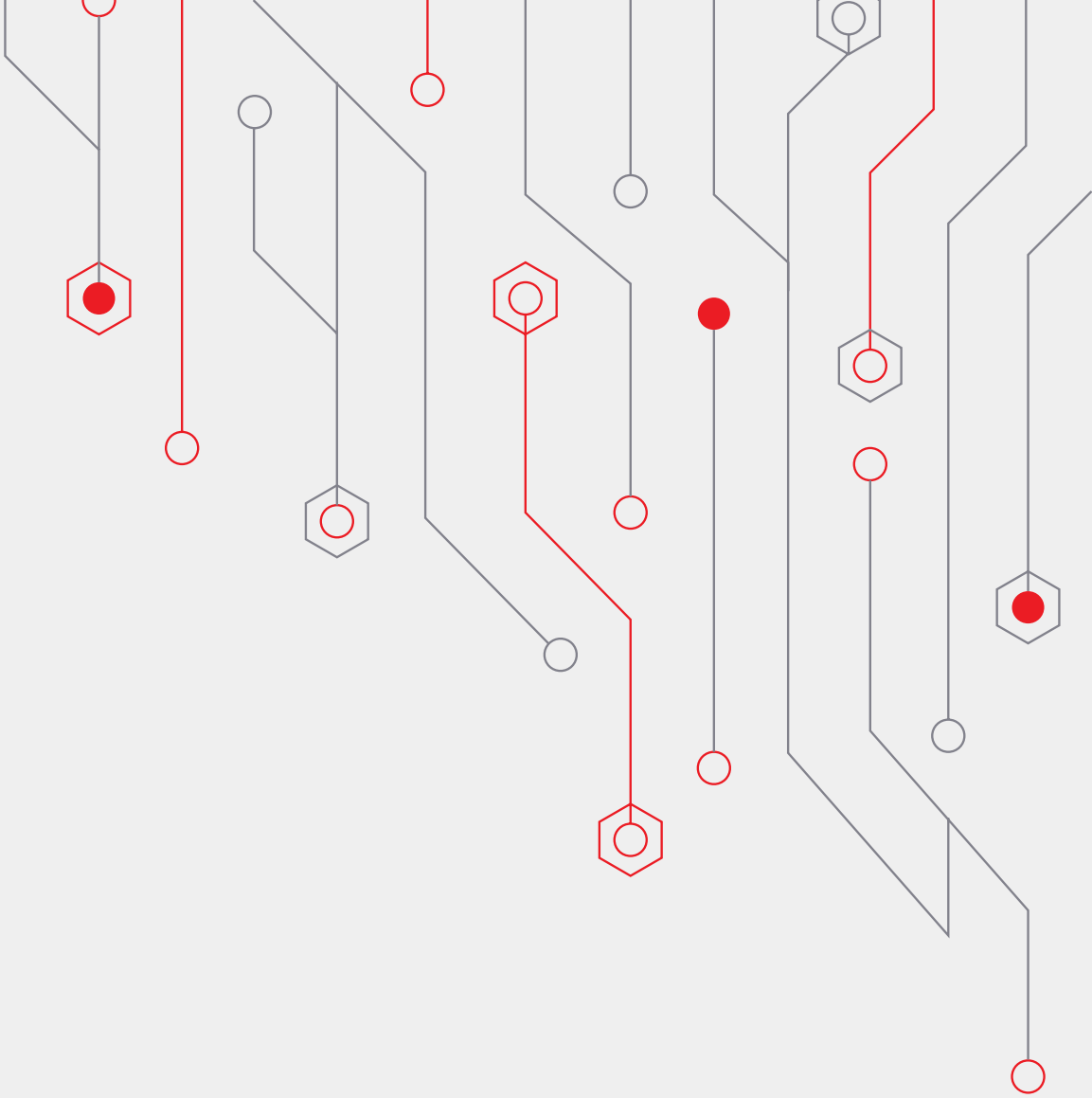

EngageMedia

Governance of Artificial Intelligence (AI) in **Southeast Asia**

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I. INTRODUCTION

Discussions on artificial intelligence (AI) governance have grown rapidly in recent years, as governments, corporations, civil society, and multi-stakeholder forums come together to outline values and principles that should underline the ethical development and deployment of AI technologies, as well as mechanisms for regulating and guiding them. Technology governance, as defined by the World Economic Forum, involves 'making decisions and exercising authority on the development and diffusion of technology', with mechanisms such as laws and regulations, incentive programs, institutional frameworks, policies and standards, etc. that aim to guide individuals and organisations towards a specific set of outcomes.[1]

While most of these conversations have been based in the Global North, actors within the Global South are also putting forth critical views from where they stand, indicating that current mainstream discussions on AI governance acknowledge key problems in the application of AI, but stops short in critiquing the structural obstacles that hamper developing countries' efforts to build their own data and information infrastructure for self-determination.[2] Ultimately, conversations about access and participation of developing nations are framed in a passive manner (if they happen at all). It is crucial for actors within

1 (World Economic Forum, 2019)
2 (Gurumurthy & Chami, 2019)

Southeast Asia to address existing challenges within the region that impact their ability to reap the benefits of AI on their own terms and manage technology governance in their own contexts.

This report seeks to provide an understanding of AI and its governance from the perspective of civil society in Southeast Asia, in terms of ways to consider the problem and how best to approach policymaking and advocacy. It draws from scholarly thinking, recent reports, and expert interviews to answer the main question: how can civil society participate in AI governance or intervene in other ways to safeguard AI safety and security?

1.1 About the Report

Research methodology

This study is conducted through literature review and expert interviews. Sixteen experts within and outside Southeast Asia participated in the interviews, comprising a mix of lawyers, academics, activists, and industry experts from diverse backgrounds ranging from human rights in governance, governance from the Global South perspective, and technology and AI in the private sector (see Acknowledgements for full list).

Structure of the report

This report provides conceptual frameworks and concrete recommendations to understand AI applications, their implications on society, and ways forward in governance. Section 2 places AI in context: by defining AI and its applications, providing an overview of the AI landscape in Southeast Asia, and mapping out existing challenges in the region. These set the scene for Section 3, which considers AI governance and relates it with the situation in Southeast Asia. Section 4 concludes with general recommendations provided by the respondents interviewed and suggestions on possible actions to be taken by civil society.

II.
AI IN CONTEXT

Broadly speaking, AI is 'the study of devices that perceive their environment and define a course of action that will maximise its chance of achieving a given goal'.[3] Within this report, we focus on current applications of AI, mainly in the form of machine learning, when we consider the societal implications of AI.

The Internet Society (2017) explains machine learning as such: instead of giving computers step-by-step instructions to solve a problem, the human programmer gives the computer instructions and rules to learn from the data provided. Based on inferences gained from the data, the computer then generates new rules to provide information and services.[4] In other words, algorithms, defined as 'a sequence of instructions used to solve a problem', generate algorithms. With that, machines can provide solutions to complicated tasks that cannot be manually programmed.

3 (The Web Foundation, 2017)
4 (Internet Society, 2017)

To make sense of the vast variety of AI applications currently available, AI researcher Kai-fu Lee developed a framework[5] outlining the four waves of AI development:

1. Internet AI, in which online user activity data is collected, analysed, and translated into personalised recommendations – a feature that improves user experience but also sells user attention and engagement to advertisers. The AI-powered recommendation systems are used across many Internet services, from e-commerce platforms to social media.

2. Business AI, in which AI is used to process structured and historical business data within traditional companies to optimise processes and come up with business insights. Its applications in various sectors include determining creditworthiness in the financial sector, sifting through court records in the legal system, or suggesting medical diagnoses in the healthcare sector.

3. Perception AI, in which data from the physical environment is collected, analysed, and interpreted through Internet-enabled sensors in 'smart' devices, essentially integrating the online and offline environments together. Examples of such technologies include CCTV cameras with facial recognition capabilities and smart home devices.

4. Autonomous AI, which combines the ability of machines to learn from complex data sets and sense the surrounding environment with robotics. With autonomous AI, physical tasks can be performed without human intervention, as seen in driverless cars and autonomous robots and drones.

The breakdown of these different AI domains allows us to appreciate the different types of technologies in application, their logics and risks, and thus consider the types of governance that may be suitable.

5 (Lee, 2018)

2.1 AI landscape in Southeast Asia

Internet penetration in Southeast Asia is not ubiquitous, with 76.7% of the population online as of June 30 2021.[6] Access is still a problem as an estimated one third of Southeast Asians (mainly concentrated in Timor-Leste, Myanmar, and Laos) are not connected to the Internet yet, even though growth is rapid (in 2014, only 25% in the region were connected to the Internet).[7] Through the metric of Facebook use, almost all (91.35%) of those connected to the Internet are already subject to the algorithms of Internet AI.[8]

As of 2019, Southeast Asia has 14 unicorn startups (defined as tech startups worth more than US$1 billion) which were jointly valued at US$57 billion. Most of these startups are based in Singapore (seven) and Indonesia (five), while Vietnam and Philippines each have one. The most valuable unicorns are the platform economies of Singapore-based Grab and Indonesia-based Go-Jek, which compete in the areas of ridesharing, e-payments and online-to-offline (O2O) services. E-commerce startups have done very well (unicorns include Tokopedia, Lazada, Bukalapak, Zilingo), as have gaming (SEA, Razer, VNG). Investments on the top 20 tech startups in Southeast Asia (not including the unicorns) reached US$1.5 billion in total between 2018 and mid-2019.[9] In terms of business AI, AI adoption is still at a nascent stage outside the tech sector, with the region lagging two to three years behind more advanced countries. Most Southeast Asian countries invested less than US$0.50 per capita on AI solutions in 2019, with the notable exception of Singapore which invested US$68 per capita.[10]

Governments in the region have shown great interest in harnessing AI for national development. Several Southeast Asian states (Singapore, Malaysia, Thailand, Vietnam, Indonesia, and the Philippines) have set up national AI strategies and policies, or are on their way to creating one.[11] Table 1 shows a brief overview of government policies and other initiatives to support AI technologies.

6 (Internet World Stats, n.d.)
7 (Iwamoto, 2019)
8 (Internet World Stats, n.d.)
9 (Thomas, 2019)
10 (Kearney, 2020)
11 (HolonIQ, 2020)

Table 1: Government initiatives for AI in Southeast Asia

Indonesia	In August 2020, the Indonesian government unveiled a blueprint for the national development of AI between 2020 and 2045, known as Stranas KA, or Strategi Nasional Kecerdasan Artifisial. Stranas KA has five priority sectors, including health services, bureaucratic reform, education and research, food security, and mobility and smart cities. The policy covers four focal areas, including industrial research and innovation, infrastructure and data, talent development, and ethics and policies.[12]
Malaysia	In 2021, Malaysia launched its Digital Economy Blueprint and National Fourth Industrial Revolution Policy, which are overarching national policies with AI integrated into the framework of the digital economy. Specific to AI, it has two policy initiatives: the Malaysia AI Roadmap[13] and the National AI Framework.[14] Other policies and frameworks connected to the digital economy include the National Industry 4WRD Policy, the National eCommerce Roadmap, the National Digital Free Trade Zone Initiative, the National IoT Framework, and the National BDA Framework.[15]
Philippines	In the Philippines, a task force of seven governmental agencies has drafted an AI roadmap, which is slated to be implemented in 2021.[16] Agencies involved in drafting the roadmap include the Department of Trade and Industry, Department of Agriculture, Department of Science and Technology, Department of Information and Communications Technology, Department of Education, Commission on Higher Education, and the National Economic and Development Authority.[17]
Singapore	The Singaporean government rolled out its National AI Strategy in November 2019, covering five key areas: transport and logistics, smart cities and estates, healthcare, education, and safety and security. Since 2017, the National Research Foundation has run the national AI program, AI Singapore, to create an AI ecosystem in the country. Its Smart Nation program provides AI guidance for companies, such as the Trusted Data Sharing Framework and the Model AI Governance Framework, and other initiatives for public education on AI.
Thailand	The National Digital Economy and Society Committee of Thailand has drafted the country's first AI ethics guidelines, approved by the Prime Minister and endorsed for cabinet approval in December 2020.[18] Some policies related to AI are Thailand 4.0 (2016) and the Digital Government Plan (2017-2021).
Vietnam	Vietnam has a National Strategy on AI Research, Development and Application. It intends for Vietnam to be among the top four countries in the Association of Southeast Asian Nations (ASEAN) and 50 nations globally that lead in AI research and development by 2030. The country aims to build 10 AI brands, develop three national centres on big data and high performance computing, and connect big data and high performance computing centres nationwide into a network. It also aims to form 50 open datasets in all socio-economic fields for AI use.[19]

12 (Fletcher, 2020)
13 (Malaysia Artificial Intelligence Roadmap, n.d.)
14 This document, published by Malaysia Digital Economy Corporation (MDEC) does not seem to have been publicly released
15 (Malaysia Digital Economy Corporation, n.d.)
16 (Canivel, 2020)
17 (Umali, 2019)
18 (Sharon, 2020)
19 (VNA, 2021)

Even though there is strong political will to drive the use of AI in many Southeast Asian countries, the capacity to do so varies. For example, there is great disparity between countries within Southeast Asia in terms of governments' readiness to use AI for public service delivery. Within the Government AI Readiness Index (2020) published by Oxford Insights and the International Research Development Centre (IDRC), Singapore ranks 6th globally and Myanmar is at 131st, with other Southeast Asian nations ranging somewhere in between (see Table 2).

Table 2: Government AI readiness of Southeast Asian countries in 2020[20]

Country	Rank	Score
Singapore	6	78.704
Malaysia	28	63.663
Brunei Darussalam	49	51.470
Thailand	60	48.156
Indonesia	62	47.528
Philippines	74	42.944
Vietnam	76	42.824
Timor-Leste	120	33.351
Laos	127	32.197
Cambodia	128	32.144
Myanmar	131	31.237

In terms of government support of perception AI and autonomous AI, the region is advancing into these territories. Most countries within the region use two or more types of surveillance technologies in the forms of smart/safe city implementations, facial recognition, and smart policing, with technologies acquired from China and the US (see Table 3, adapted from the 2019 AI Global Surveillance Index covering seven countries in Southeast Asia). In a study conducted by multinational professional services network KPMG, Singapore has been ranked as the world's most ready country for autonomous vehicles (AV), followed by the Netherlands, Norway, and the United States.[21] The city state has expanded AV testing to cover all public roads in the west of Singapore, with the goal of serving three areas with driverless buses by 2022. Elsewhere in Southeast Asia, Vietnam, Malaysia, and Thailand have started testing autonomous vehicles at various scales,[22,23,24] while Indonesian prime minister Joko Widodo has stated that the country's planned new capital city will incorporate autonomous vehicles and electric cars.

20 (Shearer, et al., 2020)
21 (KPMG International, 2020)
22 (Van, 2018)
23 (Digital News Asia, 2020)
24 (Bloomberg, 2020)

Table 3: Southeast Asian countries' use of AI technologies acquired from China and the US

Country	Smart/ Safe City	Facial Recognition	Smart Policing	Chinese Tech	US Tech	Key Companies
Burma/Myanmar	/	/		/		Hikivision, Huawei
Indonesia	/	/	/	/	/	Huawei, NEC, PT Industri Telekomunikasi Indonesia
Laos	/		/	/		Huawei
Malaysia	/	/	/	/		Huawei, NEC, Yitu
Philippines	/	/	/	/	/	Boeing, CITCC, IBM, Huawei
Singapore	/	/	/	/	/	Accenture, AGT, Airbus, Dassault, Huawei, NEC, Tascent, Yitu
Thailand	/	/		/		Huawei, Megvii, Panasonic, ZTE

Regionally, ASEAN member states (10 out of 11 Southeast Asian countries, not including Timor-Leste) have initiated plans to cooperate in creating a regional digital ecosystem. The ASEAN Framework on Digital Data Governance, endorsed in 2018 by ministers of ASEAN member states,[25] lays out four strategic priorities for creating such an ecosystem, including data lifecycle, cross-border data flows, digitalisation and emerging technologies, as well as legal, regulatory, and policy frameworks. Accordingly, there will be four associated initiatives, i.e., the ASEAN Data Classification Framework (led by Indonesia); the ASEAN Cross-Border Data Flows Mechanism (Singapore); the ASEAN Digital Innovation Forum (Vietnam); and the ASEAN Data Protection and Privacy Forum (Philippines).

Other forms of collaboration at the ASEAN level include the ASEAN Smart Cities Network (ASCN), established in 2018 as a network of 26 pilot cities across 10 ASEAN member states that work together to achieve smart and sustainable urbanisation. Besides promoting cooperation and knowledge sharing between cities, ASCN is a platform for public-private partnership between city governments and smart city solutions providers, and also links the cities with funding and support from ASEAN's external partners. The six focus areas of ASCN are (1) civic & social, (2) health & wellbeing, (3) safety & security, (4) quality environment, (5) built infrastructure, and (6) industry & innovation.

25 (ASEAN, 2012)

From indices and statistics cited within this section, we can categorise Southeast Asian countries in three distinct tiers. Singapore is in its own leading tier, being AI-ready and competitive at the global level. The second tier encompasses Malaysia, Indonesia, Thailand, Philippines, Vietnam, and Brunei Darussalam, which have governments that are playing catch up in building supportive policy, and whose peoples are getting connected rapidly and increasingly becoming digitally savvy. The third tier includes Myanmar, Cambodia, Laos, and Timor-Leste, which have low Internet penetration, and whose governments lack the capacity to plan for and support the adoption of AI technology. These contextual differences need to be taken into account when analysing the benefits and risks that AI will bring to the region.

2.2 Existing challenges within the region

Southeast Asian nations need to navigate the strategic implications of AI and deal with its societal consequences. Geopolitical challenges notwithstanding, strong foundations at the country level would enable a country to benefit from AI technologies, or to prevent and mitigate safety risks and malicious attacks. However, there are some inherent weaknesses and challenges that exist within the region that have to be addressed in order to build these foundations. Experts interviewed for this study have pointed out a range of factors, which fall into the following main themes:

Lack of technical capacity and digital literacy

In general, the lack of technical capacity at different levels of society exacerbates AI risks. Policymakers attempt to govern the technologies without fully understanding the implications, while civil society finds it difficult to mobilise based on abstract potentialities of data privacy violations or cybersecurity. A key problem that stems from not understanding the technology and its implications, at least on a conceptual level, is that it adds a high barrier to meaningful participation in AI governance. This manifests both in the international level, such as in standards-setting bodies where Southeast Asian nations are severely under-represented, or at the national level, where public participation in decision-making on public technology use is sparse.

Digital literacy and awareness of digital harms help in fortifying individuals and communities against malicious uses of AI, examples of which include AI-assisted disinformation and misinformation campaigns compounded by rapid advances in the field, such as the increased sophistication of AI-powered media manipulation (also known as deepfakes). Several respondents expressed worry that the level of awareness of potential digital harms in the region is low, leading to lax attitudes about data privacy and vulnerability towards disinformation campaigns. With the rapid onboarding of new Internet users in the region and the lack of awareness campaigns of digital harms, there is little resistance to these risks.

Regimes leaning towards authoritarianism

Civicus Monitor, which tracks the openness of civic spaces globally, considers Laos and Vietnam to be countries with 'closed' civic spaces, while Brunei Darussalam, Cambodia, Myanmar, Philippines, and Thailand are 'repressed'. Indonesia, Malaysia, Singapore, and Timor-Leste have civic spaces that are 'obstructed'.[26,27] In the name of national security, most countries in the region have applied heavy-handed laws to restrict civil freedoms of their populace, and these laws have slowly crept into the digital space. None of the eight Southeast Asian countries assessed in the Freedom on the Net report by Freedom House (2021) obtained a 'free' status in Internet freedom, with Thailand, Myanmar, and Vietnam scoring the lowest in the region.[28,29]

Using AI-powered surveillance technology, authoritarian regimes would be able to tighten their control over their own populations by targeting dissidents and creating a general climate of self-censorship. Most Southeast Asian countries already use surveillance technologies in physical spaces (see Table 3). Thirteen out of 15 Asian countries (covering eight in Southeast Asia) assessed under the 2019 Freedom on the Net Report have a social media surveillance program in use or under development. On top of that, Southeast Asian governments have been buying and using spyware and cyberespionage tools for more targeted surveillance. For example, in December 2020, the governments of Indonesia, Malaysia, Thailand, and Vietnam were implicated in a report by Citizen Lab to have

26 There are five levels to Civicus' classification: open, narrowed, obstructed, repressed, and closed, in the order from the most open to the least.
27 (Barreto, et al., 2020)
28 (Freedom House, 2021)
29 The ratings are calculated by indicators on obstacles to access, limits on content, and violations of user rights.

bought cyberespionage products from surveillance firm Circles, which enabled them to snoop on calls, texts, and locations of phones due to vulnerabilities in the global mobile phone system. In particular, Citizen Lab highlighted that one of Circles' clients was the Internal Security Operations Command (ISOC) of the Royal Thai Army, which has allegedly subjected detainees to torture.[30]

Weak institutional frameworks

Authoritarian regimes notwithstanding, respondents have pointed out that most countries within the region do not have sufficiently strong institutional frameworks to govern AI and afford citizens with protection from potential harms. Institutional frameworks here include not only the regulatory system to define legal procedures, but also the entire chain of processes to support transparent and effective policymaking, implementation, monitoring, and enforcement. Weak institutional frameworks are a systemic and foundational problem that extends beyond AI; one respondent gave an example of street vendors in Bangkok moving around with gas tanks – essentially 'small bombs around the city' – which pose a danger to the public but are not controlled with proper law enforcement.[31]

Security considerations around AI systems are often framed based on a Western privacy legacy, with the assumption that data protection frameworks are in place. In the region, Singapore, Malaysia, Philippines, and Thailand have general personal data protection laws, with other countries embedding data protection policies in other related government policies.[32] Even with legal frameworks in place, Malaysia and Thailand were placed within the five worst countries for personal data protection (out of 47 studied by British tech website Comparitech) in 2019, both scoring 2.6/5.0; Singapore (2.7) and the Philippines (2.8) were not too far ahead.[33] All were considered to provide some safeguards but weakened protections.

30 (Marczak, et al 2020)
31 From interview data
32 (Thio, 2018)
33 (Bischoff, 2019)

Availability of quality data

In order to train machine learning models, the availability of quality data is imperative. AI technologies rely on having access to structured, accurate, and updated data in order to churn out useful and relevant results. However, across the region, the availability of quality data is not always guaranteed. The lack of data may be due to differing levels of digitalisation; it may also be a case of bureaucratic practices. In the case of Indonesia's health sector, for example, the complex network of laws and regulations that protect patient data may also be restrictive in some applications. According to one of the respondents, due to outdated regulations based on paper trails, a patient's medical history is owned and locked into a specific hospital, and cannot be transferred to another hospital. Indonesia also has a strict data localisation law which dictates that personal data be stored and processed within the country. As a result, AI has not benefited Indonesia's health sector as much as it could, as opposed to its finance sector which takes a more open approach in having in place a regulatory sandbox for new ventures.[34]

One of the key concerns about data is its integrity, or whether it is true and accurate. With the explosion of big data, difficulties in tracing the origins of training data make assessing its quality difficult for AI developers. This has a domino effect on the quality of the AI product and automated decision-making. Efforts to improve data quality come with its moral dilemma: a respondent annotating datasets in Indonesia raised concerns about the possibility of such datasets being used to discriminate against the poor and marginalised.[35]

Fault lines along religious, racial, and other cultural sensitivities

Race and religious relations in Southeast Asia have long been a delicate matter, and issues surrounding AI such as bias, transparency, and accountability may amplify some tensions already existing in society. This has been exemplified in the case of the genocide in Myanmar, where a UN fact-finding mission found that social media, particularly Facebook, exacerbated rampant hate speech and incitement of violence against the Rohingyas.[36] Researcher Chinmayi Arun observes that the technology architecture and business model

34 From interview data
35 From interview data
36 (TIME, 2018)

of Facebook relies on a healthy media ecosystem and media literacy, which are weak in Myanmar, resulting in the inability of citizens/users to verify online content.[37] Judging by the recent political crisis in the US where many voters were misled to believe that Donald Trump had won the 2020 presidential election, this vulnerability is not exclusive to the Global South.

AI can be programmed to reflect and amplify existing societal biases and prejudices, and this has been shown repeatedly in chatbots learning from racist data. In 2016, Tay, a chatbot by Microsoft, was manipulated by Twitter users into spewing white supremacist comments. The chatbot had to be shut down after 16 hours.[38] The racist chatbot problem persists: in 2021, Lee Luda, a popular chatbot by South Korean company Scatter Lab, had to be pulled out of Facebook because of its remarks against minority groups.[39] In an attempt to steer clear of racial and religious minefields, Microsoft's chatbot in Indonesia, Rinna, was limited by rules to refrain from talking about politics, religion, and race. The result was an AI persona that speaks like a teenager and whose intelligence 'never increases'.[40]

37 (Arun, 2019)
38 (Vincent, 2016)
39 (Singh, 2021)
40 From interview data

III.
AI GOVERNANCE

3.1 Governance in Southeast Asia

What is AI governance? To concretise our understanding, we can draw from a set of questions proposed in a paper by the World Economic Forum,[41] which provides us with an orientation of different angles to consider AI governance from, such as the parties which are making the rules of the game, the types of technologies affected, and the ways in which the development and deployment of the technologies can be guided (see Table 4).

Effective AI governance is not one-size-fits-all, but is heavily contextual depending on the social and technological systems that they are applied to, as well as the complex interactions between them. As can be appreciated from the dimensions outlined in Table 4, the processes of rule-making and norm-making are grounded in existing power dynamics, local cultures, and institutional frameworks through which collective decisions are made and carried out.

41 (World Economic Forum, 2019)

Table 4: Perspectives in technology governance

Question	Boils down to	Elaboration
Who is responsible for, or doing, the governing?	Public and private sector governance mechanisms, with participation from civil society	The three main forces in creating rules, norms, and incentives are governments, the private sector, and civil society. While civil society provides pressure and collaboration in the creation of governance mechanisms, governments and the industry usually have a much stronger role – governments provide legal and regulatory instruments, while the industry can have a strong role in creating standards. Usually there is a mix of public and private sectors in technology governance.
What set of technologies are implicated?	Cross-cutting and technology specific technologies	Governance can focus on specific technologies (such as standards for driverless cars) or cut across different technologies with overarching rules and principles (such as rules for environmental sustainability, privacy and data-sharing standards, etc.)
In what ways are governance approaches aligned?	Vertically integrated or horizontally integrated technology governance	Vertical integration ensures that different layers of decision-makers at the local, national, regional, and global levels are coherent. Horizontal integration looks at policy alignment across ministries, sectors, or jurisdictions to make sure that governance mechanisms do not conflict with each other.
When does governance occur?	Ex-ante and ex-post technology governance	This refers to the point in the lifecycle of a technology or its application that the governance measure is in place. Ex-ante governance seeks to prevent or avoid risks by influencing behaviour before the technology is applied (e.g., risk analysis, the use of the precautionary principle), while ex-post governance manages risks after they arise (e.g., product liability).
What mechanisms incentivise or drive collaboration around governance?	Hierarchy, networks, negotiation, competition, and cooperation	These are useful models to think about governance mechanisms, whether in terms of hierarchy (e.g., top-down rules by the government), competition (e.g., companies competing in markets), networks (non-hierarchical modes of coordination constituted by mutual resource dependencies and/or informal norms of equality among actors involved), negotiation (managing interests and building consensus among different actors), and cooperation (coordination and voluntarism).

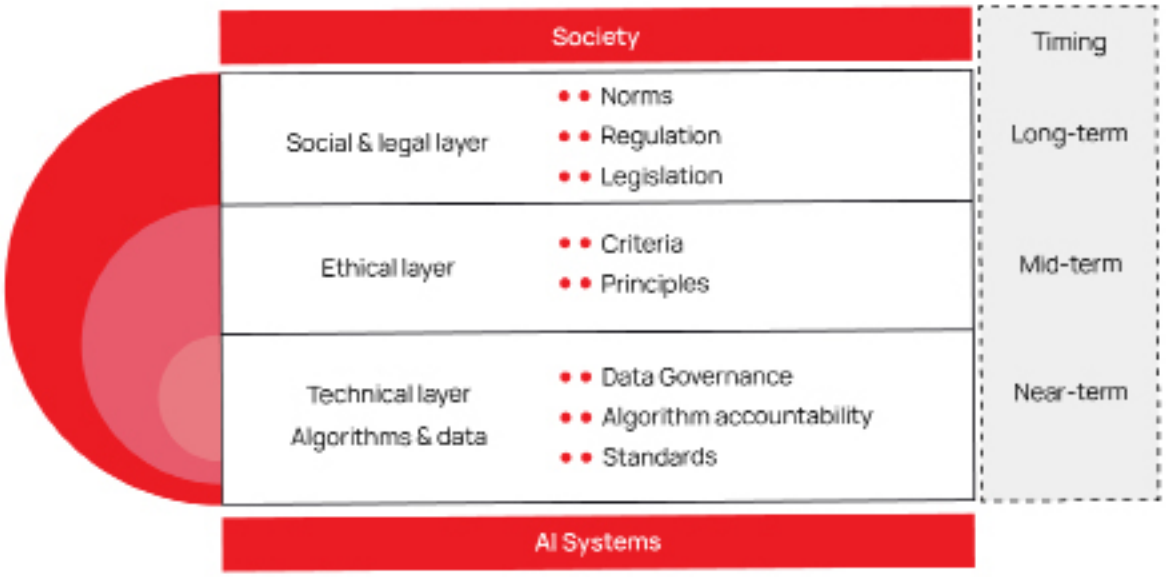

Figure 1. A layered model for AI governance

3.2 Unpacking AI governance

We used the Layered Model for AI Governance by Urs Gasser and Virgilio Almeida[42] (see Figure 1) as a framework for discussing AI governance during interviews for data collection. In the framework, Gasser and Almeida separate AI governance into distinct layers between AI systems and society. Closest to the AI systems is the technical layer, with data governance, algorithmic accountability, and standards as key components. One level higher is the ethical layer, consisting of ethical principles and criteria that AI applications and systems should adhere to in general. At the highest level, the social and legal layer addresses institutions and regulations for 'mature AI applications'. The scholars suggest that governance considerations at the technical layer can come in the immediate future, followed by the ethical layer in the midterm, and the social and legal layer in the longer term.

The Layered Model was chosen because it provides a modular breakdown of different components of AI governance for targeted discussion, and its propositions form a good base for interrogating the underlying assumptions and value judgments that come with governing sociotechnical systems. During the interviews, respondents were asked to comment on the model from the standpoint of Southeast Asia and to highlight possible

42 (Gasser & Almeida, 2017)

opportunities and challenges from the technical, ethical, and social and legal angles of AI governance.

Respondents raised two main concerns in using the Layered Model as a base for framing the analysis of AI governance in the Southeast Asian context. Firstly, some pushed back against the layered approach, arguing that the integration and intersectionality of the different aspects are crucial and it is where the main challenges lie. The second point of contention that arose from discussions is the timeline proposed in the Layered Model, or when governance measures should be put in place for individual components. In particular, the proposal to begin with the technological layer in the near term and leave the social and legal layer until a later time was heavily contested. The implicit assumption of industrial self-regulation, where ethical criteria, social norms, and legal frameworks come after the technology is developed and deployed, was questioned by some experts, even though others argued that the industry was better placed to regulate themselves.

It has been suggested that the Layered Model for AI Governance reflects the current practice in the field.[43] Governance at the legal and social layer happens much slower than the rapid pace of industrial innovation, and the private sector often leads the way in developing standards and best practices. The burgeoning field of AI ethics indicates the separation of ethics into its own layer, where it is neither supported by robust legislation nor adequately put into practice by engineers.[44] The layers, if seen as communities of interest (such as the policy and legal community, ethicists, and technologists), do tend to congregate in their respective silos, having their own conversations and debates, while not engaging with others beyond their field.

Given that AI governance in the region is at a nascent stage, as is the adoption of new AI technologies, there is still room to reshape the existing practices of AI governance to suit the needs of the region. Keeping in mind the respondents' critiques, we will explore each aspect of AI governance briefly and then consider them in an integrated manner in terms of challenges and opportunities, relating them with the situation in Southeast Asia. The suggested timing for governance of different aspects of the Model will be omitted in the following discussion, assuming instead that each governance aspect

43 From interview data
44 (Hagendorff, 2020)

holds equal importance in urgency.

The technical aspect

Gasser and Almeida outline data governance, algorithmic accountability, and standards as the main areas of AI governance from a technical point of view. Proper data governance includes ensuring that data used to train AI systems is updated and secure, and that it can be viewed at a macro level (such as regulating data protection and cross-border data flows), or at a micro level of organisational policies for effective data management. Algorithmic accountability focuses on the algorithms behind machine-generated algorithms, making sure that they result in fair, accountable, and transparent systems, among other criteria. Together, data governance and algorithmic accountability are important to control for AI bias and AI safety in general.

Rules on data governance and algorithmic accountability make their way into standards, or 'guides for behaviour and for judging behaviour'.[45] These are formed at international and national levels as well as in the private sector, where the conventions become de facto or de jure ways forward in AI development. In terms of international standards, the International Organisation for Standardisation (ISO) and the Institute of Electrical and Electronics Engineers (IEEE) are the main institutional bodies that coordinate work on AI standards. ISO standards have had success in being mandated in government regulation globally, but ongoing efforts on AI are few and preliminary; IEEE standards are not state-enforced but their work on AI is more varied and specific.[46] While countries producing AI technologies may set standards at a national level, it is in their interest to push at the international level for standards that align most closely to their national standards and priorities.

Most Southeast Asian countries are absent in standards-setting forums because of the low level of local production and manufacturing in terms of AI or AI-enabled technologies. Work on algorithmic accountability at a national level appears to be rare. Some governments have attempted to approach the problem of data governance by providing frameworks at a national level; at the regional level, there is the ASEAN Framework on Digital Data

45 (Cihon, 2019)
46 ibid

Governance. However, in practice, some big companies within the region build their own data governance structure and use it as a foundation for data sharing with their partners or contractors, creating a partnership trust ecosystem. This facilitates data governance across the organisation's supply chain in different industries, with the organisation as the heart, to standardise protections and other procedures.[47]

The ethical aspect

The field of AI ethics has gained significant interest in recent years as governments, corporations, and other actors within the field debate and decide on what constitutes ethical AI development and use. Many have released ethical AI principles and guidelines, and a study on 84 such documents found that the five most commonly raised AI ethical principles are transparency, justice and fairness, non-maleficence, responsibility, and privacy.[48] These efforts at solidifying ethical thinking for AI are not legally binding, but are important as signposts to shape policymaking and governance. In Southeast Asia, countries such as Thailand and Singapore have AI ethics initiatives at the national level, with Thailand's National AI Ethics Guidelines endorsed by its cabinet in December 2020,[49] and Singapore's AI ethics council set up by the Infocomm Media Development Authority (IMDA).[50]

Scholars have pointed out that concerns outlined within dominant AI ethical principles tend to be the most easily operationalised mathematically, with narrow focuses instead of systemic.[51] Further critiques highlight that conversations on AI ethics framing these principles usually happen within small and privileged elite circles in the Global North, and assume that positive and negative impacts of AI are universally the same across cultures and species, with problems that can be objectively measured and fixed.[52] They also presuppose that potential unethicality lies at the design level of the technology, and not at the business level or at the user level.[53] From a technical point of view, as pointed out by one of the respondents, programming architecture affects the operationalising of ethical

47 From interview data
48 (Jobin et al., 2019)
49 (Sharon, 2020)
50 (Tanoto, 2019)
51 (Hagendorff, 2020)
52 (Greene et al., 2019)
53 ibid

principles – for instance, unsupervised machine learning differs from supervised machine learning in that the former is a black box that learns from and amplifies societal bias and existing norms, which makes the implementation of AI ethical principles difficult.[54] Indeed, putting AI ethical guidelines and criteria into practice is challenging. Some have criticised big tech companies for pouring resources into the academic field of AI ethics to influence the framing of problems,[55] ultimately aiming to delay hard regulations through what one of the respondents described as 'the illusion that governance is happening without any governance actually taking place'.[56] Studies from the field have also described ethical guidelines as having an 'almost zero' influence in the practices of software engineers,[57] and that AI practitioners prioritise practical considerations such as customer requirements and project budget limitations over ethical principles that are not backed by legislation.[58] These challenges do not diminish the importance of AI ethics, but indicate that major rethinking and restructuring needs to happen to embed ethics into the technical, social, and legal layers.

The social and legal aspect

The social and legal aspect of AI governance can be seen as a way of operationalising and consolidating the limitations and capabilities presented at the technical layer and the concerns and dilemmas of AI use at the ethical layer.[59] Lawmakers and members of society debate about how technology can help achieve societal goals and visions, and provide checks and balances to protect against misuse and negative impacts. The regulatory environment includes hard laws, soft laws, technical standards, and even digital literacy; it also spans multiple geographical jurisdictions, sectors, and policy levels. While discussions on issues of geopolitical security, cross-border data flows, national AI strategies, etc. focus on a higher level, we also have to consider regulatory actions on a much more granular level, such as within sectors or at the state or city level where the technologies are applied.

In the context of Southeast Asia, the focus on AI applications in AI governance is especially important because the region mainly uses and imports AI technologies which are built in

54 From interview data
55 (Ochigame, 2019)
56 From interview data
57 McNamara et al. (2018) cited by (Hagendorff, 2020)
58 (Orr & Davis, 2020)
59 From interview data

other countries. Given these circumstances, countries within the region would find policy controls and incentives implemented at the site of AI application to be most accessible and impactful. However, even at this level, shaping a domestic regulatory environment for AI would be a complex undertaking because overarching regulations on technology would affect other laws, which impinge on the existing rights, privileges, obligations, or responsibilities of stakeholders;[60] different sectors and states/cities would also have their own contexts and specific risks and harms to guard and regulate against.

The social implications of AI go beyond its immediate application, as technological affordances contribute significantly in shaping the way we communicate, think, and live. With the rapid advancements of technology, longer term implications on society are yet unclear and unexplored, even while observers sound alarms on current and near-term social issues. Policymaking and governance on AI implications therefore need to cover a breadth of social and systemic issues across time, considering larger questions such as social cohesion and environmental impacts. For example, the mass displacement of jobs in the future would result in psychological impacts across the working population in Southeast Asia, which is, as a respondent pointed out, less a legal challenge than a social one.[61]

3.3 Challenges of governing AI in Southeast Asia

There are a number of challenges and gaps within the AI governance space in Southeast Asia. The following points are main themes that arose from expert interviews. This list is not exhaustive nor exclusive to the Southeast Asian context, as other regions may also be grappling with similar concerns.

Focus of governance is on encouraging adoption and innovation, rather than checks and balances

Governments and the private sector use the language of progress and modernity to encourage AI development and use, and there is often a sense of urgency in the rush to adopt the newest and latest so as not to lose out on potential benefits and early mover

60 From interview data
61 From interview data

advantages. As a result, there is a general eagerness at the policy level to accept and speed up technology adoption, with countries charging ahead with AI strategies and investments, and setting up digital infrastructure. In terms of priorities, the emphasis on technology governance is less on installing checks and balances or monitoring and evaluation, and more on accelerating forward, creating a situation of 'AI exceptionalism' with more relaxed safety standards for AI and fewer regulations for public protection.[62] In practice, there are frictions working against seamless adoption, but they mainly come in the form of bureaucratic hurdles and lack of state capacity, not deliberate actions to create institutional safeguards.

Unclear AI use cases impinge on data governance

One of the respondents who works within the industry noted that a key problem in Southeast Asia is identifying and working towards use cases for AI technologies. With the exception of the finance, telecommunications, and healthcare sectors, Southeast Asian companies in most sectors (such as manufacturing, retail, logistics) are unable to articulate the purpose of collecting the data that they collect because the use case is unclear. Indeed, they may not know what data they are sitting on and how to use it. Indiscriminate collection of data without a purpose poses a challenge towards data governance, data protection, and privacy.[63]

International norms need to be adapted for local governance

Policymaking by governments does not happen in a vacuum, as there is a trickle-down effect when international norm-making such as treaties, trade agreements, or international standards get adopted and adapted at the national level. There is a culture of law-making where laws at the national level are harmonised with international laws and norms; this is also done for practical reasons so companies would already be complying with prevailing rules. This is both an opportunity and a challenge: countries can emulate existing playbooks and learn from the experience of more advanced countries, but adaptations that are not sufficiently tailored to the local settings and culture may expose Southeast Asian countries to AI security risks. Some have also mentioned that governance at a transnational

62 From interview data
63 From interview data
64 From interview data

level helps to balance out the powers held by individual governments which often grant themselves more power, such as being exempt from data protection frameworks.[64]

Southeast Asia is under-represented in international standards-setting

One oft-mentioned problem within this context is that countries from Southeast Asia are not sufficiently represented in forums for setting international standards. Southeast Asian countries are mostly absent from discussions on AI standards in ISO, with only Singapore in attendance as an observer.[65] There are valid reasons for this, as the barriers to entry in these discussions are high, requiring countries to fund trained professionals for sustained engagement on the topic, in locations and time zones (if done remotely) outside the region. Not being major producers of the technologies, Southeast Asian countries do not see the point of investing resources in these avenues. The downside of this lack of participation is that the region loses out on a key aspect of AI governance, particularly in shaping the direction of the technology that it eventually uses.

Southeast Asian countries do not have a strong regional voice

Southeast Asian countries, especially those that are smaller, would benefit from working as a bloc to increase their negotiating power and capacity, as well as build common standards. The Association of Southeast Asian Nations (ASEAN) would be well-positioned to do this; it has worked on regional projects to a certain extent, such as with the ASEAN Smart Cities Network and the ASEAN Framework on Digital Data Governance. However, ASEAN is an inter-state organisation and not a supranational organisation, with a principle of non-interference agreed upon by its 10 member states (not including Timor-Leste). The bloc encounters difficulties in organising a united front in the face of geopolitical tensions[66] or regional issues such as the COVID-19 pandemic, Rohingya crisis, and coup in Myanmar.[67] Indeed, interview respondents did not express high confidence in ASEAN as a strong platform to champion and fight for issues at a regional level, although it was not ruled out entirely.

65 From interview data
66 (Ho, 2020)
67 (Al Jazeera, 2020)

State capacity to govern AI technologies is low on average

One of the concerns raised by respondents is the lack of state capacity to adapt and localise some of the legislative frameworks that are coming from the West or from other countries more advanced in AI governance. For example, conversations around data protection within the region are often based on the European GDPR, but most Southeast Asian countries (Singapore being the exception) do not have the institutions to implement or enforce these protections, rendering these conversations irrelevant at best, and dangerous at worst, as citizens are not protected against the harms. It has also been observed that due to low state capacity for AI in Southeast Asia, the private sector has led in the conceptualisation, design, development, and deployment of AI for public services. Resulting implications of this include the prioritisation of the business case instead of public benefits in public projects, and technologies expanding their functionalities and data collection beyond the initial given purpose, without legal constraints.[68]

Meaningful public participation in AI governance is difficult

A respondent pointed out that there are numerous avenues of participation for civil society within different economic sectors, professional settings (such as the technical, ethical, social and legal aspects, as discussed in Section 3.2.) or policy levels (from local to international), but there is a lack of interest from the general public to do so.[69] However, it is important to acknowledge that for meaningful participation to happen, there has to be willingness, coordination, and capacity from both top-down and bottom-up perspectives. From the top-down perspective, governments have shown the tendency to be authoritarian and paternalistic; from the bottom-up perspective, participation in policy processes takes some level of capacity and interest on the part of citizens to understand the technology and the governance processes. The private sector-driven and cross-border nature of AI governance further complicates public participation, as a small number of tech companies control most of the AI technologies in use, but they are not subjected to local policy processes.

68 (Marda, 2020)
69 From interview data

IV. RECOMMENDATIONS FOR AI GOVERNANCE IN SOUTHEAST ASIA

4.1 General recommendations

Drawing from expert interviews, the following section provides recommendations on policymaking and advocacy for AI governance in the region.

Anchor AI governance in its societal and application contexts

Situating AI in society (instead of society in AI) will enable civil society to ask and answer fundamental questions such as if the technology is needed, or indeed, wanted, within the context of the norms, values, and realities of a society. Anchoring AI governance in its site of application entails having clear objectives of what the technologies are used for in order to facilitate feasibility and impact analyses, and includes weighing societal benefits and security risks. Larger debates and critiques on social and economic structures would have to inform the adoption of technology; therefore, technological solutions should be considered alongside and complemented by a wider range of other policy mechanisms in order to achieve a better societal outcome. In general, most respondents agree that there should be legal repercussions when rules are not followed. Sectoral variance and use cases would determine whether regulations should be more prescriptive or descriptive (for

instance, there are certain industries such as health and finance that would usually have more stringent regulations).

Build constitutionality around AI and data governance

Building constitutionality[70] around AI and data governance would embed ethical judgments into the foundation of what can and cannot be done with the technology within the context of a given nation or community covered by such a constitution. Such a normative framework for AI and data governance would form the basis of lawmaking on AI technologies within a certain jurisdiction and its existing hierarchy of laws, such as its statutes and legislations, regulations, procedures, guidelines, and so on. The constitutional framework can also be useful in cases when hard regulations are not yet formed – for instance, data protection authorities can deliver judgments based on the framework when receiving complaints of data misuse in grey areas. With that, AI ethics is put into practice and institutionalised, instead of remaining at high-level discussions with little implementation and enforcement. A constitutional approach for AI norm-making would also delineate boundaries between constituencies, respecting the right of nations and local communities to decide on what they stand for, their common vision for the future, and what role technology would play towards that end.

Consider multiple levels and sectors of policymaking

Considering AI governance from different levels and sectors of policymaking allows for a more nuanced approach for strategising interventions. At each policy level, be it local/city, sectoral, national, regional, and international, there are different actors and mechanisms at work in AI governance. The state is not a monolith but consists of several moving parts, with different imperatives and limitations. At a local/city level, AI technologies for smart cities are deployed, and so city planning and town hall meetings are avenues for participation in governance. At a national level, legislations are put in place to protect citizens, and federal governments provide the enabling environment and guidelines for technology adoption. Different sectors would have sector-specific regulations and regulators for data governance and AI use, or professional associations providing licences to practice and codes of conduct. At a regional level, Southeast Asia has a large market of consumers; governments working together as a bloc would be able to achieve better results in forcing

70 Constitutionality is used here as a wider concept of limiting the power of governments and corporations in order to protect the people.

compliance in big tech companies. Similarly, the Southeast Asian bloc can also participate in international standards-setting to make sure that the needs and views of the region are translated into technical products.

Enable whole-of-society participation in AI governance

A people-centric AI governance framework implies that governance processes need to seek out and support participation from diverse stakeholder groups. Government agencies need to be involved as regulators and as implementers of AI in public service. Civil society and the academic community are well-placed to identify AI risks and harms, and can also identify social problems that can potentially benefit from AI application. The private sector needs to be engaged – in particular, the technology sector because they have the technical expertise to inform AI governance, as well as small and medium-sized enterprises (SMEs), which form the majority of business owners in Southeast Asia and which are well-positioned to articulate challenges in compliance with data and AI governance, so that regulatory processes can cater to their needs. To enable meaningful participation, a fundamental requirement is to overcome information deficits, so that laypeople and stakeholder groups understand the implications and risks of AI technology. The responsibility for transparency and public awareness lies with the technology provider and promoter, who should 'explain the decisions and not the math'.[71] Digital literacy also needs to be cultivated, to equip the public with adequate knowledge to protect themselves against the potential harms of AI, and to have societal conversations on the direction of AI governance.

Consider existing laws, regulatory frameworks, and processes that may be used for AI governance

Some respondents point out that there are existing laws, institutional frameworks and processes that already work to protect against many of the harms posed by AI technologies; more work has to be done to understand and apply the existing structures to the context of AI governance instead of building AI regulatory frameworks from scratch. Some potential vehicles for norm-making and rules-setting for AI technologies that have been suggested by the respondents include the following: trade agreements (in the area of digital trade); public procurement criteria and processes; consumer protection and

71 From interview data

rights; intellectual property law; business and human rights; antitrust and competition policy; corporate governance and board accountability; and digital tax frameworks, among others. As these areas can be fairly specialised and technical, a multidisciplinary and cross-disciplinary approach would greatly benefit AI governance, with professionals who are 'a bit of a crossbreed',[72] who are familiar in both technology and policy areas involved in the process.

Focus on data governance to reduce AI harms and increase AI benefits

Data governance is one of the important pillars of AI governance, which is critical to reduce AI security risks and harms for countries in Southeast Asia. Some recommendations on data governance policies are to go beyond personal data to cover more types of data such as community data, and ensure that such data is owned and controlled by the community itself for economic self-determination and to minimise the risk of data colonisation. At the same time, data protection frameworks should move beyond the paradigm of data privacy at an individual level based on consent, to mechanisms that recognise that privacy is networked, and that the obtained consent is not valid when users are barred from accessing services when they do not give their consent. Other recommendations on data governance raised by respondents include pushing the private sector to open up their datasets to a pool of open training data as a common resource, and to focus on maintaining data integrity as an extension of AI safety.

4.2 Recommendations for civil society

Including civil society is important in ensuring safe and beneficial AI. A coordinated and holistic approach is needed to integrate civil society into AI governance processes in a way that is equitable and not tokenising. This section provides recommendations on potential roles that civil society organisations can play in AI governance, and possible ways forward for strategic participation.

Increase awareness and participation of civil society in AI governance

Most of the digital rights activism and advocacy in Southeast Asia centre on the translation

72 From interview data

of conventional human rights in the digital space, such as freedom of expression online and safety against online gender-based violence and cyberbullying.[73] The level of understanding on the implications of automated decision-making systems and other AI-powered technologies is slowly increasing, but remains low. Work on AI and data governance is therefore rare, and civil society organisations in the region generally have fewer resources and greater competing priorities than engaging with complex technical issues that fall outside their core functions. An important way forward is to increase the awareness of civil society on significant impacts of AI on human rights and communities, and to relate these impacts to their existing areas of work – including its relevance to their core functions – to make a case for participation. Similarly, civil society organisations can increase public awareness by explaining the issues to the layman, so that AI security risks can enter mainstream political and social debates and inspire more activism and advocacy.

Build capacity to engage in AI governance

Different types of capacities are needed to engage in AI governance. The first is the understanding of the technologies themselves and the potential implications. Besides training workshops, a respondent suggested that participation in or engagement with AI interest groups such as AI Big Data Association (Asosiasi Big Data AI, ABDI) in Indonesia or the equivalent in other countries would enable interested parties to learn more from tech professionals and advocates. Some of these interest groups are also very active in engaging with governments and thus can be valuable allies in AI governance. The second area of capacity-building is related to the relevant AI governance processes to engage in, and how to strategise in building coalitions and coordinating advocacy across local, national, regional, and international levels. Some examples of organisations that are working on this angle of capacity-building for civil society include Global Partners Digital, Access Now, ARTICLE 19, Privacy International, and the Association for Progressive Communications.

Form strategic networks and collaborations

Civil society organisations (CSOs) operate at many levels – from grassroots to international policy – and across different sectors, interest areas and localities. They are therefore well-positioned to form alliances within and outside civil society. Networking within civil

73 (Tan, 2019)

society groups yields a number of benefits, such as strength in numbers and the ability to optimise limited resources. By bridging different societal actors, CSOs can also facilitate interdisciplinary and cross-sectoral conversations on AI governance. Quite a few of respondents' recommendations for civil society fall into the category of network-building and strategic collaborations, with some specific suggestions as follows:

- Networking and coordination between Southeast Asian and international CSOs to widen representation in international fora, and to share knowledge
- Forming a Southeast Asian community of scholars and advocates under the theme of AI governance, possibly through a conference or networking program
- Producing joint articles or projects between civil society and the tech community to increase cross-disciplinary knowledge sharing and dissemination
- Bridging civil society and academia through guest lectures that include a human rights or societal angle to inspire the next generation of ethical engineers
- Joining forces among Southeast Asian civil society actors to advocate at a regional level

Conduct more advocacy-based research on AI applications in Southeast Asia

There are insufficient studies on AI applications and their social impacts in Southeast Asia, making it difficult to conduct evidence-based AI governance and advocacy. A key contribution that civil society can make in AI governance is to take on more of a watchdog role for AI harms, which entails the documentation of lived and everyday experiences of navigating automated decision-making systems within the region. While most studies on the impacts of digital technologies are focused on experiences in the Global North, researchers within Southeast Asia can replicate these studies to scrutinise the situation in the region. Some examples of other research projects proposed by respondents include: end-to-end ethnographic case studies of AI in Southeast Asia (covering the lifecycle of a specific AI product from development, roll-out, to real-world usage), and a repository of portfolios of major companies supplying AI technologies in the region, with details of

projects that they have launched in different parts of the world and their implications, to inform public procurement decisions.

Leverage existing capacities on human rights and community work for mobilisation and advocacy

While civil society actors in Southeast Asia may not have sufficient capacity to look at the technical specifics of AI, those working on civil and political rights already conduct in-depth human rights work (such as on issues of civil freedoms and privacy), enabling them to plug into discussions about the ethical and societal aspects of AI governance (as elaborated in Section 3.2). Within the developing context of Southeast Asia, there are also other types of community organisations besides groups working on civil and political rights. These organisations, such as professional and interest-based associations, charity and mutual aid organisations, and local and neighbourhood groups, may also provide the social backbone in collectivising and organising on AI governance issues.

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