varies drastically between member countries, with internet speeds in Singapore being on average 15-to-16 times faster than those in Myanmar (Chen and Ruddy 2020, p.2). Talent acquisition, already an obstacle to digitalisation due to a shortage of skilled workers, was further inflamed by the disruptions to labour mobility that occurred under COVID-19. The UNCTAD Business-to-Consumer (B2C) e-commerce index for 2020 showed a wide variation in scores for ASEAN countries. While Singapore was ranked 4th of 152 countries, with high scores in all the assessed areas, only 3 ASEAN countries were placed within the top 50. Many did not even achieve a score of over 50 on the index.

Cybersecurity issues and data privacy are equally important and persistent. As more ASEAN citizens come online, they will become exposed to cyberattacks targeting their data and money; the SolarWinds supply chain breach in late 2020 shows how a single compromised supplier could cause a domino effect that affects far more organisations and victims down the line (Cybersecurity Agency of Singapore 2021, p.21-23). Efforts at both the business and governmental levels will be needed to address these vulnerabilities. In addition, ASEAN has made some steps forward in the realm of data privacy with the approval of the Data Management Framework (DMF) and Model Contractual Clauses for Cross Border Data Flows (MCCs) in January 2021. However, more work still needs to be done to better streamline and manage differences in data privacy laws in ASEAN countries.

3. ASEAN's Policy Documents – ADIFAP, ADM2025, and BSBR

With a summary of ASEAN's digital economy landscape, we may now move on to examine the three policy documents in question – the ASEAN Digital Integration Framework Action Plan 2019-2025, the ASEAN Digital Masterplan 2025, and the Bandar Seri Begawan Roadmap. While ASEAN has for over two decades recognised the importance of the digital economy, emphasis and attention on the digital sector has been greatly ramped up in the past few years. This makes the three policy documents deserve greater attention. The ADIFAP and ADM2025 play mutually supportive roles and synergise with each other, with ADIFAP operating as is the overarching umbrella document for digital integration, and sectoral frameworks such as ADM2025 reside under this umbrella. The BSBR, in comparison, is an effort to highlight the initiatives that would deliver the greatest impact towards helping the region's recovery from COVID-19 (ASEAN 2021c, p.3). As such, this section will describe the three documents and the key takeaways from each.

3.1 ASEAN Digital Integration Framework Action Plan 2019-2025

The ASEAN Digital Integration Framework (ADIF), was finalized and adopted by the ASEAN Coordinating Committee on Electronic Commerce (ACCEC) in 2018, and the ASEAN Digital Integration Framework Action Plan (ADIFAP) was implemented in 2019. The ADIFAP is meant to run till 2025, and sets out the timeline, outputs, and implementing bodies that are tasked with each component of the initiative. The overarching objective of ADIFAP is to facilitate the integration of the digital economies of ASEAN member states, to allow ASEAN to reap maximum benefit from its potential in the digital economy.

The ADIFAP (and ADIF) identifies five policy areas and six priority areas, compiled in Table 1 below. The five policy areas are: (1) Digital connectivity and affordable access, (2) Financial ecosystem, (3) Commerce and trade (4) Workforce transformation, and (5) Business ecosystem. The six priority areas are to: i. Facilitate seamless trade; ii. Protect data while supporting data trade and innovation; iii. Enable seamless digital payments; iv. Broaden digital talent base; v. Foster entrepreneurship, and vi. Coordinate actions. All six priority areas correspond to critical barriers to integration that are meant to be addressed in the short, or immediate term, and their details are reproduced in full in Annex B.

Table 2 – Lis of Policy and Priority Areas Under ADIFAP (Source: ADIFAP)

<table>
<tr><td>Policy Areas</td><td>Digital Connectivity and Affordable Access</td><td>Financial Ecosystem</td><td>Commerce and Trade</td><td>Workspace Transformation</td><td>Business Ecosystem</td></tr>
<tr><td>Priority Areas</td><td>Facilitate Seamless Trade</td><td>Protect Data, Trade and Innovation</td><td>Enable Seamless Digital Payments</td><td>Broaden Digital Talent Base</td><td>Foster Entrepr-eneurship</td><td>Coordinate Actions</td></tr>
</table>

a. *Consolidation, Coordination, and Future Directions*

The Action Plan is a significant addition as it puts forward outputs, creates a timeline, designates implementing bodies, and outlines steps of implementation in accordance with each priority area. Most importantly, ADIFAP integrates ASEAN’s digital approach by consolidating digital economy work by ASEAN sectoral bodies and the private sector under the ACCEC umbrella, in effect functioning as a coordinating document for ASEAN initiatives relating to the digital economy. As an action plan, ADIFAP endeavours to streamline the links between the network of past policy documents and prepare the ground for future entries under its umbrella. The ADIFAP timetable clarifies the focus areas of a broad range of ASEAN initiatives, and also relates to other cross-pillar frameworks like the Masterplan on ASEAN Connectivity 2025 (ASEAN 2016), while denoting which sectoral bodies are responsible for their implementation.

The ADIFAP also runs concurrently with future ASEAN policy documents, including ADM2025, which is heavily referenced in BSBR. These clarifications are not insignificant, given the criticisms of ASEAN’s disorganised “noodle bowl” of policy documents (see Jones and Hameiri 2020, p.198). Given the consistent calls for ASEAN to harmonise digital standards and regulations to allow the ease of cross-border data flows and trade, spring cleaning efforts are welcome. This allows ASEAN to give a clear stance on its initiatives relating to the digital economy, and affords a degree of accessibility for observers, businesses, or policymakers peering into this topic.

Yet, one area for improvement in ADIFAP is its exclusion of documents relating to decarbonisation, sustainability, or climate change. Such topics were raised under masterplans such as ADM2025, which explicitly linked ASEAN efforts to address climate change and grow the digital economy, but conspicuously absent in ADIFAP. With ADIFAP set for a review in

2022 to account for "emerging developments in the digital ecosystem" (ASEAN 2021c, p.4), the opportunity is ripe for ASEAN policymakers to establish linkages between ADIFAP and ASEAN policy documents relating to the climate change, for example November 2020's ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021 – 2025.

3.2 ASEAN Digital Masterplan 2025

Compared to the pre-COVID ADIFAP, the ASEAN Digital Masterplan 2025 (ADM2025) was published in January 2021, and is ASEAN's more recent and detailed policy document relating to digital issues thus far at over 140 pages. While building on the broader goals of preceding documents such as the ASEAN ICT Masterplan 2020 (AIM2020) and the ASEAN ICT Masterplan 2015 (AIM2015), ADM2025 is firmly rooted in the context of needing to drive ASEAN's recovery from the COVID-19 pandemic. Its vision – "ASEAN as a leading digital community and economic bloc, powered by secure and transformative digital services, technologies and ecosystem" (ASEAN 2021a, p.4) – should be seen in light of this goal. The document seeks to further the long-held goal of ASEAN integration, which was given a stronger impetus amid the pandemic.

To meet this vision, ADM2025 lists eight Desired Objectives (DOs), accompanied with 37 Enabling Actions (EAs). Specifically, ADM2025's DOs involve prioritising ASEAN's recovery from COVID-19; improving the quality and coverage of fixed and mobile broadband infrastructure; delivering trusted digital services while preventing consumer harm; creating a sustainable competitive market for digital services; increasing the supply of public e-services; using digital services to connect businesses and facilitate trade; increasing the capability of businesses and people to participate in the digital economy; and removing barriers to the use of digital services. The EAs essentially function as sub-points that support the pursuit of their associated DOs, and also recognise the cross-cutting nature of digital development challenges by noting the network of prioritisation and dependencies between EAs.[2]

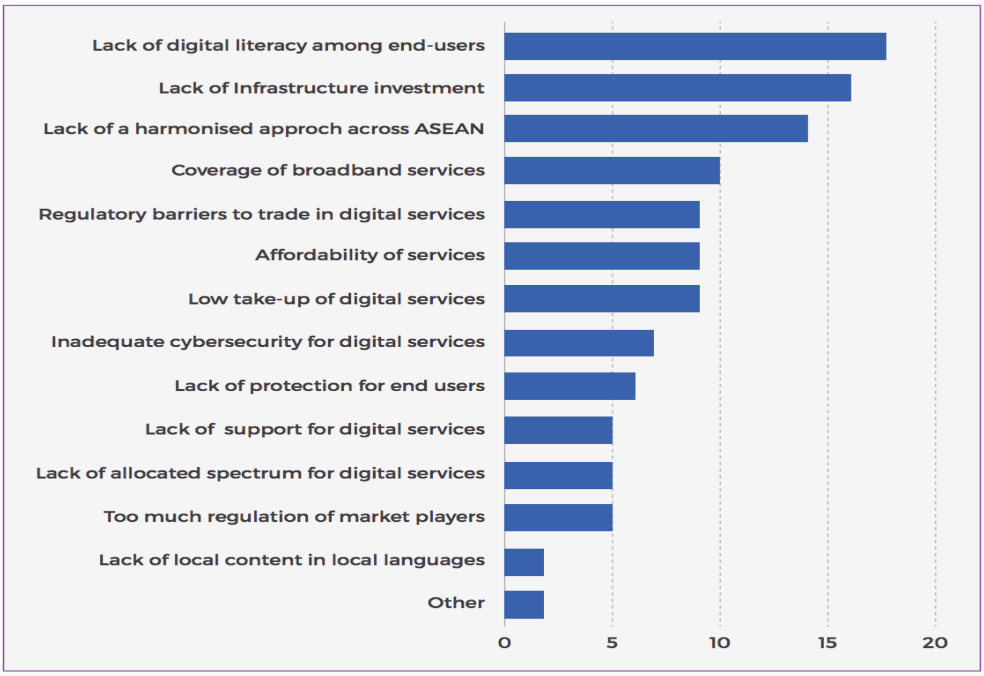
In addition, ADM2025 lists five strategic thrusts which guide the DOs and EAs: digital connectivity and infrastructure; digital transformation; resilience, trust and security; digital policy, regulation and standards; and cooperation and collaboration (p.41-42).[3] While sharing some similarities with the priority areas of ADIFAP over the larger issue of digital transformation, there is a distinct focus on building infrastructure and improving trust and regulation standards in ADM2025. As mentioned, these specific focuses are a result of prevailing circumstances, with the focus on trust and security part of efforts to combat fake news surrounding the COVID-19 pandemic (ASEAN 2021a, p.42). Yet they also suggest a greater appreciation for the factors that will support and defend ASEAN's digitalisation journey (i.e. infrastructure, cybersecurity) rather than drive it (entrepreneurship, digital talent). It can be described as a more realistic, perhaps cautious approach, touching on the issues of connectivity and security raised in Section 2.

[2] More details about the DOs and EAs are available in Annex C.
[3] The details of these strategic thrusts are reproduced in detail in Annex D.

This realistic approach is reflected in ADM2025's proposed timeline for the completion of the DOs and EAs. Some targets are ambitious, with desired completion dates in the first half of 2021 (p.32-35). These targets include developing indices that can measure the DO5's first EA – "ASEAN wide reporting on the level of use of e-government services in line with ITU requirements". Yet, there are two categories of projects to consider – "ASEAN level projects" and "AMS" projects (p.34), which shows ASEAN to be self-aware of its own limitations, where the pace of implementation is dependent on the capabilities of each member state.[4] A scan of the timetable reveals that most AMS efforts are not to take place until 2023 or 2024, showing a more sober and realistic ambition. A mid-term review is also scheduled for 2023, where ASEAN can adjust their timetable accordingly.

ADM2025 also consists of results based on surveys conducted by consulting company Plum, where stakeholders, including policymakers in the ICT ministries and national regulatory authorities, are polled. Questions in the survey included a mixture of checkbox and free-form responses. These survey results yield some interesting data, including what stakeholders perceive as the biggest barriers to achieving ADM2025's vision, as well as how they think ADM2025's success or failures should be judged. As a sample, the results stating the barriers to achieving its vision are shown in Figure 1 below.

Figure 1: ADM2025's list of barriers to achieving its vision (Source: ADM2025, p.52)



As shown, the most important barriers include the lack of digital literacy among end-users, lack of infrastructure investment, lack of a harmonised approach across ASEAN. These considerations generally correspond with the findings of the 2020 Google, Temasek and Bain

[4] ADM2025 is not alone in delegating the responsibility for implementing masterplans to individual member states. The ADIFAP included similar prescriptions; for example, the mapping of priority locations for broadband deployment was said to be "conducted domestically by each ASEAN member state." (ASEAN 2019, p.5)

report that talent is a crucial obstacle to ASEAN's digitalisation and were largely accounted for under the DOs and EAs of ADM2025. Yet, there are important shortcomings in the survey. It is important to note that government representatives are over-represented, taking up over 75% of the polling body (p.125). Civil society actors, who might have important insights or views on the effects of digitalisation on societal harmony or the environment, are altogether excluded. Furthermore, the composition of different member states in the poll is skewed (p.124). Thailand is heavily overrepresented, with 10 of the 38 responses coming from them. The region's largest nation, Indonesia, in contrast, only had 1 response. Philippines and Cambodia's voices were altogether excluded. As such, the results might not represent a diverse enough range of voices, and might not reflect the region's views accurately or reliably.

This paper highlights three aspects of ADM2025, which constitute important takeaways from the policy document. These are how ADM2025 is an integral part of a broader process; how subtle shift in language constitute shifts in signals of intent; and how the document is heavily contextualised.

a. ADM2025 as part of a process

Beyond ADM2025's focus on COVID-19 related challenges, it is also important to see this masterplan as an inseparable part of a larger process. The differences between ADM2025 and its predecessors, including AIM2020 and the final review of AIM2020, allow observers to see the trajectory and shifts in policy that ASEAN has adopted with regards to the digital economy, and therefore provides important context necessary to understand ADM2025. Moreover, the constant allusions to earlier documents in ADM2025 underscores their importance to the latter document. The goals and overall performance of AIM2020 are heavily referenced in ADM2025 (p.132-133), and the authors of the latter also listed certain takeaways from their consideration of the earlier document. For example, the decision to condense the number of EAs was to avoid the "spray gun approach" of AIM2020, where meaningful outcomes were limited by a lack of focus, and to bring offer some prioritisation of ASEAN's efforts (p.38). Ideally, ASEAN policymakers should improve on each successive policy document to make them more focused and achievable.

Basing ADM2025 in the context of a larger process is important as it allows observers to notice subtle, but key shifts in the priorities and desired actions of ASEAN. This can be demonstrated by referring to role of movement of human capital in building the digital economy, though there are other areas where this can also be applied. While Southeast Asia possesses numerous shortcomings in areas such as broadband access, a particular problem concerns intra-ASEAN skill gaps. Without skilled labour, member states would be poorly positioned to embark on digitalisation efforts. AIM2020 therefore noted the importance of "cross-border flows of ICT professionals in order to identify and address skill gaps" under initiative 5.1.1.1 of the Strategic Thrust 5 (ASEAN 2016). This is ostensibly to encourage the diffusion of skills and technology, where skills like the ability to operate high tech machinery from more advanced member states would be passed on and adopted by the ASEAN workforce.

Yet, ADM2025 downplayed the issue of labour mobility in favour of re-skilling the domestic workforce, dropping mentions of cross-border flow of human capital, skills diffusion, or foreign labour. The focus is instead solely on up or re-skilling, and establishment of "Centres of Excellence" to facilitate this (e.g. p.65). This approach is domestic, with a primarily inward-looking approach to addressing skilled labour shortages. Worker mobility, in contrast, was only mentioned in the context of developing common curriculum standards in ICT across ASEAN (p.27, 110, 112).

While observers might still recognise the general point, *shifts* or *changes* cannot be seen if ADM2025 is taken in isolation and not part of a broader process. Seeing ADM2025 as a process allows us to track the trajectory, and notice when particular strategies are dropped or downplayed. From there, we can seek explanations, usually with reference to the broader socio-economic or geopolitical context. To bring this back to the example at hand, we may explain this by noting how ASEAN governments anticipate that travel for work will probably not take place on a large scale in the next few years due to COVID-19, or possibly that the nativist turn in global politics has affected how they view their strategies in the digital economy. Further exploration of each explanation can be undertaken, but arriving at this position requires first seeing ADM2025 in the context of its preceding documents.

b. Shift in language, signal of intent

A crucial point that immediately jumps out is in the shift in language – while the ASEAN information and communications technology (ICT) ministers previously met under the annual Telecommunications Ministers (TELMIN) meeting, and their guiding document was AIM2020, the ministers now meet under the Digital Ministers Meeting (ADGMIN), while their latest policy document is ADM2025. Both the ministers title as well as the title of the main document produced therefore shifts from "ICT" to a broader "digital". This might appear merely a minor semantic change, but in diplomatic circles where often messages are delivered in code and are extremely subtle, they should be examined closely.[5]

Attention to detail of small semantic shifts is also important in ASEAN, where wording changes can signal significant policy shifts. The shift from "ICT" to "digital" suggests a more conscious and purposeful shift to transform their socio-economic institutions, where entire societies, and not just the ICT sectors, are digitalised. It signals a much bolder and accelerated push towards digitalisation of the entire economy and society, as opposed to focusing simply on select sectors.

This sends a signal of intent not just to actors within ASEAN, but external actors, which as mentioned are often the target audience of ASEAN. Attracting the attention of these external actors has various benefits which ASEAN generally looks out for. Extra-regional partners

[5] For example, in discussions about the Indo-Pacific, a declaration of one's position as desiring a "free and open Indo-Pacific" or a "free, open and inclusive Indo-Pacific" has an enormous difference (see, for example, Pang 2021). The former essentially excludes China, the region's largest economy, whereas the latter implicitly leaves the door open for future partners in ASEAN's Indo-Pacific vision.

might pick up on these signals, and be more inclined to deliver investments into the region or seek greater cooperation. Yet, with ADM2025 not being heavily reported in the media, it remains unclear if ASEAN has managed to achieve the attention required to attracted greater investments or cooperation in the digital sector.

c. The Importance of Context – COVID-19, Climate Change and Technological Trends

The ADM2025 is heavily based in the current social context, and highlights three key contexts that shape its vision of digitalisation – **COVID-19**, **climate change**, and **accelerating technological trends**. These three contexts are elaborated on in detail in the document, especially with relation to how they affect digitalisation (p.8-15). The rest of the document is tailored to fit and respond to these contexts. These contexts shape the aims of ADM2025, which it puts forward through its eight DOs, and accompanying set of EAs.

ADM2025 draws a heavy connection between pandemic recovery and digitalisation, where digitalisation is noted as both the result of the pandemic, as well as the solution for economic recovery. One of the various effects noted is how COVID-19 has led to a significant loss in inward infrastructural investment in ASEAN member states across the board, and has therefore hampered digitalisation. ADM2025 therefore is set up with this recognition, and sets it as a high priority to recover the lost inward investments. ADM2025 also recognises the impact of COVID-19 on inequality within member states, as "poorest in society are likely to be those hardest hit by the after-effects of the pandemic" (p.12). It states that digitalisation, or more specifically access to digital services like e-education and e-health services, will help to mitigate this issue. Overall, ADM2025 draws a link between COVID-19 every single one of the eight DOs, making it clear that COVID-19 features heavily in the thinking of ASEAN when the document was written.

While climate change is listed as the second important context, addressing it is not the top priority of ADM2025. Rather, lower carbon emissions are seen as a convenient side effect of promoting the use of digital services, as described by the "enablement ratio" (p.13). The enablement ratio is essentially the energy efficiency of a society as a result of adoption of digital technologies, where the greater adoption of digital technology leads to greater energy saved. ADM2025 states that since most other work in climate change mitigation is coordinated through other agencies or through actions in other documents, ADM2025 instead merely lists extremely modest objectives with relation to this field.

Moreover, ADM2025 calls for a reduction in the greenhouse gas emissions of the digital economies of member states, but states that the accelerating trends of more energy efficient data centres based upon renewable energy is "largely out of the control" of ASEAN member states (p.14). Instead, it is mostly concerned with having each member state adopt reporting standards, including the breakdown of the sources of energy that power its digital economy and the amount of data traffic. The plan is to use this information to monitor trends and identify issues, but not make any direct intervention and instead keep within existing trends. ADM2025 also seems to assume a link between digitalisation and decarbonisation. While this does have some support in the academic literature (see e.g. Council of Foreign

Relations 2018), the contingencies and possible shortcomings perhaps deserve elaboration. Links between digitalisation and climate change's impact on the weather patterns, labour productivity, migration, or security are not mentioned, and neither is the recent trend of online customers placing a high emphasis on the sustainability credentials of their brands account for (Facebook and Bain 2021), setting clear limits on the policy scope of this document.

The last context that ADM2025 explicitly lists is global technology trends (p.15). A list of existing trends that are expected to continue, as well as future trends that are expected to emerge, are compiled by ADM2025 and shown in the Figure 2. The implications of these trends, that stress the acceleration of the development and adoption of technology in several fields, are wide-ranging. These include changing what are regarded as standard business models, which in turn require studies to determine the appropriate regulation and education to keep up with these developments. Specifically, large digital corporations like Google and Amazon are raised as business models that will "dominate well into the future" (p.15), raising questions possible anti-competitive behaviour. This is a concern shared by the scholarly literature (see e.g. Tailor 2020). These considerations impact more than half of the DOs of ADM2025, and can therefore be seen to be a significant shaper of the document.

Figure 2: Global Technology Trends according to ADM2025 (Source: ADM2025, p.15)

Important existing trends that will continue	Future trends
Internet: Will continue to be there in its current form and evolve to provide a wide range of Cloud services.	AI: Will be very powerful in specific problem areas
Connectivity: Has mostly reached the point of delivering all we need where it is geographically available	Big Data: Valuable in delivering new insights through data analytics
Virtual Reality and Augmented Reality: VR will remain niche but AR might play a larger role	Robotics: Could automate more
Robotics: Currently widely used in manufacturing	Autonomous vehicles: Will evolve slowly and have limited impact by 2025
IoT: Will deliver productivity gains and better working devices	3D printing: Could substantially reduce time to market of new products

Two persistent concerns that accompany discussions of global technology trends are those of cybersecurity and data privacy. Speaking after the conclusion of the ADGMIN in January 2021, Malaysia's Communications and Multimedia Minister Saifuddin Abdullah said that cybersecurity was an issue that was raised by almost all the meeting's participants, and came second only to the need to improve broadband coverage in ASEAN (Bernama 2021). ADM2025 broadly addresses these issues under the third DO, "The delivery of trusted digital services and the prevention of consumer harm", through calling for cybersecurity capacity building measures and legal and regulatory reforms to better manage data. These measures would take advantage of internal platforms such as the ASEAN-Singapore Cybersecurity Centre of Excellence, which offers policy and technical training programmes to participants, and the U.S.-Singapore Cybersecurity Technical Assistance Program for ASEAN countries.

While ADM2025 is heavily based upon the current context[6], it does not detract from ASEAN's long-term trajectory of giving increasing focus on the digital economy as a site of improving economic growth and productivity, and only calls to accelerate it. That way, it does not contradict the basic thrust of ADIFAP, and can be seen as complementary. Despite being separate documents, both ADIFAP and ADM2025 essentially structure their objectives around the same cluster of topics, including infrastructural development, cybersecurity and privacy, digital skills and literacy, and facilitating seamless imports and exports. These topics are overlapping and form an eco-system that allows the digital economy to grow and flourish.

3.3 The Bandar Seri Begawan Roadmap (BSBR)

Last, but not least, BSBR aims to map out the steps that ASEAN should prioritise from its ongoing initiatives to expedite its digitalisation process (ASEAN 2021c, p.2). With three effective phases (Recovery (2021-2022), Acceleration (2022-2024), and Transformation (2025)), BSBR aspires to offer a more condensed roadmap to digitalise ASEAN, echoing the desire of the ADM2025 authors to create achievable EAs and avoid AIM2020's "spray-gun" approach.

As a result, though the prescriptions that BSBR offers are not ground-breaking, they are very achievable. The first initiative listed, regarding the use of digital solutions to verify COVID-19 test and vaccination certificates (p.3-4), is a necessary step to reopen cross-border travel, and is likely to be completed by early 2022 as a result of AMSs seeking to revive their tourism industries. Likewise, seeking to strengthen institutional mechanisms such as the coordinating mechanism for the ASEAN Coordinating Committee on e-Commerce (p.4) will necessarily be part of the ASEAN work plan on the ASEAN Agreement on e-Commerce. Even the aim to have interoperable cross-border digital payments across ASEAN by 2024 is a relatively realistic goal, with Thailand alone boasting QR code payment agreements with at least six of its nine ASEAN partners.[7]

While some observers might contend that BSBR does not bring anything new to the ASEAN policy table, and that the achievability of BSBR's proposed initiatives is due to its lack of ambition, such a conclusion would overlook the stated purpose and utility of the document. Had BSBR been another 50-page strategy document laden with nuanced shifts in

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[6] Another key context that ADM2025 bases itself in are the development in trade agreements, most especially the Regional Comprehensive Economic Partnership (RCEP). It notes the RCEP as the "most important regional trade agreement ever signed." (p.93) It references various chapters in the RCEP that relate to the digital economy, including telecommunications and e-commerce. ADM2025 states its role as to "set in motion the work required to develop the digital systems which are needed for ASEAN to participate efficiently in ASEAN trade agreements including the RCEP." In that way, it is seen as the prior to the RCEP, where it charts out the direction and steps that need to be taken for ASEAN to reap the full benefits of the RCEP. Given how many ASEAN member states, including Laos and Cambodia, are exempt from the relevant chapters in the RCEP for the next year years, these arrangements make sense (see RCEP chapter 12). It allows these member states to build up the relevant capabilities so that it can compete on fair footing with other signatories of the RCEP.

[7] Thailand's QR code arrangements will ultimately allow Thai users to use their Thai payment apps to scan and pay using QR codes from other countries and vice versa. The countries it has linked up with include Singapore (Oct 2018), Laos (Nov 2019), Cambodia (Feb 2020), Vietnam (Mar 2021), Malaysia (Jun 2021) and Indonesia (Aug 2021, to be activated in Q1 2022).

focus and new initiatives, it would certainly have been more comprehensive than its current iteration – yet it would also have added yet another complex layer to an already-crowded ASEAN digital economic policy landscape. A document that eschews new initiatives to offer a contextualised view on what existing efforts should be prioritised is a welcome development, especially when time is of the essence to revive the economies of ASEAN from a COVID-induced slump. Thus, even though it is less substantial than its contemporaries, BSBR still occupies a useful space in the ASEAN digital economic policy landscape.

Figure 3: Initiatives Under the BSBR (Source: BSBR, p.3-8)

Phase	**Description**
Recovery (2021-2022)	1) Adopt Interoperable and Secure Digital Solutions to Facilitate Cross-Border Travel
	2) Strengthen the Coordinating Mechanism and Capacities on Digital Transformation
	3) Adopt the Work Plan to Facilitate the Implementation of the ASEAN Electronic Commerce Agreement
	4) Review DIFAP 2019-2025
	5) Finalise the 1st Report of ASEAN Digital Integration Index
Acceleration (2022-2024)	1) Accelerate Existing Work on Trade Facilitation and Digitalisation
	2) Implement Interoperable Cross-Border Digital Payments in ASEAN
	3) Establish an ASEAN One-Stop IP Service and Information Platform
	4) Conduct a Study on Establishment of an ASEAN Digital Economy
Transformation (2025)	1) Work Towards the Adoption of the ASEAN Digital Economy Framework Agreement (DEFA)

4. Discussion

This paper has thus far focused primarily on description, and leaves deeper assessment or analysis to future papers. In this section, some direction is provided for the analysis that is meant to subsequently follow in separate papers. Two points are made. Firstly, the political dimension, while hidden, must be recognised and accounted for when analysing ASEAN documents relating to the digital economy. Secondly, there is a need for a more tedious country-based or comparative analysis when it comes to ASEAN, given its specific structure. These points might seem obvious to experienced hands, but given the widespread misunderstanding of ASEAN, this paper will not avoid stating them.

4.1 Holistic analyses

As with other ASEAN policy documents, both ADIFAP and ADM2025 are carefully written in an apolitical fashion, where they as far as possible do not exhibit any bias or favour towards any external political entities. This is unsurprising, given the need to gain consensus between member states, who each have their own political calculations and leanings. However, analysts and observers need not be bogged down by these diplomatic constraints, and can deliver analyses that point to the hidden political agendas, influences, or implications of ASEAN documents. This is especially the case as ASEAN has important relations with great powers, who undoubtedly shape considerations amid trends such as U.S.-China technological competition (see e.g. Segal 2020). Issues including the source of 5G networks and cybersecurity are not avoidable for ASEAN, and tech decoupling is a major issue that the foreign ministries of each member state have been publicly discussing (see e.g. Lee 2020). Far from being immune from these trends and political issues (see e.g. Anuar 2019), ASEAN is in fact perhaps the most affected region given its strategic geographical position.

In other words, analysis of ASEAN policy documents cannot be divorced from security-related developments or other ‘political’ matters. This is as technological developments and their application have become a key issue in global international relations, and the great powers themselves are not immune to taking a more wide-ranging, holistic approach to their foreign policy, where relations with specific countries are not isolated into different issue areas. Analysts should instead, as far as possible, try to deliver a holistic, multi-disciplinary approach that does not treat economic policy in a silo, unaffected or unrelated to other developments. These are issues that independent analysts, not tied to any specific government, are perhaps more well-suited to more publicly elucidate.

4.2 Country-based or comparative analyses

Given ASEAN’s structure, assessing the prospects for the realisation of ADM2025’s vision should be predicated on in-depth country-based or comparative analysis. This should be done concurrently with analysis of the links between member states, including the supply chains that link the different ASEAN member states and extra-regional partners together.

This is due to how ASEAN’s policies are implemented at the level of member states, and regional policy documents like ADIFAP and ADM2025 merely set the tone and standard (Das 2017). The “homework” is still to be carried out by member states individually, and at their own pace and capabilities (see Chen 2019). The depth and speed of implementation should therefore be expected to vary, given the differing levels of state capacity, specific spatial-geographical challenges, social issues, and political institutions that each member state has. In other words, as mentioned, because ASEAN is not a supranational organisation but an inter-governmental organisation, there is the need for an analysis of each member state that composes the organisation, and then putting together all the analysis.

To raise one example for purely illustrative purposes, Indonesia and the Philippines are archipelagic nations, where the countries are split into multiple different islands that are not easily accessible to each other. This makes the flow of goods and services more difficult, and a considerable deal of infrastructural development is required to circumvent this issue. This impacts the development of the digital economy in various ways, for example the flow of goods for e-commerce, or the ability for skilled labour to travel. This is juxtaposed to Singapore, which is not only a non-archipelagic nation, but a small city-state where transport is made a lot more convenient. This in turn facilitates the development of the digital economy industries like e-commerce. Based on this single factor, we may develop a hypothesis that would see Singapore move towards ADM2025's vision at a faster rate than Indonesia or the Philippines.

A great deal of depth can be added with country-based or comparative analyses, including quantifying to what extent these specific factors will affect rates of digitalisation and prospects of achieving ADM2025's vision. Analysis of the specific capabilities, challenges, and objectives of each member states therefore seems the logical next step when studying the digital economy of ASEAN.

5. Policy Recommendations

While ADM2025 and ADIFAP are welcome developments, they are not without issues. This section therefore provides two recommendations to achieve its vision of the digital economy – developing a more inclusive framework for assessing ADM2025, and crafting better data sharing arrangements for anti-cybercrime enforcement.

5.1 Develop a new framework of assessment

A key problem that needs to be resolved is how to assess the action that is taken by ASEAN, or how far the goals of ADM2025 are achieved.[8] While ADM2025 provides some indication of how assessment could take place (p.36), it is important to point out, as earlier done, that this is based upon surveys which are not comprehensive and present an unbalanced distribution of respondents. ASEAN should therefore collectively develop a new framework to assess how far the grouping has accomplished its ambitious aims in its policy initiatives relating to the digital economy. This could be a part of the study on the establishment of an ASEAN Digital Economy, as indicated by the BSBR (ASEAN 2021c, p.8). The study is set to be conducted by 2023, and completed by 2024, therefore setting up the basis of discussions for an ASEAN Digital Economy Framework Agreement (DEFA) by 2025. If the study is to include an assessment framework, it should improve on the one included in ADM2025.

The new framework must ensure that the distribution of respondents is fair, across not just countries but industries. Each ASEAN member state should be fairly represented, unlike the current study which has no respondents from several countries. Secondly and relatedly, the new framework must ensure that a larger range of stakeholders are engaged. This could include

[8] Assessment of this action can take place on several fronts, but should account for ASEAN's specific goals, which as discussed, include how it involves external powers See Annex A. Furthermore, with the RCEP and CPTPP already in place, ASEAN states might want to tap onto the United States willingness to do extend digital trade deals for the rest of Asia, including South Korea and Japan (Crabtree 2021). This is a space that definitely deserves some watching, given that steps might already be taken behind closed doors as this document is being written.

civil society, or representatives of SMEs, as was done in the review of AIM2020. The current framework is heavily skewed towards government agencies, and seems to not consider a broad enough range of stakeholders. This is especially the case since the digitalisation of ASEAN is both society and economy-wide, and will affect actors beyond the narrow range of the digital industry. The effects of this full-scale digitalisation might affect, for example, healthcare professionals (see e.g. Mihailescu 2014), who perhaps should be afforded a say in these ASEAN initiatives. It is also civil society actors that might be best positioned to give feedback on whether there is adequate economic and social inclusivity in the efforts to digitalise, or if there have been latent and unintended effects on community bonds.

Another approach could be to introduce a two-level review to assess ADM2025's progress. To better understand the relative progress made by individual member states as well as the overall progress made by ASEAN, it would be beneficial to separate the review process for ADM2025 accordingly. Governments would gain a clearer, more localised assessment of their policies that a regional approach to reviewing ADM2025 might overlook. This would in turn better inform future masterplans, and contribute to a more vibrant discussion of digital issues at the Track 2 and Track 1.5 level.

5.2 Craft Better Data Sharing Arrangements for Anti-Cybercrime Enforcement

Beyond ADM2025, it would be beneficial for ASEAN to create a network of data sharing agreements to support enforcement efforts against cybercrime, and pay more attention to regulatory reforms. It is true that on the whole, ASEAN's focus on cybersecurity capacity building under ADM2025 gives room for optimism. In 2017, the ten members spent an average of 0.06% of their GDP on cybersecurity, well below the global average of 0.13% (AT Kearney 2018, p.10-11). Nonetheless, ASEAN is expected to bring this expenditure ratio to 0.10% by 2025, or perhaps even higher under the auspices of ADM2025. In conjunction with ongoing and intensifying cybersecurity training efforts, these should contribute significantly towards improving ASEAN's cybersecurity capacity.

However, one area that demands more attention is that of joint enforcement. While technical training efforts elevate the efficiency of both government and company-based cybersecurity experts, the proliferation of sophisticated hacking software and widening pool of vulnerabilities makes it difficult to create an impenetrable shield for both organisations and individuals. These on-demand programs, known as crimeware-as-a-service (CaaS), lower the barriers to entry for cybercriminals – according to Interpol, malware exploit kits sell for between US$200-700, while phishing kits can cost as little as US$20. The implications of these kits can mount quickly for businesses – AT Kearney estimated that ASEAN's top 1,000 listed corporations could face up to US$750 billion in exposure to cyberattacks between 2017 and 2025 (AT Kearney 2018, p.26). Beyond monitoring websites for the appearance of new CaaS kits, it is important for ASEAN to coordinate enforcement efforts both internally and externally to arrest and prosecute cybercriminals, deterring others from attempting similar crimes.

It would also be beneficial for ASEAN to create a network of data sharing agreements to support enforcement efforts against cybercrime. One potential model for this is the Budapest

Convention, which is the only multilateral instrument that directly touches on the issue of cybercrime. While only 65 countries (including one ASEAN member) have signed it at present due to sovereignty concerns surrounding its demands for cross-border access to data, the Budapest Convention includes provisions on the preservation and storage of electronic evidence that are absent from ASEAN's present legal assistance regulations (Benincasa 2021). At the very least, studying these provisions could pave the road for a more comprehensive regional approach to combating cybercrime.

6. Conclusion

The world has rapidly transformed into a heavily digitally reliant world through the period of the COVID-19 pandemic, accelerating the already existing growth of the digital economy. To ensure that ASEAN maximises its potential in the digital economy, it must have sensible policies, guided by a pathway that is well-thought through and actionable. This makes observers eagerly the study indicated by BSBR, to be completed in 2024, as well as the mid-term review of ADM2025 in 2023. Devoting attention to ADM2025 and ADIFAP, including its reviewed version in 2022, is also crucial. An understanding of these policy documents will allow observers to understand ASEAN's direction and trajectory, and evaluate its successes or failures as well as make further recommendations. Both documents, with different functions, are guided by similar concerns, albeit sometimes framed differently, including infrastructural development, cybersecurity and privacy, digital skills and literacy, facilitating seamless imports and exports, and coordination. These areas are crucial to ASEAN's outlook but are also faced with significant challenges. Such challenges include the pandemic-related economic downturn, the digital divide, and accessibility issues in rural and archipelagic areas. They can be studied together as representations of ASEAN's digital economy initiatives.

The ADIFAP's main contribution is to act as a coordinating document, bringing together various schemes and initiatives that ASEAN has launched over the years. It also brings future documents, like ADM2025, under its umbrella, while the BSBR offers a supplementary service by singling out important and achievable initiatives that should be prioritised. There is something to be said about the need for conciseness and achievability, as recognised by the ADM2025 authors and brought to an extreme by BSBR. Yet such compilation documents cannot exist without their heavily-detailed and contextualised predecessors. In this regard, while ADM2025's attention to detail creates a broad document that addresses topics from digital payments to climate change, its more condensed series of enabling actions in comparison to its predecessors represents a balance between detail and achievability.

With these policy documents now in place, the key for ASEAN to take advantage of its potential is action and implementation. Besides the policy recommendations provided in this paper, it is imperative for ASEAN to also muster the political will to implement its policies. As the region continues to suffer from COVID-19, ADM2025 represents a potential economic lifeline. It is now up to individual ASEAN governments to grasp it. Otherwise, the cliché of calling ASEAN a "work-in-progress" will remain just that: a cliché.

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ANNEXES

Annex A

ASEAN's structure and limits

ASEAN consistently suffers from being misunderstood or misconceived, especially given unfortunate comparisons with the EU. It is therefore helpful to have some understanding of ASEAN's characteristics and objectives in order to appropriately analyse or assess its policy documents, and for analysts to understand how to judiciously learn from the EU. With this in mind, this section discusses two features of ASEAN – its structural limits and its relationship with external powers.

a. *ASEAN's structure and limits*

ASEAN is a regional organisation that has polarised both scholarly and public opinion (see Stubbs 2019; Beeson 2020). On one hand, scholars, diplomats and intellectuals have lauded ASEAN and its achievements, with prominent Singaporean ex-diplomat Kishore Mahbubani arguing that ASEAN deserves a Nobel Prize for its accomplishments, which include ensuring a period of peace in a region that is fraught with diversity (Mahbubani and Sng 2017). Others point to economic benefits that ASEAN has brought to the region (see e.g. Natalegawa 2018; Archarya 2007). On the other hand, sceptics see ASEAN merely as a "talk-shop" where member states come to discuss, and that the regional organisation is effectively toothless and unreliable in implementing policies (see e.g. Menon and Melendez 2016; Das 2017). Others point to how ASEAN has birthed a "baffling array of acronyms and overlapping regional institutions, often referred to as a "noodle bowl"" (Jones and Hameiri 2020, 198), which in turn brings confusion and ineffectiveness. This "noodle bowl" approach has led scholars to conclude that "Southeast Asian regionalism is often seen as very boring, even by those who study it" (Jones and Hameiri 2020, p.201), and therefore leads ASEAN to be generally disregarded by these group of scholars.

This back and forth is not a new development, but it continues to characterise discussion about ASEAN even in mid-2021, as ASEAN's efforts to deal with the coup in Myanmar have received both praise and criticism (see e.g. Laksmana 2021; Hayat 2021). This paper is not concerned with contributing to debates over ASEAN in general, but simply wants to recognise that ASEAN has a specific structure, which in turn defines its scope and limits. Specifically, ASEAN is not a supranational organisation like the EU, where member states cede some degree of their sovereignty to a centralised bureaucracy (see e.g. Berkofsky 2005). ASEAN also cannot settle legal disputes like the EU and their European Court of Justice. Instead, ASEAN is an intra-state organisation that relies on consensus, where each member has an effective veto, notwithstanding controversial ASEAN-X arrangements. A key feature of ASEAN is the "ASEAN Way", which highlights the principle of non-interference between member states (see e.g. Nasedurai 2008). This is both formally encoded in its constitution, as well as embedded in the norms on which ASEAN discussions are based.

These features mean that ASEAN's objectives are more modest, and that its initiatives are typically a work-in-progress. Unlike strategy documents put out by individual countries or even the EU, ASEAN policy documents are typically more directed at achieving moral leadership, consensus and engaging partners. The pace of implementation of ASEAN initiatives remain at the level of individual ASEAN states, with its different capabilities. As some scholars have described, all ASEAN does is to hand out "homework" for each member state to do the best of its ability, and that ASEAN as a regional organisation itself does not actually do the work (Chen 2019). Any assessment or analysis of ASEAN's policy documents must therefore keep these limits and features in mind. Doing otherwise, in the words of Singaporean ex-ambassador-at-large Bilahari Kausikan, would be like criticising a cow for being an imperfect horse (see e.g. Kausikan 2020).

b. ASEAN's relationship with external powers

Another important point to note is ASEAN's relationship with external powers. As Menon (2021) notes, unlike the EU, ASEAN uses regionalism as "a means rather than an end" and is "outward-looking rather than inward-looking". This provides an explanation for ASEAN's many extra-regional initiatives. These include the ASEAN+3, ASEAN regional forum, and many others.

These initiatives look to create dialogue that form the basis for political, economic, and cultural initiatives between ASEAN and its extra-regional partners, including and especially major powers like the United States and China. This is done for various reasons, including to socialise these extra-regional states into the ASEAN norms, or provide a neutral and trusted platform for diplomatic manoeuvres (see e.g. Archarya 1997).

On the trade front, ASEAN's objectives are not merely regionalism, but using regionalism as a means for globalisation. While trade flows and cooperation between ASEAN member states, as well as deepening integration on multiple fronts including the digital economy, is a clearly stated goal of many ASEAN documents, we should not forget that these same objectives apply for ASEAN member states with regards to external partners. In other words, member states use ASEAN as a platform to access other markets beyond ASEAN, and we should therefore not think of ASEAN's objectives to stop at the borders of Southeast Asia, but instead using ASEAN as a springboard to reach global markets. ASEAN member states use ASEAN to deepen and broaden their trade relations and overall trade volume with other large partners, but just other member states. In fact, in ADM2025, the need to look outwards towards global players for sources of funding is also explicit (p.11).

It is therefore important that when assessing ASEAN policy documents, observers should be mindful of how they are written with these extra-regional partners in mind. This ought to be the case even when they are not explicitly stated. As Menon (2021) also notes, this means that the metrics that we use to assess ASEAN's progress must also reflect these objectives. While her primary takeaway is that it is important to look beyond intra-regional trade, but towards globalised trade flows when assessing the progress of ASEAN trade initiatives, a general global outlook should be taken when assessing these documents.

Annex B

Below are the six priority areas of the ASEAN Digital Integration Framework Action Plan (ADIFAP), as well as some elaboration.

i. **Facilitate seamless trade**. With the increase in digital-enabled trade of goods, digital integration requires reliable physical infrastructure and favourable trade policies to facilitate seamless trade flows across ASEAN. In this regard, ASEAN Member States shall accelerate progress on seamless logistics to facilitate trade across borders, including digital-enabled trade within and across ASEAN Member States.

ii. **Protect data while supporting digital trade and innovation.** It is the responsibility of governments and industry to ensure that data is protected and secured as the volume increases. The ASEAN Framework for Personal Data Protection provides for data protection while facilitating data flows across the ASEAN Member States. ASEAN Member States are encouraged to take into account the principles outlined in the ASEAN Framework for Personal Data Protection, ASEAN Framework on Digital Data Governance, and international frameworks to stimulate budding micro, small, and medium enterprises' (MSMEs) progress in digital integration.

iii. **Enable seamless digital payments.** Digital payment is a key enabler to facilitate seamless cross-border digital trade and serves as a gateway to other digital financial services. It offers the potential to extend financial inclusion to underserved populations across ASEAN. In line with the goals under AEC 2025 Strategic Action Plans for Financial Integration, ASEAN Member States should implement interoperable frameworks that use common global standards, messages and rules; work with financial institutions to develop inclusive open application program interface (API) standards and roadmaps; and develop or build on existing national digital ID systems to encourage adoption of digital financial services by enabling real-time and secure verification of user identities.

iv. **Broaden digital talent base**. Upskilling is critical in enabling the existing workforce to benefit from and accelerate the progress of digital integration. There are existing plans in ASEAN, such as the ASEAN ICT Masterplan 2020 and AEC Blueprint 2025 on upskilling of MSMEs, as well as Master Plan on ASEAN Connectivity (MPAC) 2025 that seeks to support the adoption of technology by MSMEs. ASEAN Member States have made some progress in this area. Yet many upskill programmes are at an early stage or only focus on urban populations. In order to accelerate results, ASEAN Member States shall partner with the private sector in designing the most relevant digital skills roadmaps and accelerate the roll-out of these programmes for prioritised sectors.

v. **Foster entrepreneurship**. There is a need to assist budding digital MSMEs navigate the business ecosystem to flourish - from the ease of starting a business to digital regulations. ASEAN Member States shall continue to simplify existing hurdles in setting up and doing business for its MSMEs. In addition, ASEAN Member States shall endeavour to ensure that new policies related to digital integration do not significantly impose burdens and deter MSMEs from participating in the digital economy.

vi. **Coordinate actions.** ASEAN shall designate one body to manage across all the different areas of this Framework. This will help accelerate digital integration through effective prioritisation, coordination and tracking across different objectives and timelines.

Annex C

The next two pages display the full list of the Desired Objectives (DOs), Enabling Actions (EAs), importance, and dependencies in the ASEAN Digital Masterplan 2025 (ADM2025). They are taken from page 134-135.

DO/EA	Description	Importance	Dependencies
DO1	Actions of ADM 2025 prioritised to speed ASEAN's recovery from COVID-19		None
1.1	Make the economic case for prioritising ADM 2025 actions	H	None
1.2	Assess the economic case for facilitating use of digital services that would help recovery from the COVID-19 Pandemic	M	None
DO2	Increase in the quality and coverage of fixed and mobile broadband infrastructure		
2.1	Encourage inward investment in digital and ICT	H	None
2.2	Move towards best practice permission and access rights for local and national infrastructure including submarine cable repair	H	None
2.3	Facilitate adoption of region wide telecoms regulation best practices by market players to provide regulatory certainty	M	Links to 2.2
2.4	Ensure adequate international Internet connectivity	M	None
2.5	Reduce the carbon footprint of telecommunications operators in ASEAN	M	None
2.6	Ensure increased and harmonised spectrum allocation across region in a way that meets key needs and objectives.	H	None
2.7	Adopt a regional policy best practice guidance on AI governance and ethics, IoT spectrum and technology	M	Links with 2.8, both done together
2.8	Develop regional mechanisms to encourage skills in integrated and end-to-end services	M	Links with 2.7, both done together
2.9	Establish a centre-of-excellence for best practice rural connectivity	H	None
DO3	The delivery of trusted digital services and the prevention of consumer harm		
3.1	Enable trust through greater and broader use of online security technologies	H	None

DO/EA	Description	Importance	Dependencies
3.2	Build trust through enhanced security for finance, health care, education and government	M	Links with 3.1
3.3	Identify improvements in legal and regulatory measures on the management of protection of data and other data-related activities that could be harmful.	H	None
3.4	Improve coordination and cooperation for regional computer incident response teams	H	None
3.5	Promote consumer protection and rights in relation to e-commerce	H	
DO4	A sustainable competitive market for the supply of digital services		
4.1	Continue to identify opportunities to harmonise digital regulation to facilitate cross-border data flows	H	None
4.2	Deepen collaboration between ICT and competition regulatory authorities across ASEAN on the ICT sector and digital economy	M	None
4.3	Monitor developments in regulation of digital platforms in other jurisdictions	L	None
DO5	Increase in the supply of public e-services (health, education, government etc)		
5.1	Establish ASEAN wide reporting on the level of use of e-government services in line with ITU requirements	H	Urgent
5.2	Help make key government departments more productive through their internal use of e-services and ICT	H	None
5.3	Explore how to introduce digital identities in each AMS in a way which safeguards civil liberties	H	None
5.4	Help developing AMS improve the quality of their e-government e-services	M	Needs 5.2
5.5	Improve the cohesion of AMS by making key government e-services interoperable across the ASEAN region	L	Needs 5.2, and 5.4
DO6	Digital services to connect business and to facilitate cross-border trade		
6.1	Facilitate compliance and securing the benefits of telecommunications services and electronic commerce in line with relevant ASEAN trade agreements	H	None
6.2	Support trade digitalisation through seamless and efficient flow of electronic trade documents (e.g. invoices) and goods within ASEAN	H	None
6.3	Assess the net benefits of including IR 4.0 technologies into trade facilitation processes	M	None
6.4	Reduce regional business travel costs by lowering roaming rates for mobile data services across ASEAN	M	None

DO/EA	Description	Importance	Dependencies
6.5	Promote e-commerce trade in ASEAN, enhance last-mile fulfilment cooperation, and improve competitiveness in the digital economy	M	None
DO7	Increased capability for business and people to participate in the digital economy		
7.1	Continue to support the advancement and harmonisation of ICT qualifications across ASEAN	L	None
7.2	Promote development of advanced digital skills, such as coding, hackathons, innovative challenges	M	Benefits from 7.1
7.3	Develop a framework that encourages the development and growth of digital start-ups in ASEAN	H	None
7.4	Progress the work on smart cities begun in AIM 2020	M	Needs 2.8 and 2.9 to be fully effective
DO8	Removing barriers to the use of digital services		
8.1	Ensure citizens and businesses have the skills and motivation to use digital services	H	None
8.2	Reduce affordability barriers to getting online	M	Needs 2.1 and 2.2
8.3	Reduce accessibility barriers to getting online	M	None
8.4	Encourage deeper use of 'vertical' digital services	L	Links to 5.1 and 5.2

Annex D

ADM2025's list of strategic thrusts, drawn from the ADM2025 Framework.

ADM 2025 Framework Strategic thrust	ADM 2025 Desired Outcomes
1. Digital Connectivity and Infrastructure	
• Enhancing accessibility, quality and affordability of infrastructure;	DO2
• Next-generation infrastructure;	DO2
• Universal design;	DO2
• Equitable access.	DO2 DO8

ADM 2025 Framework Strategic thrust	ADM 2025 Desired Outcomes
2. Digital Transformation	
• Smart digital environment;	DO2 DO5 DO7
• Emerging technologies (e.g.: AI, IoT, 5G, cloud computing, big data, etc.);	DO2 DO6
• Digital innovation;	All DOs
• Digital government and society;	DO5
• Digital literacy;	DO8
• Reskill, upskill and new skills;	DO7 DO8
• Micro Small and Medium Enterprises (MSMEs).	DO6 DO7
3. Resilience, Trust and Security	
• Network resilience and Cyber Security standards and best practices;	DO3
• Network resilience and Cyber Security capacity building and awareness raising;	
• Addressing risks and threats of emerging technologies;	
• Critical information infrastructure protection (CIIP);	
• CERT Cooperation;	
• Personal Data Protection and privacy;	DO3
• Emerging Threats i.e. fake news, misinformation, etc	See **note 1**
4. Digital Policy, Regulation and Standards	
• Digital innovation sandbox;	DO7
• Cross-border data flow;	DO6
• Policies, regulation and standards in the digital economy (E.g.: governance and ethics, standardisation, big data, allocation and use of scarce resources, etc.);	DO1 DO2 DO3 DO4 DO5 DO6
• Green Digital Initiative;	See **note 2**
• Disaster management;	See **note 3**
• Measurement tools.	Embedded in relevant EAs
5. Cooperation and Collaboration	
• Cross-sectoral collaboration;	
• Technology developers;	Specified in descriptions of individual EAs
• Dialogue Partners;	
• International organisations;	
• Civil society and public awareness;	
• Other relevant stakeholders.	

Note 1: This is being addressed by the ASEAN Ministers Responsible for Information (AMRI). See for example the *Declaration on a Framework to Minimise the Harmful Effects of Fake News* (2018) and *Joint Statement of the ASEAN Ministers Responsible for Information to Minimise the Negative Effects of Coronavirus Disease 2019 (COVID-19)* issued 25 August 2020.

Note 2: If the vision of ADM 2025 is achieved, ASEAN economies should be able to produce higher levels of economic prosperity: this lowers levels of carbon emissions

Note 3: achieving the vision of ADM 2025 will make AMS able to deal with local and regional disasters better.